

# Značaj mjerenja prijenosnih gubitaka i pripadajuće mjerne nesigurnosti pri prekograničnoj razmjeni električne energije

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Doctoral thesis / Disertacija

2018

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*Permanent link / Trajna poveznica:* <https://urn.nsk.hr/urn:nbn:hr:200:713342>

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*Download date / Datum preuzimanja:* **2024-12-19**

*Repository / Repozitorij:*

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**ZNAČAJ MJERENJA PRIJENOSNIH GUBITAKA I PRIPADAJUĆE  
MJERNE NESIGURNOSTI PRI PREKOGRANIČNOJ RAZMJENI  
ELEKTRIČNE ENERGIJE**

**DOKTORSKI RAD**

Osijek, 2018.

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Doktorski rad je izrađen na Zavodu za elektrostrojarstvo

Mentor: Prof. dr. sc. Kruno Miličević

Doktorski rad ima: 238 stranica

Doktorski rad br.: 66

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*Zahvaljujem svojoj obitelji, a posebno supruzi, na velikoj i nesebičnoj podršci tijekom doktorskog studija.*



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Datum obrane doktorskog rada: 7. prosinca 2018.

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# 1. UVOD

U suvremenom elektroenergetskom sustavu (EES), mjeriteljstvo ima sve važniju ulogu jer između ostalog daje uvid u sustav koji se promatra odnosno čiji parametri se nadziru. Osim tehničkih zahtjeva s jedne strane, za rad EES-a u tržišnom okruženju nužno je zadovoljiti i određene ekonomske kriterije. Drugim riječima, sustav mora biti izgrađen, raditi i biti održavan uz minimalne troškove.

Jedna od značajnih, ali često zanemarenih komponenti u takvom okruženju je razmjena električne energije na prijenosnoj razini (110 kV, 220 kV i 400 kV) preko međunarodnih spojnih vodova. Za početak promotrimo ulogu prijenosne mreže u EES. Prijenosna mreža, na koju su priključeni svi veći proizvodni pogoni u smislu priključne snage, ima zadatak prenijeti električnu energiju od mjesta proizvodnje do mjesta predaje. Sa stajališta prijenosne mreže to su mjesta u kojima se električna energija predaje krajnjim kupcima npr. u distribucijski sustav (0,4 kV, 10 kV, 20 kV i 35 kV) i krajnjim kupcima priključenima na visoki napon (npr. elektrificirana željeznička mreža, tvornice i sl.) te mjesta prekogranične razmjene električne energije. Uzimajući u obzir velike količine prenesene energije, lako se dolazi do zaključka da je kvalitetno mjerenje od zajedničkog interesa za sve sudionike razmjene.

Mjerenje je jedan od temeljnih procesa za vrednovanje proizvoda koji nastaju kao rezultat znanstvenih i stručnih procesa, primjerice industrijske proizvodnje i slično. Putem mjernog procesa mjeritelj komunicira s fizičkim sustavom [1]. Rezultat mjerenja mora biti valjan, usporediv i ponovljiv [2], odnosno razumljiv svim zainteresiranim sudionicima predmetnog procesa. Kvalitetno mjerenje podrazumijeva sve uređaje koji čine obračunsko mjerno mjesto (mjerni transformatori, mjerne grane, brojila električne energije, itd.) i, ne manje važno, način iskazivanja mjernog rezultata (izmjerena energija, gubici prijenosa, mjerna nesigurnost, itd.).

Tradicionalni pristup iskazivanju mjernog rezultata temeljio se na tzv. konceptu mjerne pogreške (engl. *measurement error concept*) gdje se iskazivao rezultat mjerenja uz pripadajuću pogrešku. Procjenjivala se najveća pogreška te se mjernom rezultatu pripisivao interval širine dvostruke najveće pogreške simetrično smješten oko mjernog rezultata [3]–[5]. Iskazivanje pogreške podrazumijeva poznavanje prave vrijednosti mjerene veličine što predstavlja ključan problem za ovu teoriju. Zbog nesavršenosti mjernog postupka, prava vrijednost mjerene veličine je nepoznata što dovodi do zaključka da je takav način iskazivanja mjernog rezultata nedostatan. Uvidjevši nedostatke ovog postupka, Međunarodna organizacija za normizaciju (ISO) izdala je usklađeni dokument `Guide to the Expression of Uncertainty in Measurement` (GUM) [6], [7] koji

predlaže novi način za iskazivanje mjernog rezultata, tzv. GUM metodu. Zbog nemogućnosti poznavanja prave vrijednosti mjerene veličine određuje se interval koji s određenom vjerojatnošću sadrži mjerni rezultat i naziva se „mjerna nesigurnost“ koja se u GUM-u definira kao „interval oko mjernog rezultata za koji se može očekivati da obuhvaća velik udio razdiobe vrijednosti koje bi se razumno mogle pripisati veličini podvrgnutoj mjerenju“ [7]. Ovaj dokument postao je referenca u mjeriteljskoj znanosti i struci, ali i mnogim drugim granama kojima je u interesu pravilno iskazivanje mjernog rezultata [8], [9].

Mjerni rezultat u tom kontekstu možemo promatrati kao proizvod koji mora biti svrsishodan odnosno mora imati svoju namjenu, osnovne sastavnice od kojih se sastoji, proces kojim se dobiva mjerni rezultat i uz to podatak koji će govoriti u kojoj mjeri se smatra da je rezultat blizu ili daleko od stvarne vrijednosti mjerene veličine. Mjerna nesigurnost je najjednostavniji i široko prihvaćeni način za iskazivanje stupnja povjerenja u rezultat mjerenja [10]. Mjerna nesigurnost govori o manjku spoznaje mjerene veličine i proizlazi iz nepotpune informacije o mjerenoj veličini i utjecajnim veličinama [11] te se prema [12] može promatrati i kao reciprocitet prema stupnju spoznaje mjerene veličine.

Općenito govoreći, mjerna nesigurnost se može podijeliti na dvije osnovne sastavnice. Prva je slučajna (engl. *random*) sastavnica koja se utvrđuje na temelju rezultata uzastopnog ponavljanja eksperimenta i opisuje se s pomoću funkcije gustoće vjerojatnosti. Druga sastavnica je sustavna mjerna nesigurnost (engl. *systematic*) koja na neki način predstavlja stanje sustava. S obzirom na to da ona predstavlja poznato ponašanje sustava može se i kompenzirati tj. mjerni rezultat se može ispraviti za njezin iznos.

Metoda za iskazivanje mjernog rezultata i pripadajuće mjerne nesigurnosti zasnovana na GUM-u sadrži i niz nedostataka koji su nadoknađeni s pomoću novih metoda. Neke od tih su: Monte Carlo (MC) metoda, adaptivna Monte Carlo (AMC) metoda [13], Joint Random-Fuzzy Variables metoda [4], [14], modifikacija GUM metode zasnovana na Bayesovoj statistici [15]–[17], Polynomial Chaos Theory [18]–[20], itd.

Više detalja o provedbi GUM metode, njezinim nedostacima i načinima na koji su ti nedostaci nadoknađeni nalazi se u sljedećim poglavljima disertacije.

## 1.1. Pregled postojećih metoda za izračun mjerne nesigurnosti i njihova zastupljenost u znanstvenim člancima

U mjeriteljskoj znanosti postoji niz različitih metoda i pristupa za procjenu mjerne nesigurnosti. Najpoznatiji GUM pristup predložen je u već spomenutoj literaturi [3], ali osim njega postoje i druge metode o kojima će biti riječi u nastavku. Razvoju novih metoda pridonose i određeni nedostaci GUM metode o kojima se detaljnije piše u sljedećim poglavljima disertacije.

U članku [8] detaljno su klasificirane postojeće metode izračuna mjerne nesigurnosti objavljene u 114 znanstvenih članaka izdanih u razdoblju od 2004. do 2010. godine u časopisima *IEEE Transactions on Instrumentation and Measurement*, *Measurement*, *Flow Measurement and Instrumentation* i *Precision Engineering* (Tablica 1.1.).

Tablica 1.1. Raspodjela članaka prema metodi izračuna mjerne nesigurnosti i godini izdavanja u razdoblju od 2004. do 2010. godine

| Metoda/Godina           | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | Ukupno |
|-------------------------|------|------|------|------|------|------|------|--------|
| GUM                     | 8    | 11   | 10   | 6    | 6    | 13   | 9    | 63     |
| Vlastita metoda         |      |      | 3    | 2    | 3    | 4    | 4    | 16     |
| Fuzzy varijable         | 2    | 1    | 1    | 1    | 1    | 3    | 1    | 10     |
| Više metoda istovremeno | 2    | 1    | 2    | 1    |      | 2    | 1    | 9      |
| Monte Carlo             |      |      | 2    | 2    | 1    | 3    |      | 8      |
| Druge metode            |      |      | 1    | 1    |      | 3    | 3    | 8      |
| <b>Ukupno</b>           | 12   | 13   | 19   | 13   | 11   | 28   | 18   | 114    |

Najzastupljenija metoda je GUM (55,3 % promatranih članaka). Nakon toga slijede članci koji prikazuju posebne metode koje su autori predložili, a ne mogu se pridružiti nekoj od postojećih metoda (14,03 %). Članci u kojima se koristi metoda temeljena na fuzzy varijablama zastupljeni su s 8,77%. Dio članaka (7,9 %) koristi više metoda istovremeno i to najčešće radi njihove usporedbe, dok osim toga još 7 % članaka koristi Monte Carlo metodu i još neke manje poznate metode (7 %).

Na početku intenzivnog dijela istraživanja prikazanog u disertaciji (kraj 2014. godine) bila je napravljena dodatna analiza objavljenih radova s obzirom na metode za izračun mjerne nesigurnosti u znanstvenim člancima objavljenima u časopisu *IEEE Transactions on instrumentation and measurement* u razdoblju od 2011. do 2014. godine (Tablica 1.2.). Ukupno je analiziran 41 članak koji sadrži izračun mjerne nesigurnosti [3], [10]–[12], [21]–[57].

Tablica 1.2. Raspodjela članaka prema metodi izračuna mjerne nesigurnosti i godini izdavanja u razdoblju od 2011. do 2014. godine

| Metoda/Godina           | 2011     | 2012      | 2013     | 2014      | Ukupno    |
|-------------------------|----------|-----------|----------|-----------|-----------|
| GUM                     | 2        | 4         |          | 2         | 8         |
| Vlastita metoda         |          | 3         | 1        | 1         | 5         |
| Fuzzy varijable         |          | 2         |          |           | 2         |
| Više metoda istovremeno |          | 5         | 2        | 2         | 9         |
| Monte Carlo             | 2        | 1         | 2        | 4         | 9         |
| Druge metode            | 2        | 2         | 3        | 1         | 8         |
| <b>Ukupno</b>           | <b>6</b> | <b>17</b> | <b>8</b> | <b>10</b> | <b>41</b> |

U ovom razdoblju može se uočiti pad zastupljenosti članaka koji koriste GUM metodu (19,5 %) i značajan porast zastupljenosti članaka koji koriste Monte Carlo metodu (22,0 %) što ujedno čini Monte Carlo metodu trenutno najzastupljenijom metodom za izračun mjerne nesigurnosti. Pored toga pad zastupljenosti bilježe članci u kojima su autori predložili vlastite metode (12,2 %) i članci u kojima se koristi metoda temeljena na fuzzy varijablama (4,9 %). Znatno povećanje bilježe članci u kojima se koristi više metoda istovremeno (22,0 %) i članci koji koriste neke druge manje poznate metode (19,5 %).

Nadalje su isti članci iz razdoblja od 2011. do 2014. godine podijeljeni prema metodi za izračun mjerne nesigurnosti i primjeni u znanstvenim područjima, poljima i granama (Tablica 1.3).

Tablica 1.3. Raspodjela članaka prema metodi izračuna mjerne nesigurnosti i području primjene

| ZNANSTVENO PODRUČJE     | ZNANSTVENO POLJE             | ZNANSTVENA GRANA                           | GUM      | Vlastita metoda | Fuzzy varijable | Više metoda istovremeno | MC       | Druge metode | Uk.       |
|-------------------------|------------------------------|--|----------|-----------------|-----------------|-------------------------|----------|--------------|-----------|
| Tehničke znanosti       | Elektrotehnika               | Elektroenergetika                          | 1        |                 |                 | 1                       | 6        | 3            | 11        |
|                         |                              | Telekomunikacije i informatika             | 2        | 2               |                 | 1                       | 1        | 2            | 8         |
|                         |                              | Automatizacija i robotika                  | 1        | 1               | 1               |                         |          | 1            | 4         |
|                         |                              | Elektronika                                |          | 1               |                 |                         | 1        | 2            | 4         |
|                         | Geodezija                    | Pomorska, satelitska i fizikalna geodezija |          |                 | 1               |                         |          |              | 1         |
|                         | Građevinarstvo               | Hidrotehnika                               | 1        |                 |                 |                         |          |              | 1         |
|                         | Strojarstvo                  | Proizvodno strojarstvo                     | 1        |                 |                 |                         |          |              | 1         |
|                         | Tekstilna tehnologija        | Tekstilno-mehaničko inženjerstvo           |          |                 |                 |                         | 1        |              | 1         |
| Prirodne znanosti       | Biologija                    | Mikrobiologija                             |          | 1               |                 |                         |          |              | 1         |
| Biomedicina i zdravstvo | Kliničke medicinske znanosti | Interna medicina                           | 1        |                 |                 |                         |          |              | 1         |
| Bez primjene            |                              |  | 1        |                 |                 | 7                       |          |              | 8         |
| <b>Ukupno</b>           |                              |  | <b>8</b> | <b>5</b>        | <b>2</b>        | <b>9</b>                | <b>9</b> | <b>8</b>     | <b>41</b> |

Najšire zastupljena Monte Carlo metoda korištena je isključivo u području tehničkih znanosti i to najviše u elektroenergetici. Kod ostalih metoda ne može se primijetiti posebno velika zastupljenost u niti jednom od područja nego je njihova primjena raspoređena ravnomjerno.

## 1.2. Hipoteza

U okviru disertacije promatra se prekogranična razmjena električne energije gdje je, zbog velikih količina razmijenjene energije, pravilan način iskazivanja izmjerene energije, gubitaka prijenosa i pripadajuće mjerne nesigurnosti od ključne važnosti. Trenutno ne postoji jedinstvena metoda propisana zakonskom regulativom koja će propisati tehničke detalje vezano uz metodu raspodjele razmijenjene energije i pripadajućih gubitaka. Također, niti jedna od metoda koje se trenutno koriste ne uzima u obzir mjernu nesigurnost odnosno sistematske pogreške uključene u mjerni proces koje je moguće kvantizirati i ispraviti. Nesigurnost u mjernom rezultatu energije i gubitaka koji se raspodjeljuju među operatorima prijenosnih sustava znači posljedično i financijsku nesigurnost operatorima. Stoga je definiranje metode raspodjele energije i gubitaka, uzimajući u obzir i ispravak sistematskih pogrešaka, u zajedničkom interesu svih sudionika razmjene. Pretpostavka je da će se nakon ispravka sistematskih pogrešaka preostala mjerna nesigurnost smanjiti te da će prikazana metoda za raspodjelu energije i gubitaka biti „poštenija“ od trenutno korištenih.

Razmatrat će se način izračuna gubitaka prijenosnog voda s pomoću funkcije za mjerenje gubitaka koje nude proizvođači suvremenih brojila električne energije, tzv.  $I^2R$  gubici. Mjerna nesigurnost tako određenih gubitaka odredit će se uporabom klasične metode za izračun mjerne nesigurnosti sukladno dokumentu `Guide to the expression of uncertainty in measurement` i uporabom Monte Carlo metode. Pretpostavka je da Monte Carlo metoda daje bolje rezultate zbog ograničenja klasične metode, prvenstveno zbog nelinearnosti matematičkog modela gubitaka prijenosnog voda te zbog moguće razdiobe mjerenih vrijednosti drukčije od normalne.

Također se razmatra i način izračuna mjerne nesigurnosti otpora prijenosnog prekograničnog voda uporabom klasične metode sukladno dokumentu `Guide to the expression of uncertainty in measurement` u usporedbi s adaptivnom Monte Carlo metodom. Pretpostavka je da potonja metoda daje bolje rezultate zbog ograničenja klasične metode, prvenstveno zbog nelinearnosti matematičkog modela za otpor voda te zbog moguće razdiobe mjerenih vrijednosti drukčije od normalne.



### 1.3. Struktura doktorske disertacije

**1.poglavlje** daje uvodni pregled o metodama za izračun mjerne nesigurnosti te pregled zastupljenosti pojedinih metoda u znanstvenoj literaturi. Također je postavljena hipoteza disertacije.

**2.poglavlje** opisuje klasični način izračuna mjerne nesigurnosti sukladno dokumentu `Guide to the expression of uncertainty in measurement`. Opisuje se povijest tog dokumenta, postupak i uvjeti za provedbu metode te nedostaci.

**3.poglavlje** opisuje Monte Carlo metodu kao alternativu klasičnoj metodi za izračun mjerne nesigurnosti. Prikazan je pregled zastupljenosti ove metode u znanstvenoj literaturi, postupak i uvjeti za provedbu metode.

**4.poglavlje** sadrži teorijski uvod vezan uz konstante prijenosnog voda te nadomjesne sheme za njihov izračun. Opisane su metode za mjerenje parametara prijenosnih vodova. Prikazana je metoda za procjenu funkcije gustoće razdiobe gubitaka koji proizlaze kao rezultat simulacije iz adaptivne Monte Carlo metode i njezine modifikacije.

**5.poglavlje** sadrži teorijski uvod vezano za gubitke u prijenosnom sustavu. Prikazan je način mjerenja gubitaka uporabom ugrađene funkcije u suvremenim brojilima električne energije te izračun mjerne nesigurnosti uporabom klasične i adaptivne Monte Carlo metode.

**6.poglavlje** prikazuje način ispravka izmjerene energije za iznos sistematskih pogrešaka, analizu lanca mjernih nesigurnosti na obračunskom mjernom mjestu i metode za raspodjelu razmijenjene energije i pripadajućih gubitaka između operatora prijenosnih sustava.

**7.poglavlje** prikazuje praktične rezultate izračuna i simulacije uz pripadajuću analizu.

**8.poglavlje** sadrži skraćeni prikaz svih postignuća provedenog istraživanja u sklopu disertacije te zaključna razmatranja vezano za najvažnije rezultate i smjernice za uporabu prikazane metode.

## **2. PROCJENA MJERNE NESIGURNOSTI ZASNOVANA NA DOKUMENTU `GUIDE TO THE EXPRESSION OF UNCERTAINTY IN MEASUREMENT`**

### **2.1. Povijest dokumenta `Guide to the expression of uncertainty in measurement`**

U prošlosti nije postojao općeprihvaćeni način za iskazivanje mjerne nesigurnosti odnosno cjelovitog mjernog rezultata te se stoga ukazala potreba za izradom jedinstvenog međunarodno prihvaćenog dokumenta koji će opisati taj postupak. Takav dokument poslužio bi kao referenca u mjeriteljskoj praksi na svim razinama i u različitim područjima primjene, a mjerni rezultat iskazan u skladu s tim uputama bi bio jedinstven i prepoznatljiv. Međunarodni odbor za utege i mjere (CIPM), zatražio je 1977. godine od Međunarodnog ureda za utege i mjere (BIPM) da pokrene međunarodnu inicijativu za izradu takvog dokumenta. Radna skupina od 11 nacionalnih etalonskih laboratorija izradila je Preporuku INC-1 (1980), Izražavanje eksperimentalnih nesigurnosti. Ta preporuka je odobrena od strane CIPM 1981. godine i ponovno potvrđena 1986. godine. Nakon toga CIPM je dao zadatak Međunarodnoj organizaciji za normizaciju (ISO) da napravi proširenu verziju ove preporuke iz koje će konačno nastati dokument `Guide to the expression of uncertainty in measurement`. U njegovoj izradi sudjelovalo je ovih sedam organizacija:

BIPM: Međunarodni ured za utege i mjere

IEC: Međunarodno elektrotehničko povjerenstvo

IFCC: Međunarodni savez za kliničku kemiju

ISO: Međunarodna organizacija za normizaciju

IUPAC: Međunarodni savez za čistu i primijenjenu kemiju

IUPAP: Međunarodni savez za čistu i primijenjenu fiziku

OIML: Međunarodna organizacija za zakonsko mjeriteljstvo

ILAC: Međunarodna suradnja na akreditaciji laboratorija (od 2005. godine)

Prva verzija dokumenta izdana je 1993. godine (ISO/IEC Guide 98:1993). U međuvremenu je osnovana komisija Joint Committee for Guides in Metrology (JCGM) koja je 2008. godine izdala revidiranu i trenutno važeću verziju GUM dokumenta (JCGM 100:2008). Komisija JCGM sastoji se od dvije radne skupine. Radna skupina 1 „Expression of uncertainty in measurement“ ima zadatak promovirati dokument GUM i izrađivati njegove dodatke. Radna skupina 2 “Working

Group on International vocabulary of basic and general terms in metrology (VIM)” koja ima zadatak promovirati i revidirati dokument International vocabulary of metrology — Basic and general concepts and associated terms (VIM) [58]. Radna skupina 1 izdaje niz dokumenata `Evaluation of measurement data` koji svi zajedno čine jednu cjelinu:

- JCGM 100:2008. Evaluation of measurement data — Guide to the expression of uncertainty in measurement (GUM) [6], [7],
- JCGM 101:2008. Evaluation of measurement data – Supplement 1 to the “Guide to the expression of uncertainty in measurement” – Propagation of distributions using a Monte Carlo method (Dopuna 1) [13], [59],
- JCGM 102. Evaluation of measurement data – Supplement 2 to the “Guide to the expression of uncertainty in measurement” – Models with any number of output quantities [60],
- JCGM 103. Evaluation of measurement data – Supplement 3 to the “Guide to the expression of uncertainty in measurement” – Modelling ,
- JCGM 104. Evaluation of measurement data – An introduction to the “Guide to the expression of uncertainty in measurement” [61],
- JCGM 105. Evaluation of measurement data – Concepts and basic principles,
- JCGM 106. Evaluation of measurement data – The role of measurement uncertainty in conformity assessment [62],
- JCGM 107. Evaluation of measurement data – Applications of the least-squares method

Trenutno je u izradi revidirana verzija GUM dokumenta koja se temelji na Bayesovoj statistici [16], [17], [63]–[66].

## 2.2. Postupak izračuna mjerne nesigurnosti

Najšire zastupljena, GUM metoda, temelji se na eksperimentalnoj analizi i statističkoj obradi podataka dobivenih mjerenjem. U slučaju kada se mjerena veličina ne mjeri izravno već se dobiva posredno iz drugih mjerenih veličina koristi se posredna funkcija – matematički model mjerenja koja opisuje način na koji ulazne mjerene veličine tvore mjerenu (izlaznu) veličinu. Opći oblik te funkcije glasi

$$Y = f(X_1, X_2, \dots, X_N), \quad (2-1)$$

Složena mjerna nesigurnost  $u_c$  računa se prema izrazu [6]

$$u_c(y) = \sqrt{\sum_{i=1}^N \left(\frac{\partial f}{\partial x_i}\right)^2 u^2(x_i) + 2 \sum_{j=1}^{N-1} \sum_{i=j+1}^N \frac{\partial f}{\partial x_i} \frac{\partial f}{\partial x_j} u(x_i, x_j)}. \quad (2-2)$$

U izrazima (2-1) i (2-2) značenje pojedinih veličina je sljedeće:  $Y$  – mjerena veličina,  $y$  – procjena mjerene veličine čiju mjernu nesigurnost računamo,  $X_1, X_2, \dots, X_N$  – ulazne veličine,  $x_1, x_2, \dots, x_N$  – procjena ulaznih veličina,  $N$  – broj mjerenja,  $f$  – funkcija koja opisuje način na koji ulazne veličine tvore izlaznu veličinu,  $u(x_i)$  – standardna mjerna nesigurnost ulazne veličine, a  $u_c(y)$  složena mjerna nesigurnost izlazne veličine.

Desni član u jednadžbi (2-2) predstavlja kovarijantni član koji se ne smije zanemariti ako postoji značajna korelacija među ulaznim veličinama. Član  $u(x_i, x_j)$  predstavlja procijenjenu kovarijancu između veličina  $x_i$  i  $x_j$ . Stupanj međusobne ovisnosti dviju veličina određuje se s pomoću koeficijenta korelacije [67]

$$r(x_i, x_j) = \frac{u(x_i, x_j)}{u(x_i)u(x_j)}, \quad (2-3)$$

gdje vrijedi  $r(x_i, x_j) = r(x_j, x_i)$  te  $-1 \leq r(x_i, x_j) \leq 1$ . Uvrštavanjem (2-3) u kovarijantni član iz jednadžbe (2-2) dobiva se

$$2 \sum_{j=1}^{N-1} \sum_{i=j+1}^N \frac{\partial f}{\partial x_i} \frac{\partial f}{\partial x_j} u(x_i)u(x_j)r(x_i, x_j). \quad (2-4)$$

Koeficijent korelacije  $r(x_i, x_j)$  se iz rezultata mjerenja računa kao

$$r(x_i, x_j) = \frac{\sum_{i=1}^N (x_i - \bar{x}_i)(x_j - \bar{x}_j)}{\sqrt{\sum_{i=1}^N (x_i - \bar{x}_i)^2 (x_j - \bar{x}_j)^2}}. \quad (2-5)$$

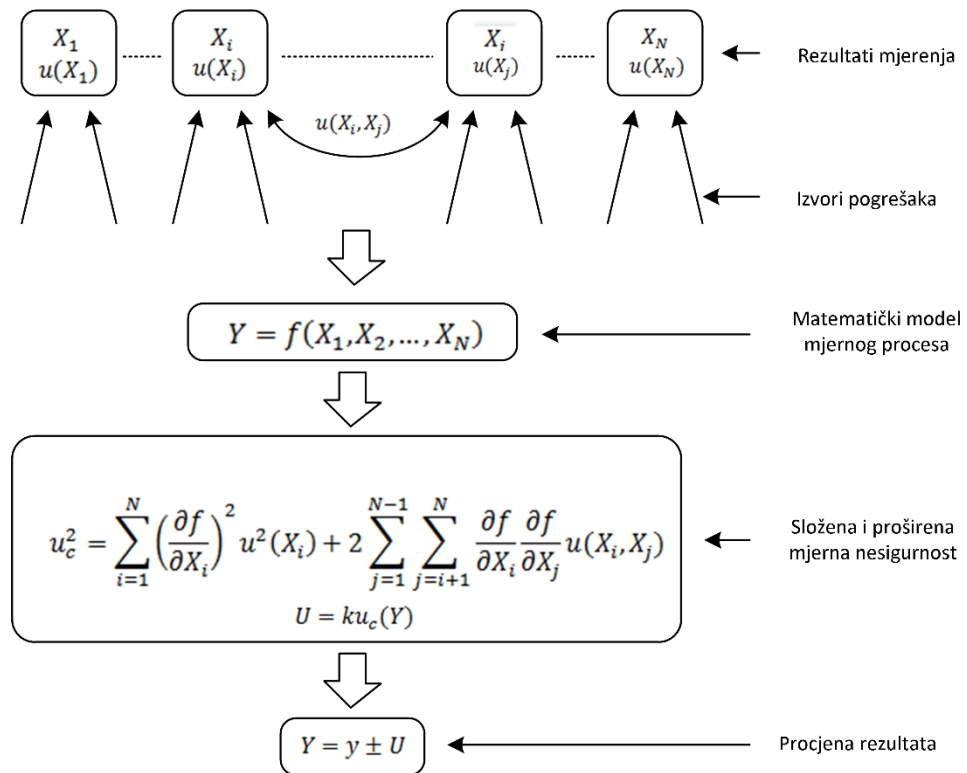
Proširena mjerna nesigurnost  $U$  izračunava se množenjem standardne mjerne nesigurnosti  $u_c(y)$  faktorom proširenja  $k$  prema izrazu

$$U = k u_c(y). \quad (2-6)$$

Faktor proširenja  $k$  odabire se ovisno o željenoj razini pokrivenosti. Najčešće se odabire faktor proširenja  $k=2$  za razinu pokrivenosti 95,4% ili  $k=3$  za razinu pokrivenosti 99,7%.

Rezultat mjerenja se tada izražava u obliku  $Y = y \pm U$  te se tumači da je  $y$  najbolja procjena mjerene veličine  $Y$ , a interval  $y - U$  do  $y + U$  pokriva određeni dio vrijednosti koje se mogu razumno pripisati mjerenoj veličini  $Y$  [6].

Dijagram toka prema kojemu se provodi postupak procjene mjerne nesigurnosti prikazuje slika 2.1.



Slika 2.1. Dijagram toka GUM metode

Uvjeti koji moraju biti zadovoljeni za ispravnu primjenu GUM metode su [10]:

- Funkcija  $f$  mora biti linearna kako bi se zadovoljili uvjeti za primjenu centralnog graničnog teorema koji omogućava aproksimaciju normalne razdiobe veličine  $y$  i u slučaju kada ulazne veličine  $x_1, x_2, \dots, x_N$  nemaju normalnu razdiobu. S ciljem prevladavanja ovog problema Dopuna1 [13] na GUM [6] preporuča uporabu Monte Carlo metode [3] o kojoj će više riječi biti u sljedećim poglavljima,
- Izraz za proširenu mjernu nesigurnost vrijedi u slučaju kada jedna ili više ulaznih veličina imaju konačan broj stupnjeva slobode,
- Ulazne veličine moraju biti međusobno neovisne kada je broj stupnjeva slobode konačan,
- Model mjernog procesa mora biti linearan kako bi se mogli zanemariti viši članovi Taylorovog reda prilikom raspisivanja izraza  $u_c^2(y)$ . U većini slučajeva uvjet linearnosti je i zadovoljen te se viši članovi Taylorovog reda mogu zanemariti. Međutim, postoje i slučajevi kada viši članovi Taylorovog reda nisu zanemarivi u odnosu na drugi član. Za funkciju jedne varijable  $R(x)$ , Taylorov red razvijen oko točke  $x_0$  glasi

$$R(x) \approx R(x_0) + \left. \frac{dR}{dx} \right|_{x_0} (x - x_0) + \frac{1}{2!} \left. \frac{d^2R}{dx^2} \right|_{x_0} (x - x_0)^2 + \dots \quad (2-7)$$

Uvjet koji mora biti zadovoljen kako bi se mogla izvršiti linearna aproksimacija glasi:

$$\left. \frac{dR}{dx} \right|_{x_0} \gg \left. \frac{1}{2!} \frac{d^2R}{dx^2} \right|_{x_0} (x - x_0) + \left. \frac{1}{3!} \frac{d^3R}{dx^3} \right|_{x_0} (x - x_0)^2 + \dots \quad (2-8)$$

U slučajevima kada taj uvjet nije zadovoljen zbog većih iznosa viših redova derivacije ili zbog većeg iznosa člana  $(x-x_0)$  GUM metoda ne zadovoljava.

### 2.3. Nedostaci metode

U znanstvenoj literaturi pojavljuje se niz članaka koji govore o nedostacima [68]–[70] i mogućnostima unaprjeđenja izračuna mjerne nesigurnosti preporučene u GUM-u [6]. Prema članku [71] GUM metoda u većini slučajeva zadovoljava, međutim, u nekim uvjetima postoje određeni nedostaci. Prvi nedostatak je to što u većini slučajeva funkcija gustoće vjerojatnosti izlazne veličine ostaje nepoznata te je u tom slučaju nemoguće računati proširenu mjernu nesigurnost odnosno proširenu razinu pokrivenosti. Iz tog razloga moraju se uzeti u obzir određena pojednostavljenja. U tom smislu često se uzima pretpostavka da su ulazne varijable međusobno neovisne i da kombinacijom njihovih razdioba nastaje Gaussova razdioba izlazne veličine. Iz toga odmah slijedi i da proširena mjerna nesigurnost uz faktor  $k=2$  osigurava 95%-tnu razinu pokrivenosti. Iznimka od ovog pojednostavljenja je kada postoji jedna dominantna ulazna veličina koja je još k tome rezultat ograničenog malog broja mjerenja. U tom slučaju se funkcija gustoće vjerojatnosti izlazne veličine modelira s pomoću pomaknute i prilagođene  $t$ -razdiobe. Efektivni stupnjevi slobode neophodni za opisivanje ovakve razdiobe dobivaju se s pomoću Welch-Satterthwaite-ovog (WS) pristupa [6] ili neke od njegovih modifikacija [13]. Drugi nedostatak GUM metode prema članku [71] je problem izračuna koeficijenata osjetljivosti ulaznih veličina, posebice u slučajevima nelinearnih funkcija. Ovaj nedostatak otklanja se uporabom MC metode o kojoj će više riječi biti u sljedećim poglavljima. Uz pomoć MC metode numerički se aproksimira funkcija gustoće vjerojatnosti izlazne veličine što daje znatno više informacija o izlaznoj veličini nego klasični GUM pristup.

### 3. PROCJENA MJERNE NESIGURNOSTI UPORABOM MONTE CARLO METODE

#### 3.1. Monte Carlo metoda kao alternativa klasičnom GUM pristupu

Monte Carlo (MC) metoda za izračun mjerne nesigurnosti nastala je kao alternativa GUM metodi i primjenjuje se u slučajevima kada je GUM metoda nedostatna, odnosno daje manjkave rezultate. Neki od tih slučajeva su sljedeći:

- a) linearizirani matematički model mjernog procesa nije dovoljno reprezentativan [13], [35], [72]–[74]
- b) funkcija gustoće vjerojatnosti izlazne veličine značajno odstupa od Gaussove razdiobe ili pomaknute i prilagođene  $t$ -razdiobe, na primjer uslijed značajne nesimetrije [13],
- c) matematički model je nelinearan te je izračun koeficijenata osjetljivosti vrlo težak [71],
- d) matematički model je suviše složen te je na taj način otežana primjena klasične GUM metode [35],
- e) postoji dominantna ulazna veličina koja je uz to rezultat malog broja ponovljenih mjerenja [71],
- f) matematički model je funkcija više varijabli [75].

Osnovni dokument za primjenu MC metode je `Evaluation of measurement data - Supplement 1 to the “Guide to the expression of uncertainty in measurement” – propagation of distributions using a Monte Carlo method, JCGM, 2008` [13] i koristi se, kao što je već prije spomenuto, isključivo u skladu s osnovnim dokumentom `Guide to the Expression of Uncertainty in Measurement` [6].

Temeljna razlika između GUM i MC metode je u načinu prijenosa informacije (engl. *Law of Propagation*) s ulaznih veličina na izlaznu. GUM metoda iz mjernih nesigurnosti ulaznih veličina tvori mjernu nesigurnost izlazne veličine (engl. *Law of Propagation of Uncertainties – LPU*) te se na taj način prenosi djelomična informacija. MC metoda putem numeričkog proračuna aproksimira funkciju gustoće razdiobe izlazne veličine na temelju funkcija gustoće razdiobe ulaznih veličina [12], [75] (engl. *Law of Propagation of Distributions – LPD*) te time prenosi potpunu informaciju s ulaznih na izlazne veličine [71]. Iz ovog razloga MC metoda čini valjanu alternativu klasičnom GUM pristupu. Praktična prednost MC metode pred GUM metodom prikazana je na dva stvarna

primjera iz mjeriteljske prakse u članku [7]. Detaljnije o usporedbi GUM i MC metode piše se u članku [76]. Osnovni zaključci usporedbe su:

- MC metoda koristi se za širi raspon problema nego GUM metoda te je stoga općenitija,
- može se koristiti za provjeru rezultata GUM metode,
- temelji se na istim načelima kao i GUM,
- proizlazi iz GUM metode,
- koristi se u sprezi s GUM metodom,
- nema potrebe za izračunom stupnjeva slobode.

Općenito rečeno, MC metoda koristi se u slučajevima kada GUM metoda ne zadovoljava ili kad nije jasno zadovoljava li ili ne, a može se koristiti i radi usporedbe u slučajevima kada GUM zadovoljava. U prvom slučaju MC metoda može se koristiti jer daje bolje rezultate, u drugom slučaju može se koristiti za vrednovanje rezultata dobivenih GUM metodom, a u trećem zbog jednostavnosti.

### 3.2. MC metoda u znanstvenoj literaturi

Razmatrana je zastupljenost članaka koji koriste MC metodu u znanstvenoj literaturi u razdoblju od 2004. do 2014. godine. Za analizu iz razdoblja 2004. do 2010. podaci su preuzeti iz članka *Measurement Uncertainty: Literature Review and Research Trends* [10] u kojemu su autori promatrali 114 članaka iz znanstvenih časopisa *IEEE Transactions on Instrumentation and Measurement*, *Measurement*, *Flow Measurement and Instrumentation* i *Precision Engineering*. Za razdoblje od 2011. do 2014. analiza je proširena za potrebe disertacije na članke objavljene u časopisu *IEEE Transactions on Instrumentation and Measurement* [3], [10]–[12], [21]–[57]. Rezultate istraživanja prikazuje Tablica 3.1.

Tablica 3.1. Zastupljenost MC metode u znanstvenoj literaturi u razdoblju od 2004. do 2014. godine

| <b>Godina</b> | <b>2004</b> | <b>2005</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Broj članaka  | -           | -           | 2           | 2           | 1           | 3           |
| <b>Godina</b> | <b>2010</b> | <b>2011</b> | <b>2012</b> | <b>2013</b> | <b>2014</b> | -           |
| Broj članaka  | -           | 2           | 1           | 2           | 4           | -           |

U razdoblju 2004. do 2014. objavljeno je ukupno 17 znanstvenih članaka koji koriste MC metodu, a od toga najviše u 2014. godini i to njih četiri. Tablica 3.2. prikazuje članke izdane u razdoblju od 2011. do 2014. raspodijeljene prema znanstvenim područjima, poljima i granama.



Tablica 3.2. Primjena MC metode u znanstvenim područjima, poljima i granama

| ZNANSTVENO PODRUČJE | ZNANSTVENO POLJE      | ZNANSTVENA GRANA                 | 2011 | 2012 | 2013 | 2014 | Ukupno |
|---------------------|-----------------------|----------------------------------|------|------|------|------|--------|
| Tehničke znanosti   | Elektrotehnika        | Elektroenergetika                | 1    | 1    | 2    | 2    | 6      |
|                     |                       | Telekomunikacije i informatika   |      |      |      | 1    | 1      |
|                     |                       | Elektronika                      | 1    |      |      |      | 1      |
|                     | Tekstilna tehnologija | Tekstilno-mehaničko inženjerstvo |      |      |      | 1    | 1      |
| <b>Ukupno</b>       |                       |                                  | 2    | 1    | 2    | 4    | 9      |

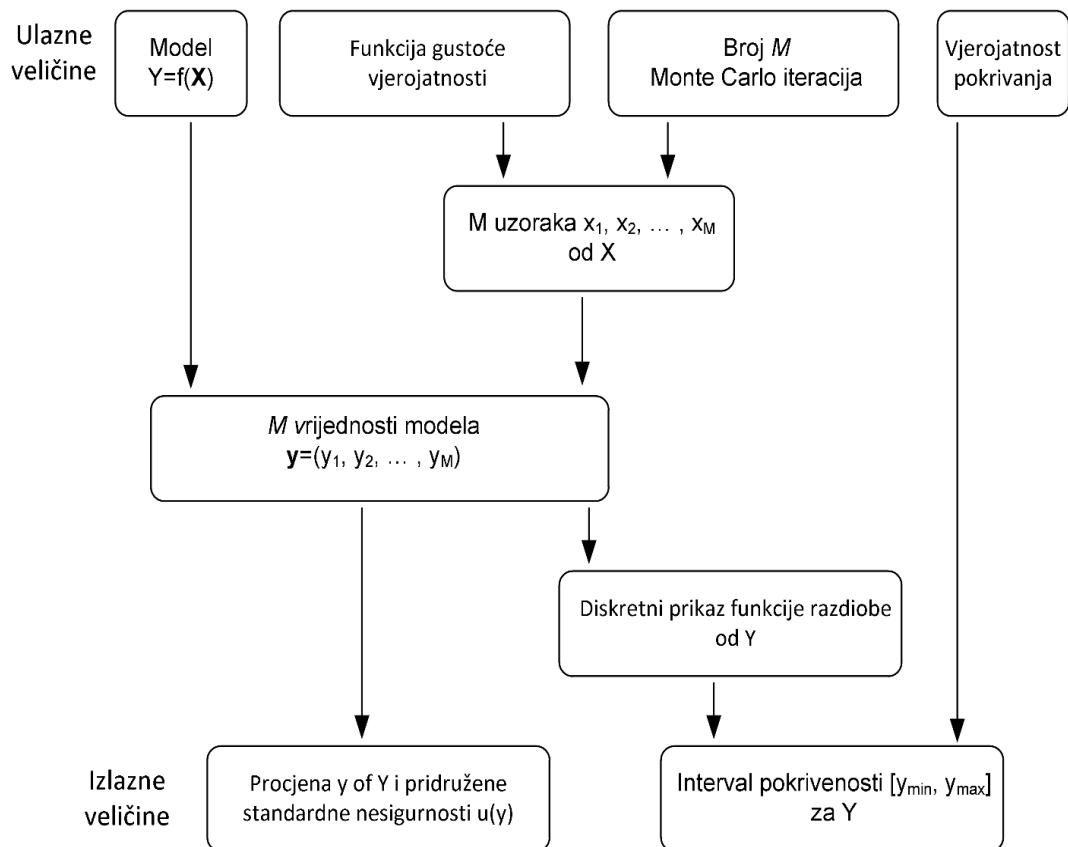
U promatranom razdoblju MC metoda je najviše primijenjena u elektroenergetici (šest članaka), a osim toga objavljen je po jedan članak u telekomunikacijama i informatici, elektronici i tekstilno-mehaničkom inženjerstvu.

### 3.3. Postupak provedbe Monte Carlo metode

Osnovni koraci procjene mjerne nesigurnosti uporabom MC metode sukladno Dopuni 1 [13] su:

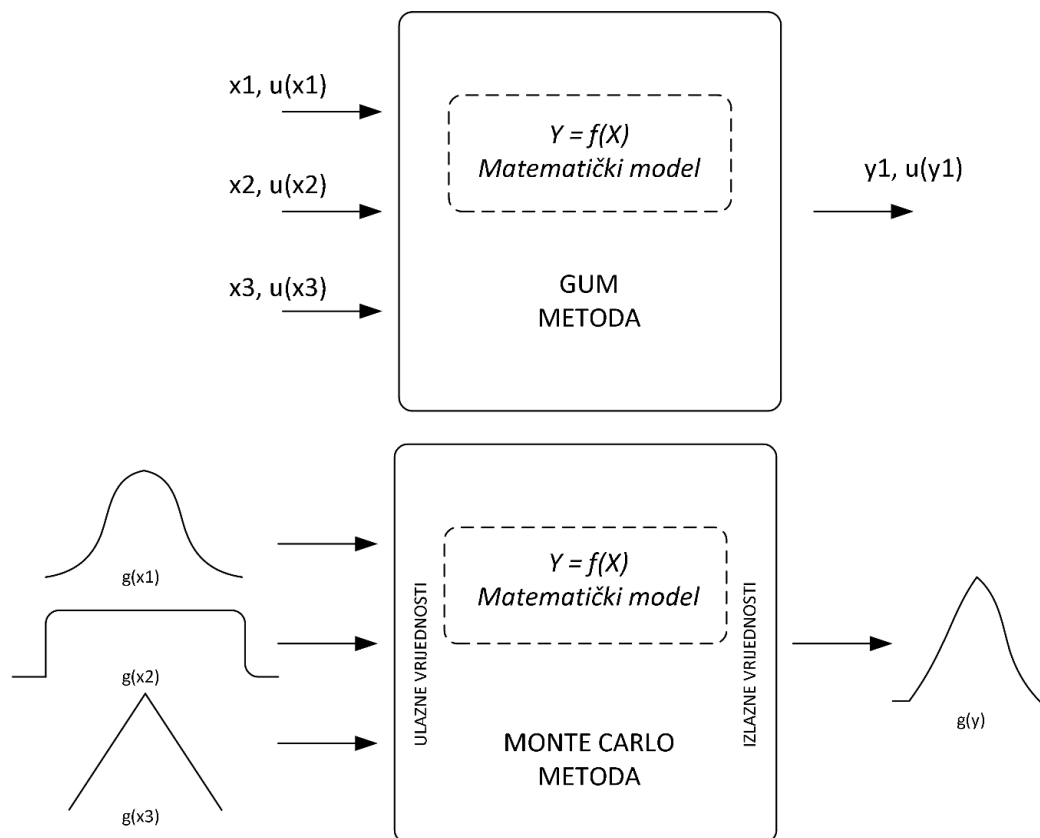
- formulacija: definicija izlazne (mjerene) veličine  $Y$ , određivanje ulaznih veličina  $X_i$ , razvoj modela  $Y = f(X_i)$  po kojemu ulazne veličine tvore izlaznu veličinu, određivanje pojedinih funkcija gustoće vjerojatnosti za sve ulazne veličine,
- proračun: proračun odnosno izrada funkcije gustoće vjerojatnosti izlazne funkcije na osnovu funkcija gustoće vjerojatnosti ulaznih veličina,
- uporaba dobivene funkcije gustoće vjerojatnosti za izračun željenih parametara mjerene veličine (standardne devijacije, intervala pokrivenosti itd.).

Slika 3.1. prikazuje dijagram toka MC metode na primjeru eksplicitno zadane realne funkcije jedne varijable.



Slika 3.1. Dijagram toka MC metode

Slika 3.2. prikazuje tvorbu funkcije gustoće vjerojatnosti mjerene veličine  $Y_i$  iz funkcija gustoće vjerojatnosti ulaznih veličina  $X_i$  na primjeru tri ulazne veličine. Ujedno je slikovito prikazana temeljna razlika u fazi propagacije između GUM i MC metode: MC metoda kao rezultat daje funkciju gustoće vjerojatnosti izlazne veličine čime se prenosi potpuna informacija s ulaznih veličina na izlaznu dok se u GUM metodi prenosi ograničena informacija tj. samo najbolja procjena mjerene veličine i pridružena mjerna nesigurnost što čini jednu od osnovnih prednosti MC metode u odnosu na GUM metodu.



Slika 3.2. Usporedba GUM i MC metode

Uvjeti za primjenu MC metode prema [77] i Dopuni 1 [13] su sljedeći:

- $f$  je neprekinuta funkcija s obzirom na elemente  $X_i$  iz skupa  $X$  u okolini najboljih procjena  $x_i$ ,
- funkcija razdiobe od  $Y$  je kontinuirana i strogo rastuća,
- funkcija gustoće vjerojatnosti od  $Y$  je
  - neprekinuta na intervalu gdje je pozitivna,
  - unimodalna (ima jedan ekstrem),
  - strogo rastuća (ili nula) lijevo od ekstrema i strogo padajuća (ili nula) desno od ekstrema,
- postoje matematičko očekivanje  $E(Y)$  i varijanca  $V(Y)$ ,
- dovoljno velik broj iteracija  $M$ .

Postoje tri načina provedbe MC metode s obzirom na odabir broja iteracija  $M$ :

- unaprijed određen broj iteracija  $M$
- postupno povećanje broja iteracija  $M$  (AMC metoda)
- approximated adaptive (ili histogram) način rada

U okviru disertacije koristit će se MC metoda s unaprijed određenim brojem iteracija  $M$  i adaptivna MC metoda s postupnim povećanjem broja iteracija (AMC metoda) jer su te dvije metode preporučene u Dopuni 1 [13] i prihvaćene u znanstvenoj literaturi.

### 3.4. Adaptivna Monte Carlo metoda

Kritičan trenutak kod provedbe MC metode je odabir dovoljno velikog broja iteracija  $M$ . U literaturi se navodi da najčešće  $M = 10^6$  iteracija zadovoljava za 95%-tnu razinu pokrivenosti [78]. Ideja AMC metode je provoditi MC simulacije postupno povećavajući broj iteracija  $M$  sve dok se rezultati ne stabiliziraju u statističkom smislu. Sukladno Dopuni 1 [13], rezultat je stabiliziran ako je njegovo dvostruko standardno odstupanje manje od dopuštenog brojčanog odstupanja  $\delta$ .

Postupak određivanja dopuštenog brojčanog odstupanja je sljedeći:

- a) Odrediti  $n_{dig}$  broj značajnih znamenaka u brojčanoj vrijednosti  $z$ ,
- b) Broj  $z$  zapisati u obliku  $c \cdot 10^l$  gdje je  $c$  cijeli broj s  $n_{dig}$  desetičnih znamenaka, a  $l$  cijeli broj,
- c) Nakon toga, brojčano odstupanje  $\delta$  jednako je

$$\delta = \frac{1}{2} \cdot 10^l. \quad (3-1)$$

Radi lakšeg razumijevanja promotrimo kratki praktični primjer. Procjena mjerene veličine otpora otpornika nazivnog otpora  $R_n = 70 \Omega$  je  $y = 70,2123 \Omega$  uz standardnu mjernu nesigurnosti  $u(y) = 0,0024 \Omega$  gdje se obje znamenke smatraju značajnima te je stoga  $n_{dig} = 2$ . Standardna nesigurnosti može se izraziti u obliku  $u(y) = 24 \cdot 10^{-4} \Omega$  pa iz toga slijedi da je  $c = 24$ , a  $l = -4$ . Iz toga slijedi  $\delta = \frac{1}{2} \cdot 10^{-4} = 0,00005 \Omega$ .

Općenito rečeno, cilj AMC metode je odrediti najbolju procjenu  $y$  izlazne veličine  $Y$ , standardnu nesigurnost  $u(y)$  i krajnje točke  $y_{low}$  i  $y_{high}$  intervala pokrivenosti uz željenu vjerojatnost pokrivanja  $p$  i uz uvjet da sve četiri navedene veličine postignu statističku stabilnost.

Postupak provedbe AMC metode je sljedeći:

- a) Odabrati  $n_{dig}$  mali pozitivni cijeli broj,
- b) Odabrati početni broj iteracija  $M$ . Preporuka prema Dopuni 1 je da se taj broj odabere kao

$$M = \max(J, 10^4) \quad (3-2)$$

gdje je  $J$  najmanji cijeli broj veći ili jednak  $100/(1 - p)$ ,

- c) Odabrati  $h=1$  koji označuje prvu primjenu MC metode u nizu,
- d) Provesti MC metodu s  $M$  iteracija
- e) Iz dobivenih  $M$  vrijednosti modela  $y_1, \dots, y_M$  izračunati najbolju procjenu  $y^{(h)}$  izlazne veličine  $Y$ , standardnu nesigurnost  $u(y^{(h)})$  i krajnje točke  $y_{low}^{(h)}$  i  $y_{high}^{(h)}$  intervala pokrivenosti uz željenu vjerojatnost pokrivanja  $p$  za  $h$ -ti broj u nizu,
- f) Ako je  $h=1$ , povećati ga za jedan i ponoviti postupak,
- g) Izračunati standardno odstupanje  $s_y$  prosječne vrijednosti procjena  $y^{(1)}, \dots, y^{(h)}$  prema izrazu

$$s_y^2 = \frac{1}{h(h-1)} \sum_{r=1}^h (y^{(r)} - y)^2, \quad (3-3)$$

gdje je

$$y = \frac{1}{h} \sum_{r=1}^h y^{(r)}, \quad (3-4)$$

- h) Izračunati standardno odstupanje za  $u(y)$  i krajnje točke  $y_{low}$  i  $y_{high}$ ,
- i) Izračunati dopušteno odstupanje  $\delta$ ,
- j) Usporediti dvostruka standardna odstupanja  $2s_y$ ,  $2s_{u(y)}$ ,  $2s_{y_{low}}$  i  $2s_{y_{high}}$  s dopuštenim odstupanjem  $\delta$ . Ako neki od dvostrukih standardnih odstupanja prelazi dopušteno odstupanje, povećati  $h$  za jedan i ponoviti postupak.
- k) Kada su sva odstupanja stabilizirana upotrijebiti svih  $h \cdot M$  rezultata za izračun željenih parametara izlazne veličine, obično procjene  $y$ , standardne nesigurnosti  $u(y)$  i intervala pokrivanja za željenu razinu pokrivanja  $p$ .

### 3.5. Validacija rezultata dobivenih u okviru GUM-a

Unatoč predloženim uvjetima za primjenu klasične metode, kao što je prije navedeno, ipak u praksi je moguće da se pojave situacije u kojima neće biti jasno zadovoljava li klasična metoda ili ne. U takvim situacijama, sukladno preporuci u Dopuni 1 [13], potrebno je usporedno s klasičnom metodom provesti i AMC metodu te usporediti, odnosno validirati, rezultate klasične metode. Ovaj postupak provodi se u dva koraka:

- a) primijeni se klasična GUM metoda uz željeni faktor proširenja tj. odrede se granice intervala pokrivenosti za izlaznu veličinu  $y \mp U$ ,

b) primijeni se AMC metoda uz željenu vjerojatnost pokrivanja  $p$  i odrede se krajnje granice intervala pokrivenosti  $y_{low}$  i  $y_{high}$ .

Cilj validacije, odnosno postupka usporedbe rezultata, je odrediti podudaraju li se krajnje granice intervala pouzdanosti jedne i druge metode.

## 4. KONSTANTE PRIJENOSNOG VODA

Prijenosni vod u teoriji se modelira s pomoću otpora  $R$ , induktiviteta  $L$ , kapaciteta  $C$  i odvoda  $G$  koji se obično zadaju u jediničnim iznosima po jedinici duljine prijenosnog voda. Jedinični iznosi parametara prijenosnog voda uobičajeno se označavaju s indeksom 1 te će takav način označavanja biti prihvaćen i u disertaciji. Stoga je jedinični otpor označen s  $R_1$ , jedinični induktivitet s  $L_1$ , jedinični kapacitet s  $C_1$  i jedinični odvod s  $G_1$ . Električne prilike na vodu ovise izravno o navedenim parametrima iz čega slijedi da dobro modelirani parametri omogućuju dobro modeliranje električnih prilika na vodu i obrnuto. U okviru disertacije razmatraju se djelatni gubici na prijenosnim vodovima te će se stoga pozornost usmjeriti na uzdužni i poprečni djelatni otpor voda jer upravo oni uzrokuju djelatne gubitke voda.

Uzdužni otpor voda  $R$  definira se kao opiranje toku električne struje u vodiču. Otpor vodiča ovisi o svojstvima materijala od kojeg je izrađen vodič tj. o njegovoj električnoj otpornosti  $\rho$ , duljini vodiča  $l$  i presjeku  $S$  prema izrazu

$$R = \rho \frac{l}{S}. [\Omega] \quad (4-1)$$

Promjena otpora s temperaturom opisuje se prema jednadžbi [79]

$$R_{\vartheta} = R_0(1 + \alpha(\vartheta - 20^{\circ}\text{C})), \quad (4-2)$$

gdje je:  $\vartheta$  – temperatura okoline

$R_0$  – specifični otpor pri  $20^{\circ}\text{C}$

$R_{\vartheta}$  – specifični otpor pri temperaturi  $\vartheta$

$\alpha$  – temperaturni koeficijent.

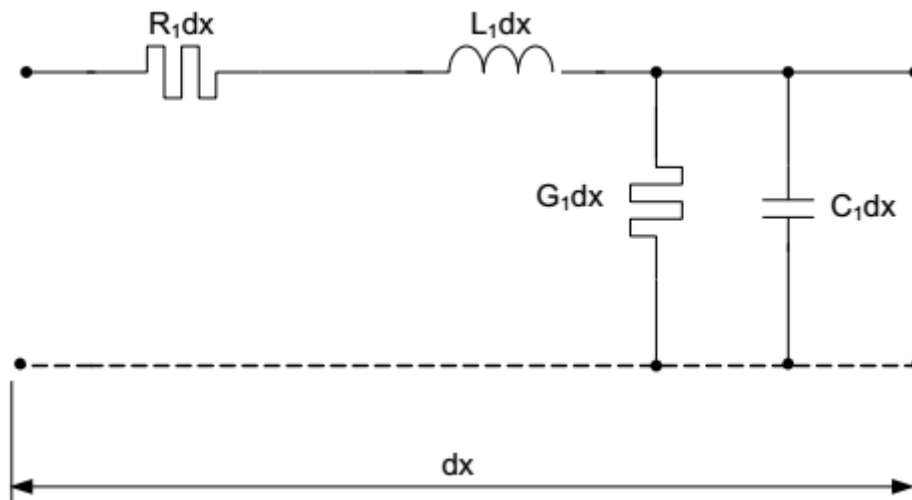
Poprečni otpor prijenosnog voda izražava se kao vodljivost  $G$  koja se definira kao odnos gubitaka po jedinici duljine prema kvadratu napona tj. kao odnos djelatne komponente poprečne struje po jedinici duljine prema naponu [80]

$$G_1 = \frac{\Delta I_r}{V} = \frac{\Delta P}{V^2} \cdot \left[ \frac{S}{km} \right] \quad (4-3)$$

Sastoji se od dvije sastavnice, a to su: strujno vođenje izolacije  $G_0$  i gubici u izolaciji zbog izmjenične polarizacije  $G_d$

$$G_1 = G_0 + G_d. \quad (4-4)$$

U stvarnosti su parametri raspodijeljeni cijelom duljinom voda i može se promatrati infinitezimalni dio voda duljine  $dx$  prema nadomjesnoj shemi prikazanoj na slici 4.1. Integracijom po cijeloj duljini voda dobili bi se stvarni iznosi parametara voda.



Slika 4.1. Infinitezimalni dio duljine prijenosnog voda

S obzirom na to da u praksi nije moguće odrediti stvarne parametre za svaki infinitezimalni dio prijenosnog voda, za proračun se koriste nadomjesne sheme s koncentriranim parametrima.

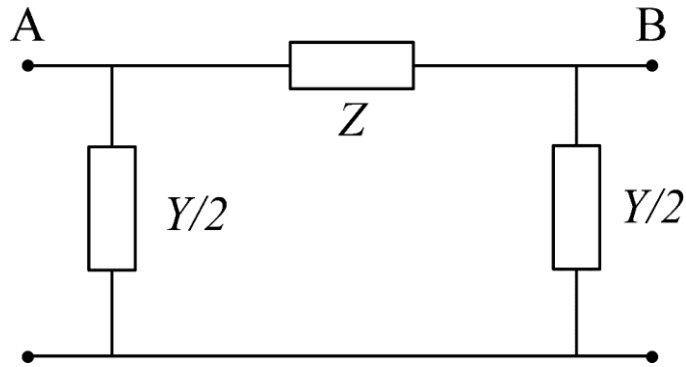
#### 4.1. Nadomjesne sheme prijenosnog voda

Za kratke vodove (duljine  $l < 200$  km) najčešće se koriste se približne nadomjesne sheme s koncentriranim parametrima. S obzirom na to da se u okviru disertacije promatraju djelatni gubici voda i nadomjesne sheme su prikazane s djelatnim otporima koji uzrokuju djelatne gubitke.

##### *Nadomjesna II shema*

Nadomjesna  $\pi$  shema prikazana je na slici 4.2.





Slika 4.2. Nadomjesna  $\pi$  shema prijenosnog voda

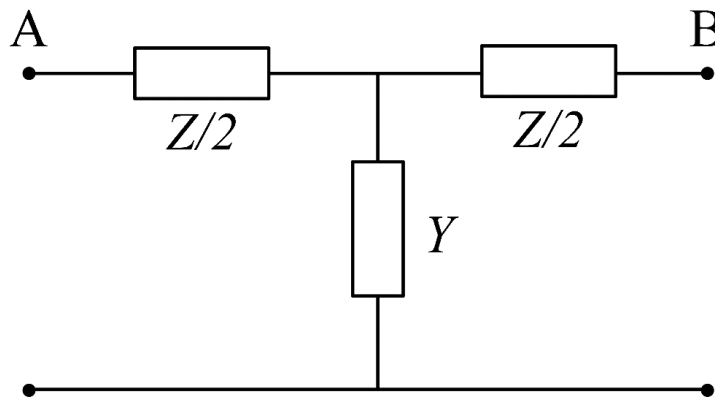
Iznosi elemenata su

$$Z_{\pi} = Z = Z_1 \cdot l, \quad (4-5)$$

$$\frac{Y_{\pi}}{2} = \frac{Y}{2} = \frac{Y_1}{2} \cdot l. \quad (4-6)$$

*Nadomjesna T shema*

Nadomjesna T shema prikazana je na slici 4.3.



Slika 4.3. Nadomjesna T shema prijenosnog voda

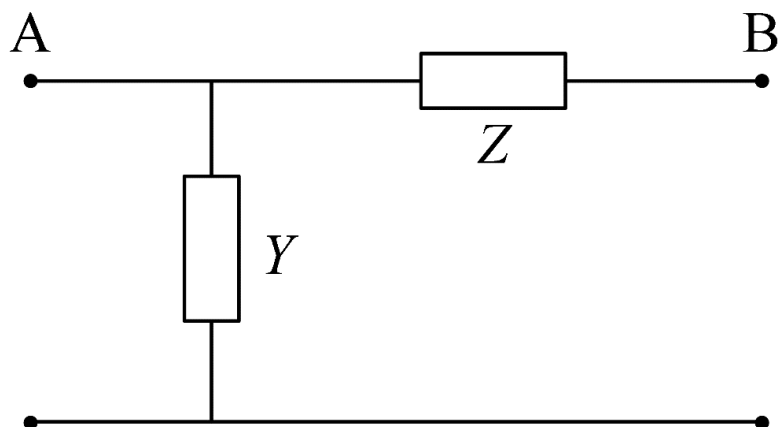
Iznosi elemenata su

$$Y_T = Y = Y_1 \cdot l, \quad (4-7)$$

$$\frac{Z_T}{2} = \frac{Z}{2} = \frac{Z_1}{2} \cdot l. \quad (4-8)$$

*Nadomjesna  $\Gamma$  shema*

Nadomjesna  $\Gamma$  shema prikazana je na slici 4.4.



Slika 4.4. Nadomjesna  $\Gamma$  shema prijenosnog voda

Iznosi elemenata su

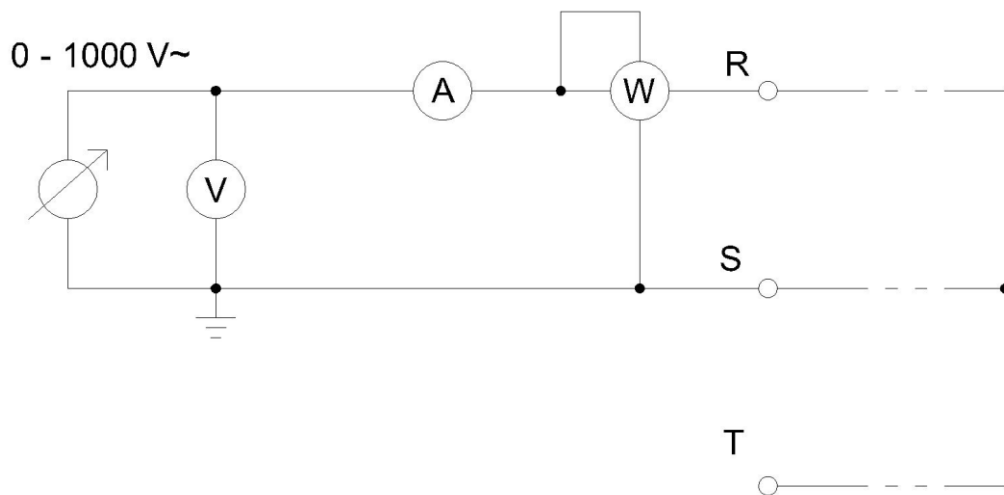
$$Z_{\Gamma} = Z \cdot l, \quad (4-9)$$

$$Y_{\Gamma} = Y \cdot l. \quad (4-10)$$

Proizvođači suvremenih brojila električne energije [81], [82] za mjerenje gubitaka prijenosa s pomoću ugrađene funkcije u brojlama koriste nadomjesnu  $\Gamma$  shemu te će se stoga u disertaciji ova shema koristiti za izračune gubitaka prijenosa. Druge prikazane nadomjesne sheme također imaju potencijal uporabe za istu namjenu, ali opravdanost toga treba istražiti u budućim istraživanjima.

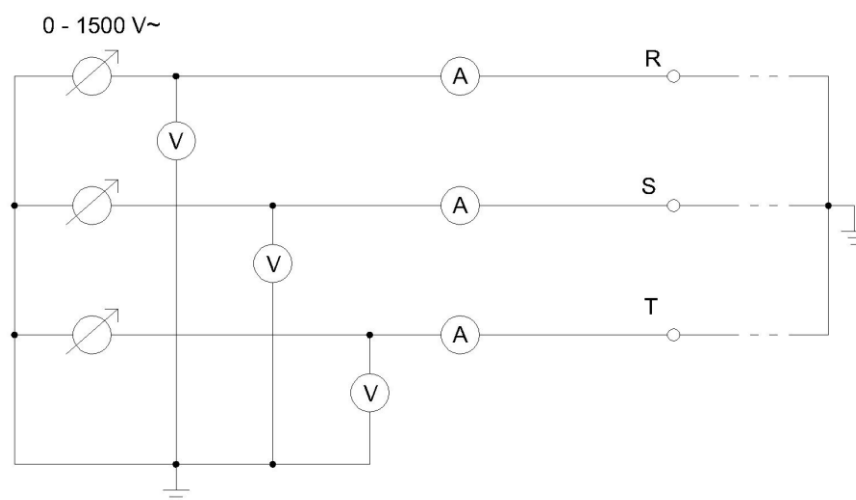
## 4.2. Mjerenje otpora prijenosnog voda i izračun pripadajuće mjerne nesigurnosti

Mjerenje otpora prijenosnog voda u praksi se radi s pomoću više različitih pristupa, ali se svi u konačnici svode na tzv. U-I metodu. Načelo ove metode sastoji se u tome da se iz izvora električne energije utiskuje struja kroz vod te se mjeri pad napona te pripadajući fazni kut iz čega se računaju impedancije. Najčešće korištena je jednofazna metoda gdje se mjere impedancije svake faze posebno, a nakon toga se računa srednja impedancija kao aritmetička sredina te se dobiva impedancija mjerodavna za daljnji proračun.



Slika 4.5. Načelna shema jednofaznog mjerenja otpora prijenosnog voda

U zadnje vrijeme pojavljuju se i uređaji za trofazno mjerenje parametara voda koji mjere impedancije svih triju faza istodobno.



Slika 4.6. Načelna shema trofaznog mjerenja otpora prijenosnog voda

Prednost ove metode je što poznavanje zasebnih impedancija svih faza omogućava dodatan uvid u stanje vodiča. Naime, oštećen vodič jedne faze imat će veći uzdužni otpor nego preostale dvije faze što će se očitovati kroz nesimetriju prilikom mjerenja parametara voda. Matematički model mjerenja otpora voda U-I metodom glasi

$$R = \frac{U}{I} \cos\varphi. \quad (4-11)$$

Doprinosi mjernoj nesigurnosti otpora  $R$  proizlaze iz mjernih nesigurnosti napona  $U$ , struje  $I$  i kuta  $\varphi$ . Nadalje, svaka od navedenih veličina ima svoju slučajnu i sustavnu sastavnicu. Slučajna komponenta je promjenljiva i nemoguće ju je otkloniti stoga će se dovoljnim brojem ponavljanja mjerenja utvrditi njezine karakteristike. Sustavna sastavnica proizlazi iz karakteristika mjerne opreme tj. iz umjernice mjernog uređaja. Sustavnu sastavnicu je potrebno uzeti u obzir prilikom izračuna ukupne mjerne nesigurnosti otpora  $R$ .

#### 4.2.1. Proračun mjerne nesigurnosti s pomoću klasične GUM metode

Sukladno definiciji klasične mjerne nesigurnosti [6] za sve ulazne veličine pretpostavlja se Gaussova razdioba ulaznih veličina, a posljedično i izlazne veličine. S obzirom na to da se otpor voda računa iz izmjerene struje i napona, za proračun mjerne nesigurnosti koristit će se složena mjerna nesigurnost prema izrazu (2-2).

Prije izračuna složene mjerne nesigurnosti otpora  $R$  potrebno je utvrditi stupanj korelacije između ulaznih veličina napona  $U$ , struje  $I$  i kuta  $\varphi$  prema jednadžbi (2-5). Korelacija između napona  $U$  i struje  $I$  računa se kao

$$r(U, I) = \frac{\sum_{i=1}^N (U_i - \bar{U})(I_i - \bar{I})}{\sqrt{\sum_{i=1}^N (U_i - \bar{U})^2 (I_i - \bar{I})^2}}. \quad (4-12)$$

Korelacija između struje  $I$  i kuta  $\varphi$  računa se kao

$$r(I, \varphi) = \frac{\sum_{i=1}^N (I_i - \bar{I})(\varphi_i - \bar{\varphi})}{\sqrt{\sum_{i=1}^N (I_i - \bar{I})^2 (\varphi_i - \bar{\varphi})^2}}. \quad (4-13)$$

Korelacija između napona  $U$  i kuta  $\varphi$  računa se kao

$$r(U, \varphi) = \frac{\sum_{i=1}^N (U_i - \bar{U})(\varphi_i - \bar{\varphi})}{\sqrt{\sum_{i=1}^N (U_i - \bar{U})^2 (\varphi_i - \bar{\varphi})^2}}. \quad (4-14)$$

Nakon toga izraz (2-2), uzimajući u obzir i (2-4) prelazi u

$$u_c(R) = \sigma_{GUM} = \sqrt{\sum_{i=1}^N \left(\frac{\partial R}{\partial x_i}\right)^2 u^2(x_i) + 2 \sum_{j=1}^{N-1} \sum_{i=j+1}^N \frac{\partial R}{\partial x_i} \frac{\partial R}{\partial x_j} u(x_i) u(x_j) r(x_i, x_j)}, \quad (4-15)$$

iz čega slijedi

$$\begin{aligned}
\sigma_{GUM}^2 = u_a^2(R) &= \left[ \frac{\partial R}{\partial U} \cdot u_a(U) \right]^2 + \left[ \frac{\partial R}{\partial I} \cdot u_a(I) \right]^2 + \left[ \frac{\partial R}{\partial \varphi} \cdot u_a(\varphi) \right]^2 + \\
&+ 2 \sum_{j=1}^{N-1} \sum_{i=j+1}^N \frac{\partial R}{\partial U} \frac{\partial R}{\partial I} u(U) u(I) r(U, I) + \\
&+ 2 \sum_{j=1}^{N-1} \sum_{i=j+1}^N \frac{\partial R}{\partial I} \frac{\partial R}{\partial \varphi} u(I) u(\varphi) r(U, \varphi) + \\
&+ 2 \sum_{j=1}^{N-1} \sum_{i=j+1}^N \frac{\partial R}{\partial U} \frac{\partial R}{\partial \varphi} u(U) u(\varphi) r(U, \varphi).
\end{aligned} \tag{4-16}$$

$$\begin{aligned}
\sigma_{GUM}^2 = u_a^2(R) &= \\
&= \left[ \frac{\cos \varphi}{I} \cdot u_a(U) \right]^2 + \left[ -\frac{U \cos \varphi}{I^2} \cdot u_a(I) \right]^2 + \left[ -\frac{U \sin \varphi}{I} \cdot u_a(\varphi) \right]^2 \\
&\quad - 2 \frac{U \cos^2 \varphi}{I^3} u_a(U) u_a(I) r(U, I) + \\
&\quad + 2 \frac{U^2 \cos(\varphi) \sin(\varphi)}{I^3} u_a(I) u_a(\varphi) r(U, \varphi) - \\
&\quad - 2 \frac{U \cos(\varphi) \sin(\varphi)}{I^2} u_a(U) u_a(\varphi) r(U, \varphi).
\end{aligned} \tag{4-17}$$

Izraz (4-17) predstavlja složenu mjernu nesigurnost otpora prijenosnog voda uzimajući u obzir i korelaciju ulaznih veličina prema GUM metodi odnosno prema uputama u dokumentu [6]. Više detalja o opisanom postupku može se naći u [5]. U nastavku će biti opisan proračun s pomoću AMC metode odnosno prema uputama u Dopuni 1 [13].

#### 4.2.2. Proračun mjerne nesigurnosti s pomoću AMC metode

AMC metoda provodi se u nekoliko koraka sukladno opisu prikazanom u poglavlju 3. U prvom koraku nakon provedenih mjerenja potrebno je utvrditi razdiobe struje, napona i faznog kuta koji će poslužiti kao ulazne veličine. Za tu svrhu koristit će se Matlab Distribution Fitting Tool (MDFT) [83] koji omogućuje aproksimaciju niza teorijskih razdioba na učitane podatke. Za ispitivanje koja od razdioba najbolje aproksimira podatke koristi se *maximum likelihood estimation (MLE)* postupak odnosno izračunavaju se *log-likelihood* vrijednosti [84], [85]. Razdioba s većom vrijednosti bolje aproksimira podatke. U drugom koraku, nakon što su određene razdiobe ulaznih

veličina, izvršava se AMC procedura. Izlazna veličina je otpor prijenosnog voda u obliku  $M$  rezultata na temelju kojih se aproksimira razdioba koja će poslužiti kao ulazna veličina za proračun gubitaka prijenosnog voda o čemu će biti riječi u narednim poglavljima.

## 5. GUBICI PRIJENOSNOG VODA

U aktualnom tržišnom okruženju operatori prijenosnih sustava (OPS) na području Europe udruženi su u veću organizacijsku cjelinu koja se naziva *European Network of Transmission System Operators* (ENTSO-E) [86]. Trenutno ova organizacija uključuje 42 OPS-a iz 35 zemalja i ovlaštena je od institucija Europske Unije (EU) za liberalizaciju tržišta električne energije u sklopu Trećeg energetske paketa (*Third Legislative Package*). Temeljna misija joj je uspostava internog tržišta električne energije te očuvanje integriteta prijenosne mreže koja je sposobna odgovoriti na sve zahtjeve za razvojem uz očuvanje sigurnosti opskrbe električnom energijom.

Sukladno direktivi EU DIRECTIVE 2003/54/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL [87] liberalizacija tržišta električne energije podrazumijeva da niti jedno poduzeće ne smije imati monopol na razini prodaje električne energije. Drugim riječima, potiče se konkurencija u ovom području. S druge strane, prijenosna i distribucijska mreža prihvaćene su kao javno dobro i pripadaju u tzv. regulirane djelatnosti gdje ovlašteno regulatorno tijelo nadzire primjenu odgovarajućih zakonskih odredbi te određuje tarife za pristup mreži. Pri tome se u obzir moraju uzeti realni troškovi OPS-ova koji moraju osigurati nesmetan i nediskriminirajući pristup mreži svim zainteresiranim sudionicima. Sve cijene u tržišnom okruženju moraju biti javne i transparentne tj. dostupne svim sudionicima na tržištu.

Gubici u prijenosnoj mreži mogu se podijeliti na gubitke prema mjestu nastanka (gubici na elementima mreže) i na gubitke ovisno o opterećenju (ovisni i neovisni o opterećenju) [88]. Druga moguća podjela gubitaka je na tehničke (fizikalne) i netehničke gubitke (gubici koji nastaju kao posljedica neovlaštene ili neizmjerene potrošnje električne energije, pogrešaka mjerenja i obračuna i sl.) [89]. Iznos gubitaka određen je tehničkim stanjem sustava što podrazumijeva broj i parametre vodova i transformatora, konfiguraciju mreže, raspored izvora itd., te režimom rada sustava što podrazumijeva uklopno stanje elemenata mreže, raspodjelu tokova snage, tranzite energije itd. Mjere za smanjenje gubitaka se prema [90] mogu podijeliti na konstruktivne i pogonske. Konstruktivne mjere za smanjenje gubitaka podrazumijevaju investicije u sustav kao npr. izgradnja vodova više naponske razine, izgradnja uređaja za kompenzaciju jalove snage, kontrola spojeva (termovizija itd.). Pogonske mjere za smanjenje gubitaka ne zahtijevaju značajne

investicije nego pogon sustava u što povoljnijim uvjetima što podrazumijeva ispravno održavanje elemenata mreže, pogon mreže s najpovoljnijom konfiguracijom, regulaciju napona i tokova jalove snage itd.

OPS koji djeluje u okviru ENTSO-E zajednice ima određena prava i obveze sukladno odredbama institucija EU. Između ostalog, od velike važnosti je dokument REGULATION (EC) No 714/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003 [91] koji uređuje naknadu OPS-a za tranzite električne energije i pripadajuće gubitke. Činjenica je da je naknada mala u odnosu na velike količine energije koje se prenesu preko prijenosnih vodova pa stoga pogreške mjerenja mogu izazvati štetu sumjerljivu naknadi koju OPS dobiva. Iz tog razloga je očigledno da je vrhunska kvaliteta mjerenja na obračunskim mjernim mjestima međunarodne razmjene od interesa svim sudionicima. Gubici električne energije u prijenosnom sustavu iznose oko 2.5% prema [92] ili nešto više 3-5% prema [93]–[95]. Loša kvaliteta mjerenja praćena velikim pogreškama može rezultirati značajno izmijenjenim rezultatima mjerenja gubitaka što će učiniti značajne financijske posljedice za sudionike razmjene.

## 5.1. Mjerenje gubitaka uporabom ugrađene funkcije u brojilu električne energije

Proizvođači suvremenih brojila električne energije [81], [82] prepoznali su problem određivanja gubitaka na prijenosnim vodovima. Primjerice proizvođač Landes&Gyr ugradio je funkciju mjerenja gubitaka u novijim brojilima [81]. Gubici se mjere, tj. računaju, prema nadomjesnoj "Γ" shemi prikazanoj na slici 4.4. i prema jednadžbi

$$E_G = \int_{t=0}^{t=t} \left( \sum_{i=1}^3 I_i^2 R + \sum_{i=1}^3 \frac{U_i^2}{R_{SH}} \right) dt, \quad (5-1)$$

gdje je:  $E_G$  – energija gubitaka električne energije

$I_i$  – efektivna vrijednost struje  $i$ -te faze izmjerena u mjernoj točki

$U_i$  – efektivna vrijednost napona  $i$ -te faze izmjerena u mjernoj točki

$R$  – otpor vodiča prijenosnog voda

$R_{SH}$  – poprečni otpor vodiča prijenosnog voda (tzv. *shunt* otpor)

$t$  – vremenski interval u kojem se mjere gubici

Jednadžba (5-1) sastoji se od dvije sastavnice. Prva sastavnica su uzdužni tzv.  $I^2R$  gubici koji ovise o struji  $I$  odnosno opterećenju voda i otporu vodiča  $R$ . Otpor vodiča je nadalje ovisan o materijalu od kojeg je vodič izrađen i o duljini voda. Obično se mjeri primjenom odgovarajuće mjerne metode kao što je opisano u prethodnom poglavlju. Druga sastavnica su poprečni gubici koji nastaju zbog nesavršenosti izolacije prema zemlji, a ovise o naponu na vodu  $U$  i poprečnom otporu  $R_{SH}$ , a neovisan je o opterećenju voda. Poprečni otpor  $R_{SH}$  nije moguće izmjeriti pa se koriste iskustvene vrijednosti. Npr. za prijenosni 400 kV vod koristi se vrijednost 1000 M $\Omega$ /km [92].

Iz konstitucije jednadžbe (5-1) proizlaze i određeni nedostaci. Struja prijenosnog voda  $I$  u prvoj sastavnici gubitaka nije jednaka na početku i na kraju voda, prvenstveno zbog odvoda tj. radne komponente poprečnih gubitaka. Otpor vodiča  $R$  uzima se kao konstanta i u brojilo električne energije obično se upisuje vrijednost otpora pri 20°C. Međutim, prilikom temperaturnih oscilacija otpor se mijenja što znači da se gubici većinu vremena mjere s netočnom vrijednosti otpora.

Napon prijenosnog voda  $U$  nije jednak na oba kraja voda zbog pada napona na impedanciji voda. Poprečni otpor  $R_{SH}$  također nije konstantan nego značajno ovisi o atmosferskim prilikama. Praktično iskustvo [92] pokazuje da pretpostavka vrijednosti od 1000 M $\Omega$ /km zadovoljava pri suhim atmosferskim prilikama kada gubici prijenosnog voda iznose manje od 1%, međutim, pri velikoj vlažnosti poprečni gubici značajnu rastu pa tako i ukupni gubici voda do red veličine nekoliko postotaka i tada je očito da ta vrijednost ne zadovoljava.

Iz navedenih nedostataka očigledno je da mjerenje gubitaka uporabom ugrađene funkcije u brojlama električne energije ima niz promjenljivih sastavnica koje je u svakodnevnoj praksi nemoguće implementirati u obračun izmjerenih vrijednosti energije gubitaka. Stoga su, na ovaj način izmjerene vrijednosti, podložne značajnim nesigurnostima koje su posljedica matematičkog modela za izračun energije gubitaka. Pretpostavka je da će nedostaci ove metode biti otklonjeni uporabom druge metode u kojoj će se prijenosni gubici računati kao razlika izmjerenih energija na krajevima voda. Navedena pretpostavka provjerit će se na praktičnom primjeru u sljedećim poglavljima.

Mjerna nesigurnost gubitaka proizlazi iz matematičkog modela za proračun gubitaka prema jednadžbi (5-1). Mjerna nesigurnost struje  $I$  i napona  $U$  rezultat je mjerenja s pomoću strujnih i naponskih mjernih transformatora. Nakon ispravka sustavnih pogrešaka očitanih iz umjernih mjernih transformatora, preostaje nesigurnost umjeravanja koja će se iskazati kao preostala mjerna nesigurnost s pomoću pravokutne razdiobe kao što je preporučeno u [96]. Mjerna nesigurnost otpora  $R$  rezultat je proračuna mjerne nesigurnosti iz poglavlja 0.



### 5.1.1. Proračun mjerne nesigurnosti gubitaka s pomoću klasične GUM metode

Sukladno definiciji klasične mjerne nesigurnosti [6] za sve ulazne veličine pretpostavlja se Gaussova razdioba ulaznih veličina, a posljedično i izlazne veličine. S obzirom na to da se gubici voda računaju iz izmjerene struje, napona i otpora, za proračun mjerne nesigurnosti koristit će se složena mjerna nesigurnost prema izrazu (2-2). Izraz (5-1) za sve tri faze i vremenski period  $t$  prelazi u oblik

$$E_G = \left( I^2 R + \frac{U^2}{R_{SH}} \right) t. \quad (5-2)$$

Složena mjerna nesigurnost računa se prema izrazu

$$u_c(E_G) = \sigma_{E_G-GUM} = \sqrt{\sum_{i=1}^N \left( \frac{\partial E_G}{\partial x_i} \right)^2 u^2(x_i) + 2 \sum_{j=1}^{N-1} \sum_{i=j+1}^N \frac{\partial E_G}{\partial x_i} \frac{\partial E_G}{\partial x_j} u(x_i) u(x_j) r(x_i, x_j)}, \quad (5-3)$$

Ulazne veličine za izračun gubitaka prijenosnog voda, struja  $I$ , napon  $U$  i otpor  $R$  rezultat su mjerenja međusobno neovisnih mjernih sustava te se stoga kovarijantni član u jednadžbi (5-3) zanemaruje i jednadžba prelazi u oblik

$$u_c(E_G) = \sigma_{E_G-GUM} = \sqrt{\sum_{i=1}^N \left( \frac{\partial E_G}{\partial x_i} \right)^2 u^2(x_i)}. \quad (5-4)$$

Raspisivanjem se dobiva apsolutna mjerna nesigurnost gubitaka po fazi prijenosnog voda

$$u_c(E_G)^2 = \sigma_{E_G-GUM}^2 = u_a^2(E_G) = \left[ \frac{\partial E_G}{\partial U} \cdot u_a(U) \right]^2 + \left[ \frac{\partial E_G}{\partial I} \cdot u_a(I) \right]^2 + \left[ \frac{\partial E_G}{\partial R} \cdot u_a(R) \right]^2, \quad (5-5)$$

$$= \left\{ \left[ \frac{2U}{R_{SH}} \cdot u_a(U) \right]^2 + [2IR \cdot u_a(I)]^2 + [I^2 \cdot u_a(R)]^2 \right\} t. \quad (5-6)$$

### 5.1.2. Proračun mjerne nesigurnosti gubitaka s pomoću MC i AMC metode

Za razliku od klasične metode za proračun mjerne nesigurnosti, kod MC i AMC metode neće se pretpostavljati Gaussova razdioba ulaznih veličina nego će se odrediti razdioba rezultata mjerenja za sve sastavnice nesigurnosti. Za struju i napon uzet će se pravokutne razdiobe s parametrima iz

umjernica, a za otpor  $R$  kao ulazna veličina koristit će se izlazna veličina iz proračuna mjerne nesigurnosti otpora uporabom MC odnosno AMC metode. Više detalja o navedenom postupku može se naći u [97].

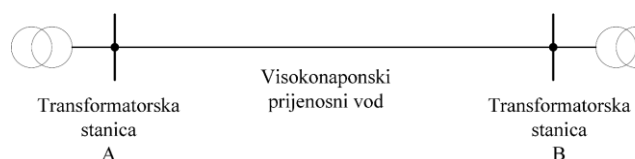
### 5.1.3. Procjena funkcije gustoće vjerojatnosti gubitaka

Rezultat MC i AMC metoda su razdiobe izlaznih veličina koje sadrže značajno bogatiju informaciju o izlaznoj veličini u usporedbi s GUM metodom. Međutim, da bi se iz razdiobe mogle iščitati informacije odnosno željeni parametri, najčešće srednja vrijednost i standardna devijacija, potrebno je poznavati odgovarajuću razdiobu. Dakle, nakon provedene MC ili AMC metode potrebno je provesti tzv. *fitanje* razdiobe, tj. procjenu (aproksimaciju) parametara razdiobe.

Problem aproksimacije razdiobe na određene podatke svodi se na određivanje nepoznatih parametara razdiobe. Postupak će se provesti s pomoću programskih paketa R 3.1.1. i Mathematica 9 uporabom metode nelinearnih najmanjih kvadrata (engl. *non-linear least square (NLS) method*) i Levenberg-Marquardt algoritma [98]–[100]. Programski paket R 3.1.1. sadrži 21 parametarsku razdiobu među kojima traži razdiobu koja najbolje odgovara empirijskoj razdiobi tj. razdiobu koja ima najmanju preostalu sumu kvadrata odstupanja (engl. *residual sum of squares*). Više detalja bit će prikazano niže u poglavljima koja sadrže praktične rezultate. Više detalja o navedenom postupku može se naći u [101].

## 6. RASPODJELA RAZMIJENJENE ENERGIJE I PRIPADAJUĆIH GUBITAKA IZMEĐU OPERATORA PRIJENOSNIH SUSTAVA

Operatori prijenosnih sustava imaju zajednički interes za propisivanjem metode za ispravak razmijenjene energije i pripadajućih gubitaka zbog velike količine prenesene energije i posljedično značajnog financijskog efekta. Kod međudržavne razmjene električna energije se mjeri obostrano tj. na oba kraja prijenosnog voda (slika 6.1).



Slika 6.1 Načelna shema smještaja obračunskih mjernih mjesta kod međudržavne razmjene električne energije

Pravilan odabir odgovarajuće metode za raspodjelu prenesene energije i pripadajućih gubitaka važna je tema prilikom bilateralnih pregovora između OPS-ova. Pregovori moraju biti ravnopravni, a detalji moraju biti utvrđeni međunarodnim sporazumom. Odabrana metoda prije svega mora biti pravedna kako niti jedan operator ne bi trpio štetu. Postojeća zakonska regulativa bi na razini ENTSO-E grupe trebala urediti detalje navedene problematike kako se odluka ne bi donosila kao rezultat pojedinačnih dogovora, a niti jedan sudionik ne bi bio izložen npr. političkim pritiscima. Sloboda koju zakonska regulativa prepušta pojedinačnim dogovorima OPS-ova rezultira s nekoliko različitih pristupa koji se pojavljuju u praksi. Jedna od mogućnosti je da se gubici uopće ne obračunavaju jer su obračunske mjerne točke (MT) blizu fizičke granice OPS-ova, a energija mjerodavna za obračun je jednaka izmjerenoj energiji na brojilima električne energije. Ako se gubici ipak uzimaju u obzir, jedna od mogućnosti je uporaba ugrađene funkcije za mjerenje gubitaka u suvremenim brojilima električne energije opisane u prethodnom potpoglavlju. Druga mogućnost je, uz pretpostavku obostranog mjerenja, da se gubici računaju kao razlika izmjerenih energija na suprotnim stranama prijenosnog voda.

Zajedničko za sve metode je da ne uzimaju u obzir mjernu nesigurnost izmjerene energije i gubitaka prijenosa. Posljedice neuvažavanja mjerne nesigurnosti su:

- mjerni rezultat odnosno energija mjerodavna za obračun sadrži veliku količinu nesigurnosti što znači da je i financijski iskaz energije nesiguran,
- prijenosni gubici izračunati iz izmjerene energije s velikom količinom nesigurnosti sadrže također veliku količinu nesigurnosti koja će se obračunati OPS-ovima.

Mjerna nesigurnost se, kao što je spomenuto u uvodnom dijelu disertacije, može podijeliti na slučajne i sustavne sastavnice što u ovom trenutku postaje iznimno važno. Naime, sustavne sastavnice koje su posljedica poznatih izvora mjerne nesigurnosti, npr. mjerna metoda i mjerna oprema, mogu su kvantizirati, a mjerni rezultat se može ispraviti za isti iznos [67], [92]. Na taj način, mjerni rezultat se ispravlja, a mjerna nesigurnost rezultata se smanjuje. Ako uzmemo u obzir velike količine energije koje se razmjenjuju na prijenosnoj razini, svaki ispravak mjernog rezultata znači „pošteniju“ raspodjelu izmjerene energije i pripadajućih gubitaka. Osim toga, mjerna nesigurnost energije koja posljedično znači i financijsku nesigurnost se smanjuje. Nakon što su sustavne sastavnice otklonjene tj. ispravljene i dalje preostaje određena količina nesigurnosti koja je posljedica određivanja ispravaka i slučajnih pogrešaka koje je zbog njihove prirode nemoguće odrediti niti ispraviti. Iz navedenog je očigledno da je u iznimnom interesu svih sudionika razmjene električne energije da se odrede zajednička pravila i urede međusobni odnosi kako nitko ne bi trpio financijsku štetu.

## **6.1. Zakonska regulativa vezana ispravak razmijenjene energije**

Temeljni dokument koji uređuje odnose prilikom prekogranične razmjene električne energije u zemljama Europske Unije je „REGULATION (EC) No 714/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003“ [91]:

### *Article 1*

#### *Subject-matter and scope*

*This Regulation aims at:*

*„(a) setting fair rules for cross-border exchanges in electricity, thus enhancing competition within the internal market in electricity, taking into account the particular characteristics of national and regional markets. This will involve the establishment of a compensation mechanism for cross-border flows of electricity and the setting of harmonised principles on cross-border transmission charges and the allocation of available capacities of interconnections between national transmission systems“.*

Sukladno tom dokumentu, svaki OPS ima pravo na pripadajuću naknadu zbog tokova energije koja teče njegovom mrežom:

„(11) In an open, competitive market, transmission system operators should be compensated for costs incurred as a result of hosting cross-border flows of electricity on their networks by the operators of the transmission systems from which cross-border flows originate and the systems where those flows end.“

### Article 13

#### *Inter-transmission system operator compensation mechanism*

“1. Transmission system operators shall receive compensation for costs incurred as a result of hosting cross-border flows of electricity on their networks.

2. The compensation referred to in paragraph 1 shall be paid by the operators of national transmission systems from which cross-border flows originate and the systems where those flows end.”

Temeljna zakonska regulativa Europske Unije načelno propisuje odnose među operatorima prijenosnih sustava prilikom prekogranične razmjene električne energije, međutim, o tehničkim detaljima kao što su ispravak pogrešaka mjernih transformatora i načinu obračuna prijenosnih gubitaka se ne govori.

Primjer za ovakvu praksu može se naći u više izdanja britanskog *Code of Practice* [102]–[104]. Nadalje pogledajmo detaljnije što je propisano. U poglavlju 4.3.2. u *Code of Practice One* [102] stoji sljedeće:

“To achieve the overall accuracy requirements it may be necessary to compensate Meters for the error of the measurement transformers and the associated leads to the Meters. Values of the compensation shall be recorded and evidence to justify the compensation criteria, including wherever possible test certificates, shall be available for inspection...”

Iz toga je jasno da je ispravak pogrešaka potreban za poboljšanje ukupne točnosti mjerenja. Također stoji:

„...where the Actual Metering Point and the Defined Metering Point do not coincide then a Metering Dispensation shall be applied for and, where necessary, accuracy compensation for power transformer and/or line losses shall be provided to meet the overall accuracy...”

što znači da ako se fizička mjerna točka (engl. *Actual Metering Point*) i definirana mjerna točka međunarodne razmjene (engl. *Defined Metering Point*) ne podudaraju, potrebno je provesti ispravak izmjerenih vrijednosti.

Više tehničkih detalja vezano za ispravak izmjerene energije se ne spominje. Ovo je očigledan nedostatak zakonske regulative na kojem u budućnosti treba raditi. U nastavku disertacije će se opisati tehnički detalji ovog postupka uz obrazloženje financijskih efekata što može poslužiti kao ishodište za buduću implementaciju u zakonsku regulativu.

## 6.2. Ispravak izmjerene energije

### 6.2.1. Postupak ispravka izmjerene energije

Postupak ispravka razmijenjene energije podrazumijeva razvoj matematičkog modela mjerenja energije i njezin ispravak za sve sustavne komponente [105]. Mjerena energija je funkcija napona  $U$ , struje  $I$  i faznog kuta  $\varphi_S$

$$E = f(U, I, \varphi_S), \quad (6-1)$$

i stoga matematički model mjerenja energije jedne faze glasi

$$E = (U \cdot I \cdot \cos\varphi_S) \cdot t. \quad (6-2)$$

Mjereni napon  $U$ , struja  $I$  i sekundarni fazni kut  $\varphi_S$  moraju se svaki pojedinačno ispraviti za iznos sustavnih pogrešaka odnosno moraju se odrediti ispravljene vrijednosti napona  $U^*$ , struje  $I^*$  i faznog kuta  $\varphi_S^*$ . Sukladno izvješću o umjeravanju (engl. *Calibration Certificate*)  $p_{U\%}$  i  $p_{I\%}$  su postotne fazne pogreške naponskih mjernih transformatora (NMT) i strujnih mjernih transformatora (SMT).  $\delta_U$  i  $\delta_I$  su fazne pogreške NMT i SMT. Ispravljene vrijednosti napona  $U^*$ , struje  $I^*$  i faznog kuta  $\varphi_S^*$  računaju se prema

$$U^* = U(1 - p_U - p_{PN}), \quad (6-3)$$

$$I^* = I(1 - p_I), \quad (6-4)$$

$$\varphi_S^* = \varphi_S - \delta_U - \delta_I. \quad (6-5)$$

gdje je  $p_U = p_{U\%}/100$ ,  $p_I = p_{I\%}/100$ , a  $p_{PN} = p_{PN\%}/100$  je postotni pad napona u naponskim mjernim granama. Jednadžbe (6-3), (6-4) i (6-5) vrijede za svaku fazu sustava.

Matematički model ispravljene ukupne energije za sve tri faze dobije se množenjem svake sastavnice koja se ispravlja odgovarajućim faktorom ispravka

$$E_{mj} = [U_1 \Gamma_1 \cos(\varphi_{s1}) + U_2 \Gamma_2 \cos(\varphi_{s2}) + U_3 \Gamma_3 \cos(\varphi_{s3})] t - p_{BR\%} E_{mj}, \quad (6-6)$$

gdje je  $E_{mj}$  energija izmjerena brojiлом, a  $p_{BR\%}$  pripadajuća postotna pogreška.

Iz jednadžbi (6-3), (6-4), (6-5) i (6-6) slijedi potpuni izraz za ispravljenu trofaznu energiju

$$\begin{aligned} E_{mj} = & [U_1(1 - p_{U1} - p_{PN1})I_1(1 - p_{I1}) \cos(\varphi_{S1} - \delta_{U1} - \delta_{I1}) + \\ & + U_2(1 - p_{U2} - p_{PN2})I_2(1 - p_{I2}) \cos(\varphi_{S2} - \delta_{U2} - \delta_{I2}) + U_3(1 - \\ & - p_{U3} - p_{PN3})I_3(1 - p_{I3}) \cos(\varphi_{S3} - \delta_{U3} - \delta_{I3})] t - p_{BR\%} E_{mj}. \end{aligned} \quad (6-7)$$

### 6.2.2. Utjecaj promjene strujne, naponske i kutne pogreške na ispravljenu energiju

Utjecaj promjena strujne, naponske i kutne pogreške na ispravljenu energiju odredit će se s pomoću analize osjetljivosti matematičkog modela(6-7). Osjetljivost ispravljene energije na pojedini parametar odredit će se tako da se jednadžba (6-7) izrazi kao funkcija u ovisnosti o promatranom parametru uzimajući ostale varijable konstantnima

$$E_{p_U} = f(p_U) |_{p_I, \delta_I, \delta_U, \varphi_S, p_{BR}, p_{PN} = const.} \quad (6-8)$$

$$E_{\delta_U} = f(\delta_U) |_{p_U, p_I, \delta_I, \varphi_S, p_{BR}, p_{PN} = const.} \quad (6-9)$$

$$E_{p_I} = f(p_I) |_{p_U, \delta_I, \delta_U, \varphi_S, p_{BR}, p_{PN} = const.} \quad (6-10)$$

$$E_{\delta_I} = f(\delta_I) |_{p_U, p_I, \delta_U, \varphi_S, p_{BR}, p_{PN} = const.} \quad (6-11)$$

$$E_{p_{BR\%}} = f(\delta_{p_{BR}}) |_{p_U, p_I, \delta_U, \delta_I, \varphi_S, p_{PN} = const.} \quad (6-12)$$

$$E_{p_{PN\%}} = f(p_{PN}) |_{p_U, \delta_I, \delta_U, \varphi_S, p_{BR}, p_I = const.} \quad (6-13)$$

Osim toga, izračunat će se indeks elastičnosti (IE) i indeks osjetljivosti (IO). IE računa se kao postotna promjena ovisne varijable podijeljena s postotnom promjenom neovisne varijable [106](6-7)(6-7)(6-7)(6-7)

$$IE = \frac{\Delta Y\%}{\Delta X\%}. \quad (6-14)$$

IE se koristi za prikazivanje nagiba krivulje i u konkretnom slučaju računat će se sljedeći parametri:

$$IE_{pU} = \frac{E^{\wedge}mj\%}{p_{U\%}}, \quad (6-15)$$

$$IE_{pI} = \frac{E^{\wedge}mj\%}{p_{I\%}}, \quad (6-16)$$

$$IE_{\delta U} = \frac{E^{\wedge}mj\%}{\delta_{U\%}}, \quad (6-17)$$

$$IE_{\delta I} = \frac{E^{\wedge}mj\%}{\delta_{I\%}}, \quad (6-18)$$

$$IE_{pBR} = \frac{E^{\wedge}mj\%}{p_{BR\%}}, \quad (6-19)$$

$$IE_{pPN} = \frac{E^{\wedge}mj\%}{p_{PN\%}}. \quad (6-20)$$

IO daje informaciju o relativnoj osjetljivosti ovisne varijable o neovisnoj varijabli kada ona varira od minimalne do maksimalne vrijednosti [106], [107]

$$IO = \frac{Y_{max} - Y_{min}}{Y_{max}}. \quad (6-21)$$

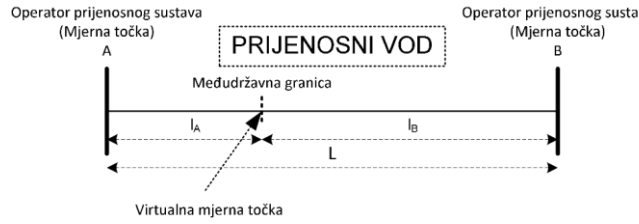
U konkretnom slučaju IO računat će se prema jednadžbi

$$IO = \frac{E^{\wedge}mj_{max} - E^{\wedge}mj_{min}}{E^{\wedge}mj_{max}}. \quad (6-22)$$

### 6.3. Raspodjela energije između operatora prijenosnih sustava

Poseban izazov u mjeriteljskoj praksi kod prekogranične razmjene energije predstavlja činjenica da obračunske mjerne točke nisu na fizičkoj granici OPS-ova tj. na obračunskoj točki [105]. Jedino potpuno i teorijski ispravno mjerenje energije bilo bi na fizičkoj granici OPS-ova. Međutim, fizičke granice OPS-ova su međudržavne granice koje se obično nalaze na prirodnim barijerama (npr. rijeke, šume), a mjerne točke su u transformatorskim stanicama na krajevima prijenosnog voda. Iz tog razloga nije moguće utvrditi energiju na stvarnoj granici, odnosno u obračunskoj mjernoj točki, nego se ona mjeri u mjernim točkama na krajevima voda. Na koji način će se energija uz pripadajuće gubitke raspodijeliti nije utvrđeno zakonskom regulativom nego je to prepušteno međudržavnim sporazumima. Prijedlog navedenog problema u sklopu disertacije je uporabom virtualne mjerne točke (VMT) koja će biti smještena u obračunskoj mjernoj točki na stvarnoj granici OPS-ova (slika 6.2). Njezin virtualni mjerni rezultat dobit će se reduciranjem vrijednosti izmjerenih na krajevima voda.





Slika 6.2 Virtualna mjerna točka

Ukupna duljina voda  $L$  podijeljena je na dio  $l_A$  koji pripada OPS-u A i dio  $l_B$  koji pripada OPS-u B tako da vrijedi

$$L = l_A + l_B. \quad (6-23)$$

Iz toga proizlazi da se VMT nalazi na udaljenosti  $l_A$  od mjerne točke A i na udaljenosti  $l_B$  od mjerne točke B. Stoga se izmjerena energija i pripadajući gubici dijele proporcionalno duljini voda koja pripada pojedinom OPS-u.

### 6.3.1. Raspodjela neispravljenih energija

U prvom koraku se neispravljeni gubici računaju kao razlika izmjerenih (neispravljenih) energija na strani A  $E_{mjA}$  i na strani B  $E_{mjB}$

$$E_G = E_{measA} - E_{measB}. \quad (6-24)$$

Uzimajući u obzir mjerne nesigurnosti izmjerene energije na strani A  $u_{mjA}$  i na strani B  $u_{mjB}$  koji određuju mjernu nesigurnost gubitaka  $u_G$ , cjelovit mjerni rezultat gubitaka glasi

$$E_{G\_UK} = E_G \pm u_G. \quad (6-25)$$

Izračunati gubici se dijele proporcionalno između OPS-ova i to tako da OPS-u A pripadaju gubici

$$E_{GA} = \frac{l_A}{L} E_G, \quad (6-26)$$

a OPS-u B gubici

$$E_{GB} = \frac{l_B}{L} E_G. \quad (6-27)$$

Virtualna energija  $E_{VMT}$  tj. energija izmjerena u VMT mora biti jednaka gledajući s obje strane voda. Ako energija teče iz OPS-a A prema OPS-u B mora vrijediti

$$E_{VMT} = E_{mjA} - E_{GA} = E_{mjB} + E_{GB}, \quad (6-28)$$

$$E_{VMT} = E_{mjA} - \frac{l_A}{L} E_G = E_{mjB} + \frac{l_B}{L} E_G. \quad (6-29)$$

Ako energija teče iz OPS-a B prema OPS-u A mora vrijediti

$$E_{VMT} = E_{mjA} + E_{GA} = E_{mjB} - E_{GB}, \quad (6-30)$$

$$E_{VMT} = E_{mjA} + \frac{l_A}{L} E_G = E_{mjB} - \frac{l_B}{L} E_G. \quad (6-31)$$

### 6.3.2. Raspodjela ispravljene energije

Postupak ispravka izmjerene energije provodi se na oba kraja voda stoga izmjerena energija  $E_{mjA}$  postaje  $E'_{mjA}$ , a izmjerena energija  $E_{mjB}$  postaje  $E'_{mjB}$ . Ispravljeni gubici iznose

$$E'_G = E'_{measA} - E'_{measB}. \quad (6-32)$$

Uzimajući u obzir mjerne nesigurnosti izmjerene ispravljene energije na strani A  $u'_{mjA}$  i na strani B  $u'_{mjB}$  koji određuju mjernu nesigurnost gubitaka  $u'_G$ , cjelovit mjerni rezultat gubitaka glasi

$$E'_{G\_UK} = E'_G \pm u'_G. \quad (6-33)$$

Izračunati ispravljeni gubici se dijele proporcionalno između OPS-ova i to tako da OPS-u A pripadaju gubici

$$E'_{GA} = \frac{l_A}{L} E'_G, \quad (6-34)$$

a OPS-u B gubici

$$E'_{GB} = \frac{l_B}{L} E'_G. \quad (6-35)$$

Ispravljena virtualna energija  $E_{IVMT}$  tj. energija izmjerena u ispravljenoj VMT (IVMT) mora biti jednaka gledajući s obje strane voda. Ako energija teče iz OPS-a A prema OPS-u B mora vrijediti

$$E'_{VMT} = E'_{mjA} - E'_{GA} = E'_{mjB} + E'_{GB}, \quad (6-36)$$

$$E'_{VMT} = E'_{mjA} - \frac{l_A}{L} E'_G = E'_{mjB} + \frac{l_B}{L} E'_G. \quad (6-37)$$

Ako energija teče iz OPS-a B prema OPS-u A mora vrijediti

$$E'_{VMT} = E'_{mjA} + E'_{GA} = E'_{mjB} - E'_{GB}, \quad (6-38)$$

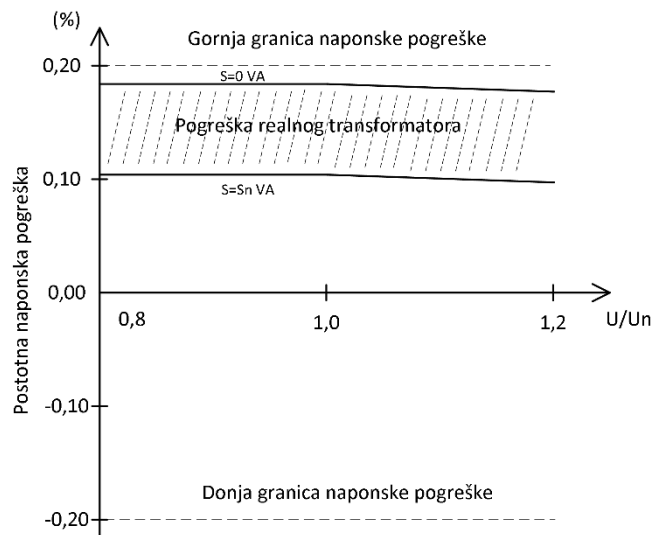
$$E'_{VMT} = E'_{mjA} + \frac{l_A}{L} E'_G = E'_{mjB} - \frac{l_B}{L} E'_G. \quad (6-39)$$

Konačno, energija u IVMT je mjerodavna za obračun između OPS-ova.

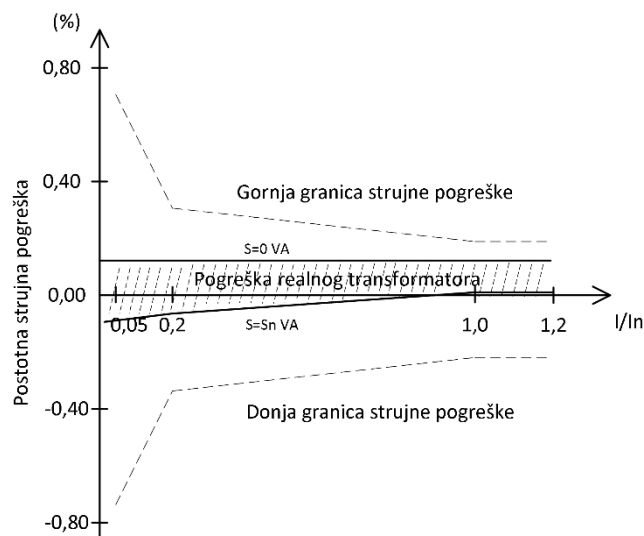
## 6.4. Analiza mjerne nesigurnosti na obračunskom mjernom mjestu

### 6.4.1. Sastavnice mjerne nesigurnosti

Ukupna mjerna nesigurnost u mjernoj točki sastoji se od lanca mjernih nesigurnosti počevši od mjernih transformatora (MT), preko mjernih vodiča sve do brojila električne energije. Pogreške NMT i SMT iskazuju se u izvješću o umjeravanju u obliku krivulje u ovisnosti o sekundarnom opterećenju jezgre transformatora (engl. *burden*) i primarnom opterećenju. Tipični primjeri prikazani su na slikama 6.3. i 6.4. U obzir je potrebno uzeti i mjernu nesigurnosti umjeravanja.



Slika 6.3. Tipični primjer pogrešaka NMT klase točnosti 0,2

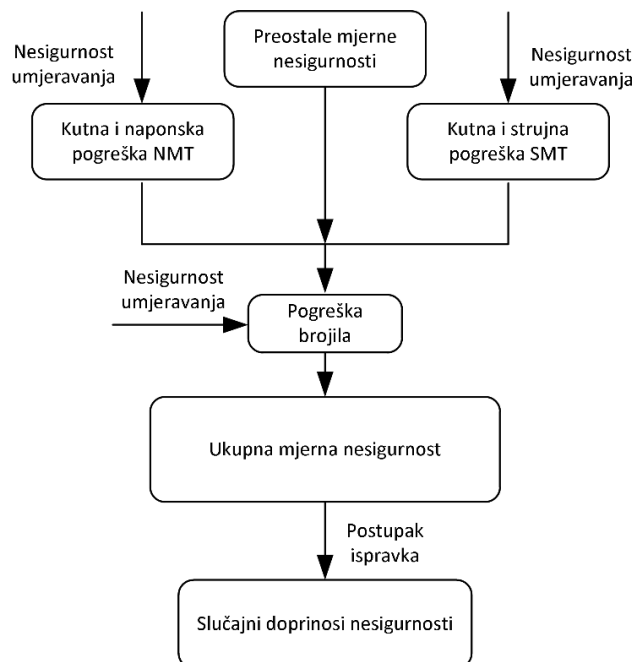


Slika 6.4. Tipični primjer pogrešaka SMT klase točnosti 0,2

Lanac mjernih nesigurnosti (slika 6.5.) sastoji se od:

- $p_{U1\%}, p_{U2\%}, p_{U3\%}$ - postotne pogreške NMT
- $\delta_{U1}, \delta_{U2}, \delta_{U3}$ - apsolutne fazne pogreške NMT
- $p_{I1\%}, p_{I2\%}, p_{I3\%}$ - postotne pogreške SMT
- $\delta_{I1}, \delta_{I2}, \delta_{I3}$ - apsolutne fazne pogreške SMT
- $u_{NMTcal\%}$ - mjerna nesigurnosti umjeravanja NMT
- $u_{SMTcal\%}$ - mjerna nesigurnosti umjeravanja SMT
- $p_{BR\%}$ - postotna pogreška brojila električne energije
- $u_{BRcal\%}$ - mjerna nesigurnost umjeravanja brojila električne energije
- $p_{PN1\%}, p_{PN2\%}, p_{PN3\%}$  – postotni pad napona u naponskim mjernim krugovima
- $u_{PN\%}$  - mjerna nesigurnost pada napona
- $u_{PMN\%}$  - preostale mjerne nesigurnosti

Bez gubitka općenitosti, preostale mjerne nesigurnosti koje je potrebno procijeniti za konkretno obračunsko mjerno mjesto, a imaju znatno manji utjecaj od navedenih (npr. atmosferski utjecaj na obračunskom mjernom mjestu i sl.) obuhvaćene su kao preostala mjerna nesigurnost  $u_{PMN\%}$ .



Slika 6.5. Lanac mjernih nesigurnosti

## 6.4.2. Izračun mjerne nesigurnosti

Matematički model za izračun ukupne mjerne nesigurnosti iskazuje se kao funkcionalna ovisnost o svim sastavnicama mjerne nesigurnosti kao što je opisano u prethodnom potpoglavlju

$$u_{mj} = f[p_{U1\%}, p_{U2\%}, p_{U3\%}, u_{NMTcal\%}, p_{I1\%}, p_{I2\%}, p_{I3\%}, u_{SMTcal\%}, \delta_{U1}, \delta_{I1}, \delta_{U2}, \delta_{I2}, \delta_{U3}, \delta_{I3}, p_{BR\%}, u_{BRcal\%}, p_{PN1\%}, p_{VD2\%}, p_{PN3\%}, u_{PN\%}, u_{PMN\%}]. \quad (6-40)$$

Tablica 6.1. prikazuje prirodu svih sastavnica mjerne nesigurnosti i pogrešaka koje čine lanac nesigurnosti.

Tablica 6.1. Priroda sastavnica lanca mjernih nesigurnosti

| Veličina                                | Vrsta doprinosa    | Priroda doprinosa nesigurnosti | Funkcija gustoće vjerojatnosti |
|---|--------------------|--------------------------------|--------------------------------|
| $p_{U1\%}, p_{U2\%}, p_{U3\%}$          | Pogreška           | Sustavna                       | -                              |
| $\delta_{U1}, \delta_{U2}, \delta_{U3}$ | Pogreška           | Sustavna                       | -                              |
| $p_{I1\%}, p_{I2\%}, p_{I3\%}$          | Pogreška           | Sustavna                       | -                              |
| $\delta_{I1}, \delta_{I2}, \delta_{I3}$ | Pogreška           | Sustavna                       | -                              |
| $u_{NMTcal\%}$                          | Mjerna nesigurnost | Slučajna                       | Pravokutna                     |
| $u_{SMTcal\%}$                          | Mjerna nesigurnost | Slučajna                       | Pravokutna                     |
| $p_{BR\%}$                              | Pogreška           | Sustavna                       | -                              |
| $u_{BRcal\%}$                           | Mjerna nesigurnost | Slučajna                       | Pravokutna                     |
| $u_{mj}$                                | Mjerna nesigurnost | Slučajna                       | Gaussova                       |
| $p_{PN1\%}, p_{PN2\%}, p_{PN3\%}$       | Pogreška           | Sustavna                       | -                              |
| $u_{PN\%}$                              | Mjerna nesigurnost | Slučajna                       | Pravokutna                     |
| $u_{PMN\%}$                             | Mjerna nesigurnost | Slučajna                       | Pravokutna                     |

Nakon ispravka svi sustavnih pogrešaka, ukupna ispravljena mjerna nesigurnost je funkcija preostalih slučajnih sastavnica  $u_{NMTcal\%}$ ,  $u_{SMTcal\%}$ ,  $u_{BRcal\%}$ ,  $u_{PN\%}$  i  $u_{PMS\%}$

$$u_{mj} = f(u_{NMTcal\%}, u_{SMTcal\%}, u_{BRcal\%}, u_{PN\%}, u_{PMS\%}), \quad (6-41)$$

koja se računa prema jednadžbi

$$\begin{aligned}
u_{mj}^2 = & \left(\frac{u_{NMTcal\%1}}{\sqrt{3}}\right)^2 + \left(\frac{u_{NMTcal\%2}}{\sqrt{3}}\right)^2 + \left(\frac{u_{NMTcal\%3}}{\sqrt{3}}\right)^2 + \left(\frac{u_{SMTcal\%1}}{\sqrt{3}}\right)^2 + \\
& + \left(\frac{u_{SMTcal\%2}}{\sqrt{3}}\right)^2 + \left(\frac{u_{SMTcal\%3}}{\sqrt{3}}\right)^2 + \left(\frac{u_{BRcal\%}}{\sqrt{3}}\right)^2 + \left(\frac{u_{PN\%}}{\sqrt{3}}\right)^2 + \left(\frac{u_{PMS\%}}{\sqrt{3}}\right)^2.
\end{aligned} \tag{6-42}$$

Mjerna nesigurnost gubitaka računa se prema [6] kao

$$u_G = \sqrt{u_{mjA}^2 + u_{mjB}^2}. \tag{6-43}$$

Mjerna nesigurnost ispravljenih gubitaka računa se kao

$$u'_G = \sqrt{u_{mjA}^2 + u_{mjB}^2}. \tag{6-44}$$

Provedbom opisanog postupka dobivene su mjerne nesigurnosti razmijenjene energije i gubitaka prijenosa smanjene za iznos sustavnih sastavnica mjerne nesigurnosti. Zajednički s ispravljenom energijom (6-7) navedene mjerne nesigurnosti čine cjelovit mjerni rezultat razmijenjene energije i pripadajućih gubitaka. Ovako dobiveni rezultat može poslužiti kao temelj za pravedan financijski obračun između OPS-ova.

## 7. REZULTATI PRORAČUNA I SIMULACIJE

Praktični proračuni u okviru disertacije provode se na stvarnim primjerima iz 110 kV i 400 kV prijenosne mreže. Zbog povjerljivosti podataka neće se navoditi nazivi prijenosnih vodova. Prvi dio praktičnih rezultata koji se odnosi na mjerenje otpora prijenosnog voda i izračuna gubitaka uporabom ugrađene funkcije za izračun gubitaka u brojlama električne energije provodit će se na 110 kV prijenosnom vodu. Drugi dio praktičnih rezultata koji se odnosi na ispravak razmijenjene energije i pripadajućih gubitaka računat će se na primjeru 400 kV prijenosnog voda. Ove dvije naponske razine odabrane su jer su najzastupljenije u prijenosnom sustavu Republike Hrvatske dok je 220 kV naponska razina manje zastupljena. U zaključnim razmatranjima nakon provedenog proračuna procijenit će se mogućnost primjene jedne i druge metode za izračun gubitaka na svim naponskim razinama.

### 7.1. Rezultati mjerenja otpora prijenosnog voda

Mjerenja parametara prijenosnog voda provedena su na 110 kV vodu sljedećih tehničkih karakteristika: duljina 29,025 km, vodič Al/Fe, presjek vodiča 150/25 mm<sup>2</sup>, tip stupa jednostruka jela. Rezultate mjerenja napona  $U$ , struje  $I$  i kuta  $\varphi$  između struje i napona za sve tri faze prikazuje tablica P.1. u dodatku. Mjerenje je provedeno s 200 ponavljanja. Rezultati umjeravanja mjernog uređaja pokazuju da je garantirana točnost 1% za struju i napon te 1° za kut. Rezultati su prikazani u obliku histograma s aproksimiranom inverznom Gaussovom razdiobom (slike 7.1.-7.3) koja pokazuje najbolje *log-likelihood* vrijednosti (tablica 7.1). Inverzna Gaussova razdioba zadana je jednadžbom

$$f(x; \mu; \lambda) = \left[ \frac{\lambda}{2\pi x^3} \right]^{1/2} \exp \left\{ \frac{-\lambda(x - \mu)^2}{2\mu^2 x} \right\}, \quad (7-1)$$

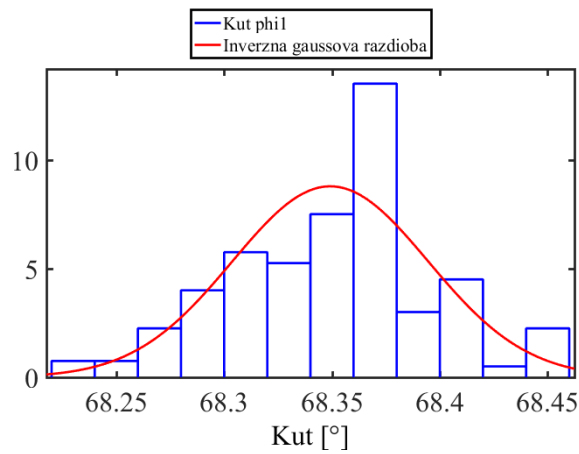
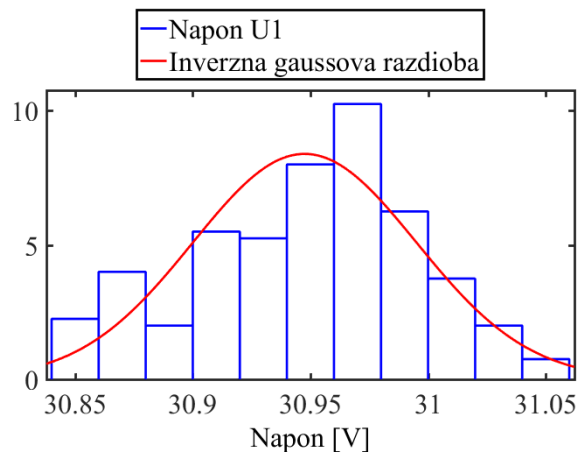
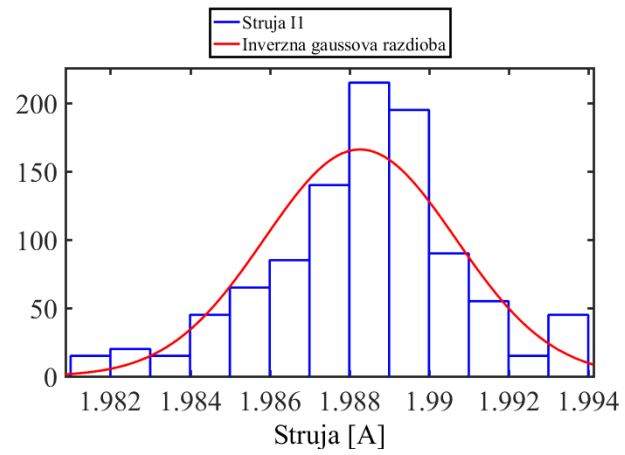
za sve  $x > 0$ , gdje je  $\mu > 0$  srednja vrijednost razdiobe a  $\lambda > 0$  parametar oblika. Povećanjem  $\lambda$  prema beskonačnosti inverzna Gaussova razdioba postaje sličnija normalnoj razdiobi.

Tablica 7.1. *Log-likelihood* vrijednosti inverzne Gaussove razdiobe za napon, struju i kut za sve faze

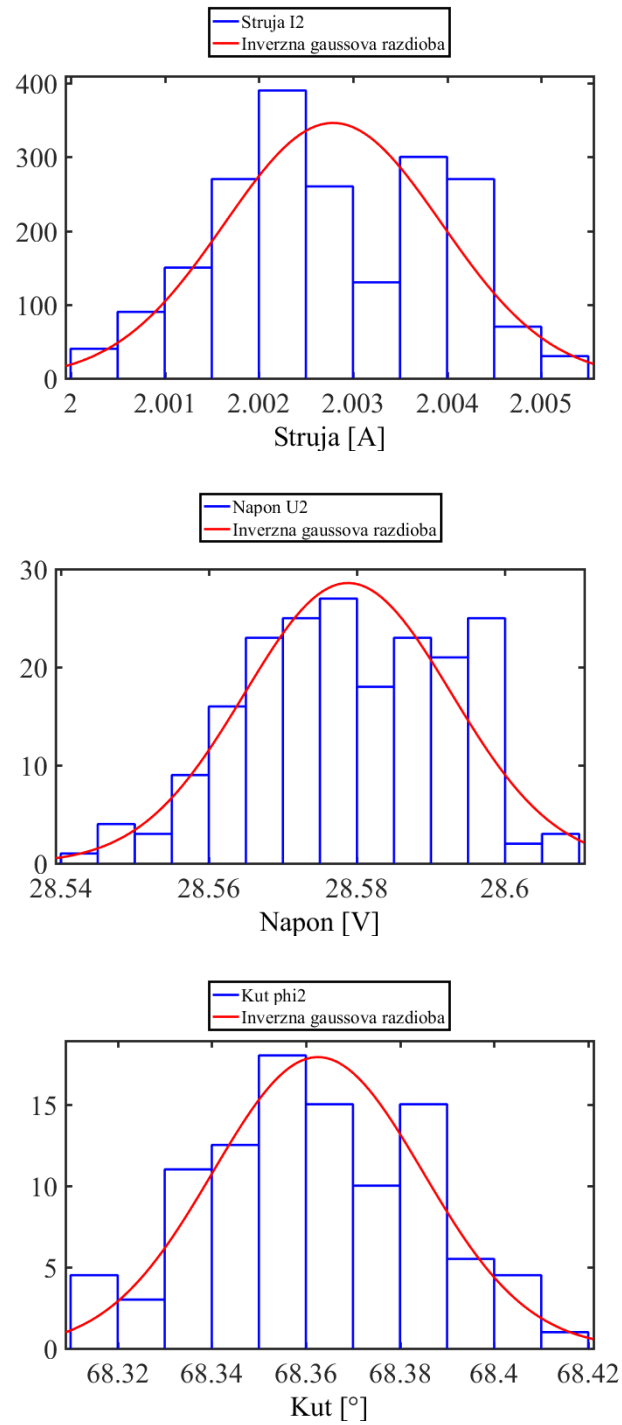
|                  | <b>Log-likelihood</b> |
|------------------|-----------------------|
| <b>Struja I1</b> | 1106,300              |
| <b>Struja I2</b> | 1253,110              |
| <b>Struja I3</b> | 1263,700              |
| <b>Napon U1</b>  | 509,273               |
| <b>Napon U2</b>  | 754,400               |
| <b>Napon U3</b>  | 730,579               |
| <b>Kut phi 1</b> | 518,329               |
| <b>Kut phi 2</b> | 660,734               |
| <b>Kut phi 3</b> | 670,509               |

Tablica P.2. prikazuje *log-likelihood* vrijednosti za druge razdiobe koje sadrži Matlab Distribution Fitting Tool: Birnbaum-Saunders razdioba, razdioba ekstremnih vrijednosti, gamma razdioba, poopćena razdioba ekstremnih vrijednosti, log-logistic razdioba, logistic razdioba, lognormalna razdioba, nakagami razdioba, Gaussova razdioba, Ricianova razdioba, t razdioba i Weibullova razdioba.

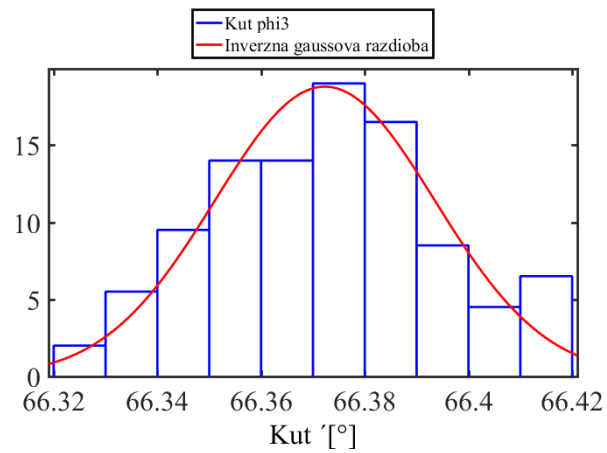
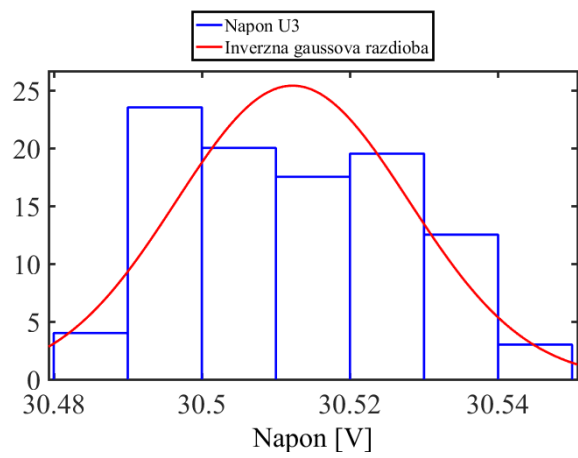
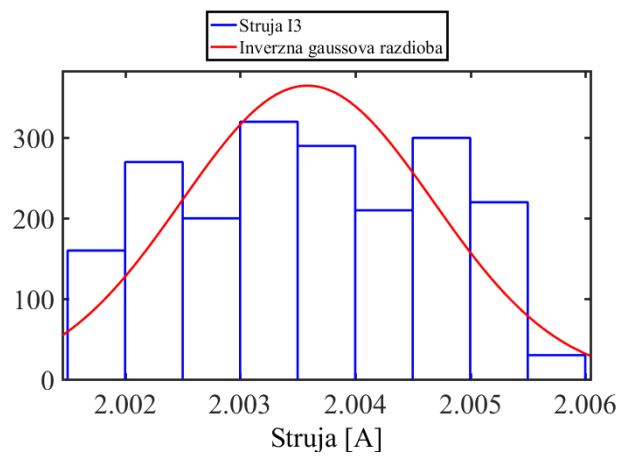




Slika 7.1. Histogram s inverznom Gaussovom razdiobom napona, struje i kuta faze L1



Slika 7.2. Histogram s inverznom Gaussovom razdiobom napona, struje i kuta faze L2



Slika 7.3. Histogram s inverznom Gaussovom razdiobom napona, struje i kuta faze L3

### 7.1.1. Rezultati proračuna mjerne nesigurnosti otpora s pomoću klasične GUM metode

Za sve mjerene parametre provodi se statistička analiza rezultata mjerenja. Za klasičnu GUM metodu izračunava se aritmetička sredina i standardna devijacija svakog parametra koji proizlaze iz uzastopnog ponavljanja mjerenja (A tip nesigurnosti) te ukupna nesigurnost koji se izračunava uvažavajući garantirane pogreške mjernog uređaja (B tip nesigurnosti) (tablica 7.2).

Tablica 7.2. Rezultati statističke analize rezultata mjerenja struje, napona i faznog kuta

|                  | Srednja vrijednost | Standardna devijacija | Ukupna nesigurnost |
|------------------|--------------------|-----------------------|--------------------|
| <b>Napon U1</b>  | 30,94763           | 0,04752               | 0,1849             |
| <b>Napon U2</b>  | 28,57880           | 0,01395               | 0,1656             |
| <b>Napon U3</b>  | 30,51226           | 0,01572               | 0,1769             |
| <b>Struja I1</b> | 1,98827            | 0,00240               | 0,0117             |
| <b>Struja I2</b> | 2,00279            | 0,00115               | 0,0116             |
| <b>Struja I3</b> | 2,00359            | 0,00109               | 0,0116             |
| <b>Kut phi1</b>  | 68,34923           | 0,04542               | 0,3972             |
| <b>Kut phi2</b>  | 68,36256           | 0,02229               | 0,3953             |
| <b>Kut phi3</b>  | 66,37231           | 0,02123               | 0,3838             |

Proračun otpora prijenosnog voda i pripadajuće mjerne nesigurnosti provodi se za svaku fazu posebno prema jednadžbama (4-11) - (4-17). Prilikom izračuna u obzir se uzima i matrica korelacija ulaznih veličina koju prikazuje tablica 7.3. Rezultate proračuna prikazuje tablica 7.4.

Tablica 7.3. Matrica korelacija ulaznih veličina

| <b>Faza L1</b>   |                 |                  |                  |
|------------------|-----------------|------------------|------------------|
|                  | <b>Napon U1</b> | <b>Struja I1</b> | <b>Kut phi 1</b> |
| <b>Napon U1</b>  | 1               | 0,83062          | 0,190565         |
| <b>Struja I1</b> | 0,83062         | 1                | 0,187115         |
| <b>Kut phi 1</b> | 0,190565        | 0,187115         | 1                |

| <b>Faza L2</b>   |                 |                  |                  |
|------------------|-----------------|------------------|------------------|
|                  | <b>Napon U2</b> | <b>Struja I2</b> | <b>Kut phi 3</b> |
| <b>Napon U2</b>  | 1               | -0,35089         | 0,104249         |
| <b>Struja I2</b> | -0,35089        | 1                | -0,29584         |
| <b>Kut phi 2</b> | 0,104249        | -0,29584         | 1                |

| <b>Faza L3</b>   |                 |                  |                  |
|------------------|-----------------|------------------|------------------|
|                  | <b>Napon U3</b> | <b>Struja I3</b> | <b>Kut phi 3</b> |
| <b>Napon U3</b>  | 1               | -0,36212         | 0,440021         |
| <b>Struja I3</b> | -0,36212        | 1                | 0,353057         |
| <b>Kut phi 3</b> | 0,440021        | 0,353057         | 1                |

Tablica 7.4. Rezultati proračuna otpora prijenosnog voda i pripadajuće apsolutne mjerne nesigurnosti za svaku fazu uporabom GUM metode

|                 | <b>Srednja vrijednost</b> | <b>Složena nesigurnost</b> |
|-----------------|---------------------------|----------------------------|
| <b>Otpor R1</b> | 5,7427                    | 0,1020                     |
| <b>Otpor R2</b> | 5,2616                    | 0,0930                     |
| <b>Otpor R3</b> | 6,1036                    | 0,1076                     |

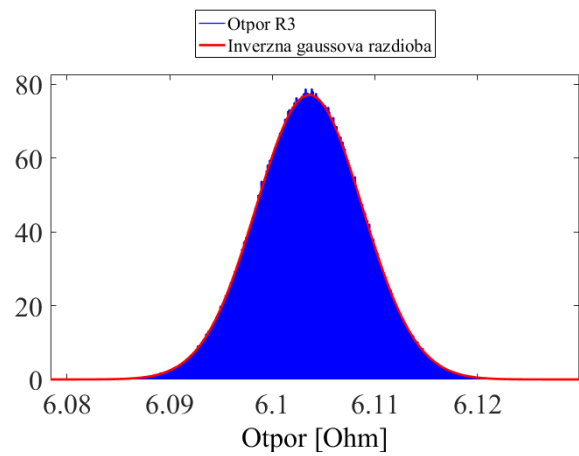
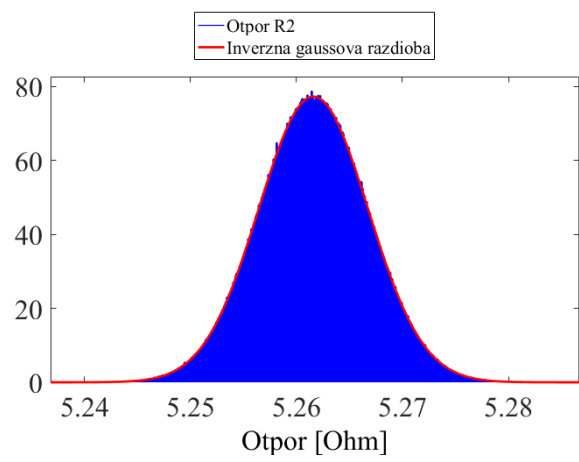
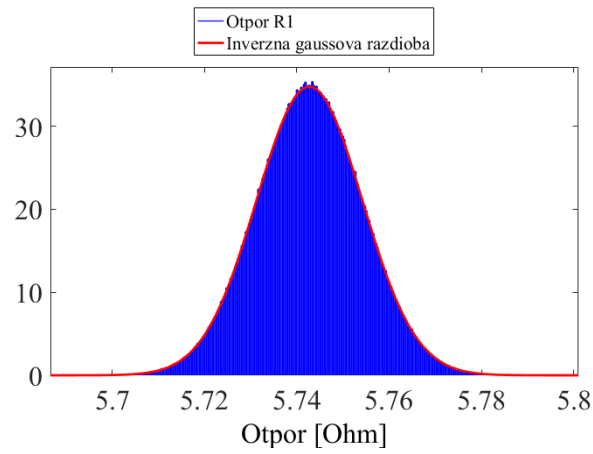
### 7.1.2. Rezultati proračuna mjerne nesigurnosti otpora s pomoću MC metode

MC metoda provodi se sukladno uputama u potpoglavlju 3.3 s brojem iteracija  $M=10^6$  koji se u literaturi navodi kao dovoljan za interval pokrivenosti 95% [78]. Kao ulazne veličine se koriste fitirane inverzne Gaussove razdiobe s parametrima prema tablici 7.5. te se simulira otpor za svaku fazu posebno.

Tablica 7.5. Parametri Inverzne Gaussove razdiobe za sve mjerene parametre

|                  | Srednja vrijednost | Lambda       | Standardna devijacija |
|------------------|--------------------|--------------|-----------------------|
| <b>Napon U1</b>  | 30,9476            | 1,31196*10e7 | 0,04753146            |
| <b>Napon U2</b>  | 28,5788            | 1,19879*10e8 | 0,01395385            |
| <b>Napon U3</b>  | 30,5123            | 1,14969*10e8 | 0,01571887            |
| <b>Struja I1</b> | 1,98827            | 1,3625*10e6  | 0,00240186            |
| <b>Struja I2</b> | 2,00279            | 6,04508*10e6 | 0,00115279            |
| <b>Struja I3</b> | 2,00359            | 6,72828*10e6 | 0,00109335            |
| <b>Kut phi1</b>  | 68,3492            | 1,54728*10e8 | 0,04542708            |
| <b>Kut phi2</b>  | 68,3626            | 6,43102*10e8 | 0,02228885            |
| <b>Kut phi3</b>  | 66,3723            | 6,48991*10e8 | 0,02122567            |

Izvršen je postupak aproksimacije razdioba na rezultate proračuna otpora prijenosnog voda. Najbolje *log-likelihood* vrijednosti (tablica 7.6) pokazuje ponovno inverzna Gaussova razdioba (slika 7.4) što je i očekivano jer su ulazne vrijednosti također opisane istom razdiobom. Parametre aproksimirane razdiobe prikazuje tablica 7.7. Provedbom MC metode dobivena je standardna devijacija odnosno standardna nesigurnost otpora prijenosnog voda. Rezultati su također prikazani u tablici 7.7. *Log-likelihood* vrijednosti za druge razdiobe prikazuje tablica P.6.u prilogu.



Slika 7.4. Rezultati proračuna otpora prijenosnog voda uporabom MC metode za svaku fazu i aproksimacije inverzne Gaussove razdiobe

Tablica 7.6. Log-likelihood vrijednosti inverzne Gaussove razdiobe

|                 | Log-likelihood |
|-----------------|----------------|
| <b>Otpor R1</b> | 3968010        |
| <b>Otpor R2</b> | 476730         |
| <b>Otpor R3</b> | 4765140        |

Tablica 7.7. Parametri aproksimirane inverzne Gaussove razdiobe i standardna nesigurnost

|                              | Otpor R1     | Otpor R2     | Otpor R3      |
|------------------------------|--------------|--------------|---------------|
| <b>Srednja vrijednost</b>    | 5,7427       | 5,2616       | 6,1036        |
| <b>Lambda</b>                | 1,43951*10e6 | 5,47608*10e6 | 8,551145*10e6 |
| <b>Standardna devijacija</b> | 0,0115       | 0,0052       | 0,0052        |

### 7.1.3. Rezultati proračuna mjerne nesigurnosti otpora s pomoću AMC metode

Za AMC metodu se koriste aproksimirane razdiobe s parametrima prema tablici 7.5. Proračun otpora prijenosnog voda i pripadajuće mjerne nesigurnosti provodi se za svaku fazu posebno prema uputama u poglavlju 3. Tablica 7.8. prikazuje broj iteracija AMC metode nakon kojeg je postignuta stabilnost rezultata.

Tablica 7.8. Broj iteracija AMC metode nakon kojeg je postignuta stabilnost rezultata

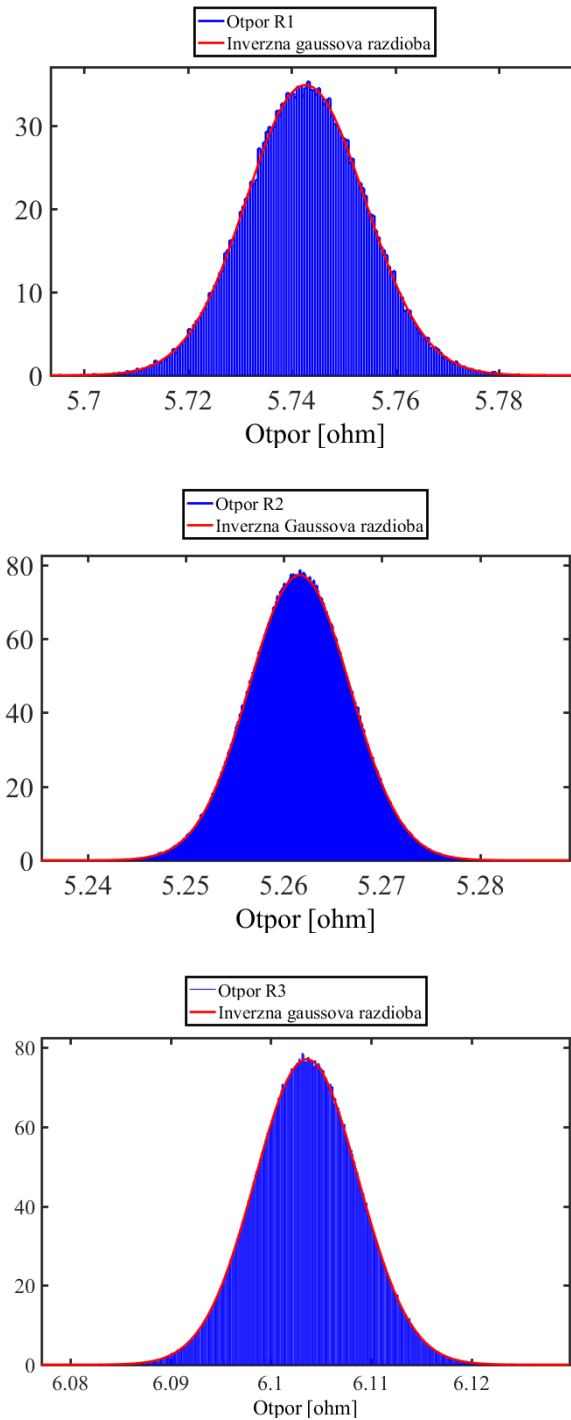
|                 | Broj iteracija |
|-----------------|----------------|
| <b>Otpor R1</b> | 120000         |
| <b>Otpor R2</b> | 1230000        |
| <b>Otpor R3</b> | 1290000        |

Simulacije za sva tri otpora su proširene kako bi se prikazao uvid u proces stabilizacije rezultata. Naime, AMC metoda se provodi sve dok se rezultati ne stabiliziraju kao što je prethodno opisano u potpoglavlju 3.4. Ako bi se simulacija provela s manjim brojem iteracija stabilnost rezultata ne bi bila postignuta, dok s druge strane, simulacija s većim brojem iteracija je nepotrebna odnosno nepotrebno troši vrijeme i računalne resurse. Simulacija je započeta s  $M=10000$  iteracija, sukladno preporuci u Dopuni 1 [13] te je osnovni korak povećanja iteracija također  $M=10000$ . Za otpor R1 je stabilnost postignuta nakon  $M=120000$  iteracija, ali je simulacija proširena do  $M=200000$  iteracija (tablica P.3. ). Za otpor R2 je stabilnost postignuta nakon  $M=1230000$  iteracija, ali je



simulacija proširena do  $M=11700000$  iteracija (tablica P4). Za otpor R3 je stabilnost postignuta nakon  $M=120000$  iteracija, ali je simulacija proširena do  $M=200000$  iteracija (tablica P5).

Izvršen je postupak aproksimacije razdiobe na rezultate proračuna otpora u svim fazama. Najbolje *log-likelihood* vrijednosti (tablica 7.9.) pokazuje ponovno inverzna Gaussova razdioba (slika 7.5) što je i očekivano jer su ulazne vrijednosti također opisane istom razdiobom. Parametre aproksimirane razdiobe prikazuje tablica 7.10. *log-likelihood* vrijednosti za druge razdiobe prikazuje tablica P.6.u prilogu.



Slika 7.5. Rezultati proračuna otpora prijenosnog voda uporabom AMC metode za svaku fazu i aproksimacije inverzne Gaussove razdiobe

Tablica 7.9. *log-likelihood* vrijednosti inverzne Gaussove razdiobe

|                 | <b>Log-likelihood</b> |
|-----------------|-----------------------|
| <b>Otpor R1</b> | 476664                |
| <b>Otpor R2</b> | 6243740               |
| <b>Otpor R3</b> | 6099220               |

Tablica 7.10. Parametri aproksimirane inverzne Gaussove razdiobe i standardna nesigurnost

|                              | Otpor R1     | Otpor R2     | Otpor R3     |
|------------------------------|--------------|--------------|--------------|
| <b>Srednja vrijednost</b>    | 5,74272      | 5,26161      | 6,10359      |
| <b>Lambda</b>                | 1,45162*10e6 | 5,46425*10e6 | 8,50921*10e6 |
| <b>Standardna devijacija</b> | 0,011422215  | 0,005163129  | 0,005169313  |

#### 7.1.4. Usporedba rezultata izračuna otpora prijenosnog voda

Tablica 7.11 usporedno prikazuje rezultate proračuna otpora prijenosnog voda u sve tri faze s pomoću svih primijenjenih metoda. Prikazane su srednje vrijednosti i standardne devijacije u apsolutnom i postotnom iznosu u odnosu na srednju vrijednost (vrijednosti u zagradi).

Tablica 7.11. Usporedba rezultata izračuna otpora prijenosnog voda

|            | Srednja vrijednost |      |      | Standardna devijacija |               |               |
|------------|--------------------|------|------|-----------------------|---------------|---------------|
|            | R1                 | R2   | R3   | R1                    | R2            | R3            |
| <b>GUM</b> | 5,74               | 5,26 | 6,10 | 0,10 (1,78%)          | 0,09 (1,77%)  | 0,11 (1,76%)  |
| <b>MC</b>  | 5,74               | 5,26 | 6,10 | 0,011 (0,19%)         | 0,005 (0,09%) | 0,005 (0,08%) |
| <b>AMC</b> | 5,74               | 5,26 | 6,10 | 0,011 (0,19%)         | 0,005 (0,09%) | 0,005 (0,08%) |

Može se uočiti da su srednje vrijednosti međusobno jednake neovisno o primijenjenoj metodi. Međutim, kod standardnih devijacija se mogu uočiti određene razlike. MC i AMC metoda imaju manje standardne devijacije nego GUM metoda. Uzroke navedenih sličnosti i razlika potražiti ćemo u načinu izračuna mjerne nesigurnosti. Sve metode imaju jednake ulazne vrijednosti koje su rezultat metode za mjerenja parametara prijenosnog voda. A tip mjerne nesigurnosti proizlazi upravo iz ponovljenih rezultata mjerenja parametara voda i rezultat je njihove statističke obrade. Stoga se može zaključiti da A tip nesigurnosti ne stvara značajnu razliku u konačnoj složenoj mjernoj nesigurnosti. Razlika se pojavljuje zbog načina uzimanja B tipa mjerne nesigurnosti. GUM metoda ima tzv. klasični način izračuna ukupne nesigurnost prema dokumentu [6] koji se temelji na korijenu iz sume kvadrata A i B tipa mjerne nesigurnosti kao što je prethodno opisano u uvodnim poglavljima te ćemo ga ovdje uzeti kao polaznu vrijednost. MC i AMC metode nemaju jasno iskazan način uzimanja B tipa nesigurnosti odnosno prema Dopuni 1 smatra se da je B tip već sadržan u nesigurnosti koja se odredi uporabom MC i AMC metode .

## 7.2. Rezultati mjerenja gubitaka prijenosnog voda

Rezultati proračuna otpora prijenosnog voda iz prethodnog potpoglavlja koristit će se za izračun gubitaka prijenosnog voda. U prvom trenutku računat će se gubici prema funkciji za mjerenje gubitaka ugrađenoj u brojila električne energije tj. prema gamma shemi (5-1). Kao i u prethodnom poglavlju, za proračun gubitaka i pripadajuće mjerne nesigurnosti koristit će se klasična GUM metoda, MC metoda i AMC metoda.

Dostupni su podaci o izmjerenim vrijednostima struje i napona na strani A prijenosnog voda za cijeli mjesec (2880 vrijednosti). Podaci su prikazani u tablici P.11. Pored toga dostupni su podaci o izmjerenim vrijednostima energija na stranama A i B prijenosnog voda u istom vremenskom razdoblju (2880 vrijednosti). Podaci su prikazani u tablici P.12.

Brojila električne energije na osnovu upisanog otpora prijenosnog voda kao konstante izračunavaju energiju gubitaka. Pri tome se ne upisuje otpor po fazama nego jedna vrijednost otpora. U promatranom slučaju u okviru disertacije dostupne se vrijednosti otpora po fazama, međutim, zbog sukladnosti proračuna s načelom rada brojila koristit će se srednja vrijednost otpora svih triju faza.

Mjerna nesigurnost mjerenja gubitaka električne energije računat će se za jednu karakterističnu mjernu točku iz promatranog mjeseca za koji se računaju gubici: izmjerena vrijednost napona  $U = 116,1$  kV, izmjerena vrijednost struje  $I = 34,082$  A. Podaci o strujama i naponima uzimaju se iz brojila električne energije koje ima određenu klasu točnosti za mjerenje energije, a nema za mjerenje struje i napona. Iz tog razloga se za mjernu nesigurnosti struje i napona uzima deklarirana nesigurnost umjeravanja strujnih i naponskih mjernih transformatora u certifikatu o umjeravanju u iznosu od 0,05%.

Rezultati izračuna prijenosnih gubitaka izračunatih prema pojedinoj metodi uspoređivat će se s gubicima izračunatim kao razlika izmjerenih energija na stranama A i B.

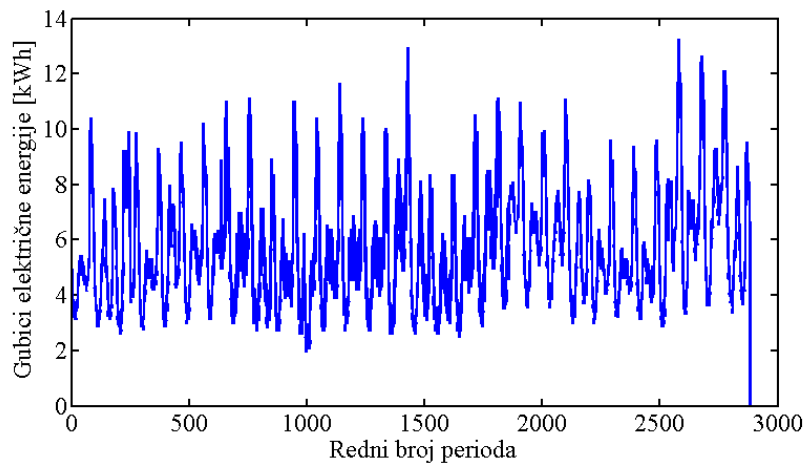
### 7.2.1. Rezultati proračuna gubitaka i pripadajuće mjerne nesigurnosti gubitaka s pomoću klasične GUM metode

Kao ulazna veličina koristi se rezultat proračuna otpora prijenosnog voda s pomoću klasične GUM metode (tablica 7.4. ), a računa se prema jednadžbama (5-2) i (5-3). Srednja vrijednost otpora svih triju faza iznosi  $R = 5,7026 \Omega$ . Ukupni gubici prema gamma shemi za cijeli mjesec

iznose  $E_{G\_GUM\_UK} = 15961$  kWh. Slika 7.6 prikazuje rezultate izračuna gubitaka po 15-minutnim periodima za cijeli mjesec.

Izračunati gubici u promatranoj karakterističnoj mjernoj točki iznose  $E_{G\_GUM\_1} = 4,9685$  kWh. Izračunata standardna devijacija odnosno apsolutna standardna mjerna nesigurnost gubitaka električne energija za promatranu mjernu točku iznosi  $u_{G\_GUM} = 0,051$  kWh odnosno u postotnom iznosu  $u_{G\_GUM\%} = 1,022\%$ . Cjelovit mjerni rezultat gubitaka glasi

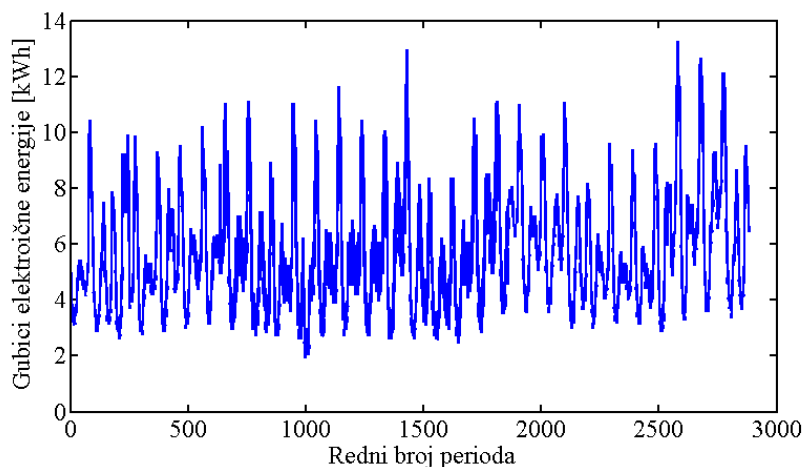
$$E_{G\_GUM} = (4,9685 \pm 0,051)kWh .$$



Slika 7.6. Izračunate vrijednosti gubitaka po periodima za cijeli mjesec

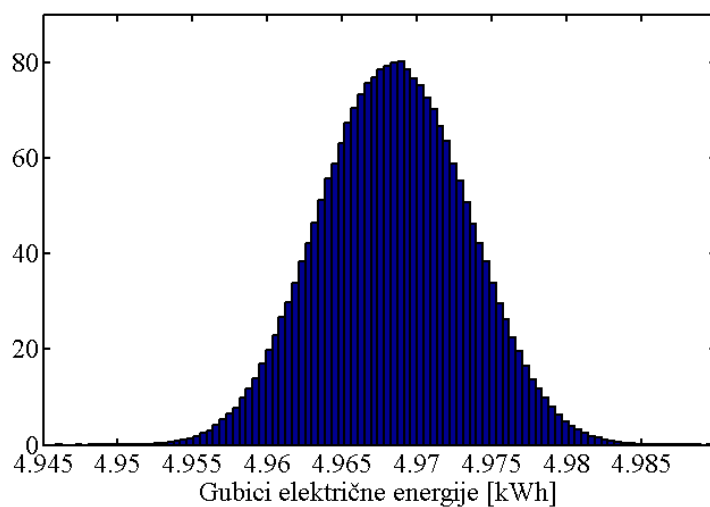
### 7.2.2. Rezultati proračuna gubitaka i pripadajuće mjerne nesigurnosti gubitaka s pomoću MC metode

Kao ulazne vrijednosti za proračun gubitaka s pomoću MC metode koriste se rezultati proračuna otpora prijenosnog voda s pomoću MC metode prikazani u tablici 7.7. Ukupni gubici prema gamma shemi za cijeli mjesec iznose  $E_{G\_MC\_UK} = 15960$  kWh. Slika 7.7 prikazuje rezultate izračuna gubitaka po periodima za cijeli mjesec.



Slika 7.7. Izračunate vrijednosti gubitaka po periodima za cijeli mjesec

Izračunati gubici u promatranoj karakterističnoj mjernoj točki iznose  $E_{G_{MC_1}} = 4,9685$  kWh. Izračunata standardna devijacija odnosno apsolutna standardna mjerna nesigurnost gubitaka električne energije za promatranu mjernu točku iznosi  $u_{G_{MC}} = 0,0049$  kWh (Slika 7.8).

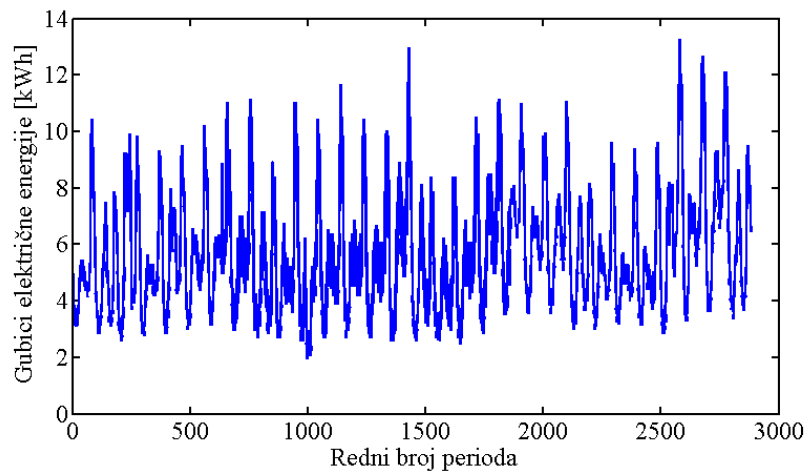


Slika 7.8. Razdioba mjerne nesigurnosti gubitaka u karakterističnoj mjernoj točki

### 7.2.3. Rezultati proračuna gubitaka i pripadajuće mjerne nesigurnosti gubitaka s pomoću AMC metode

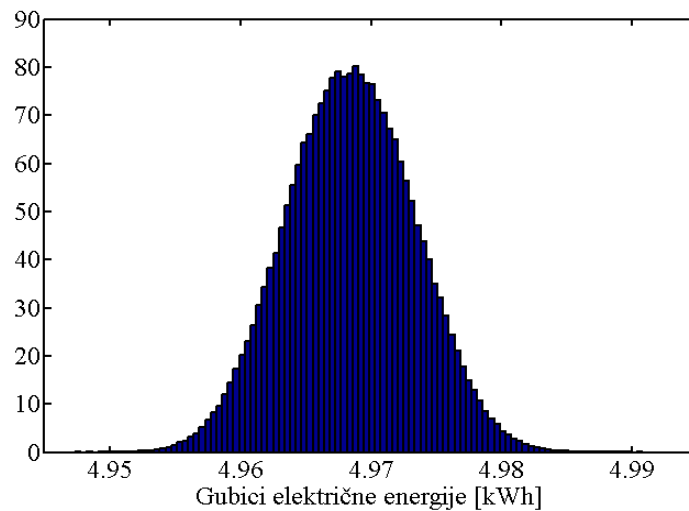
Kao ulazne vrijednosti za proračun gubitaka s pomoću MC metode koriste se rezultati proračuna otpora prijenosnog voda s pomoću MC metode prikazani u tablici 7.10. Ukupni gubici prema

gamma shemi za cijeli mjesec iznose  $E_{G\_AMC\_UK} = 15960$  kWh. Slika 7.9. prikazuje rezultate izračuna gubitaka po periodima za cijeli mjesec.



Slika 7.9. Izračunate vrijednosti gubitaka po periodima za cijeli mjesec

Izračunati gubici u promatranoj karakterističnoj mjernoj točki iznose  $E_{G\_AMC\_1} = 4,9684$  kWh. Izračunata standardna devijacija odnosno apsolutna standardna mjerna nesigurnost gubitaka električne energije za promatranu mjernu točku iznosi  $u_{G\_AMC} = 0,0049$  kWh (Slika 7.10).

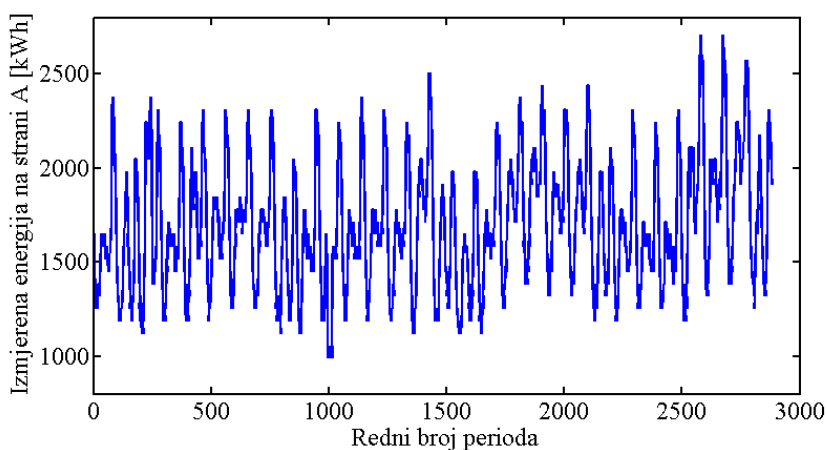


Slika 7.10. Razdioba A tipa mjerne nesigurnosti gubitaka u karakterističnoj mjernoj točki

#### 7.2.4. Rezultati proračuna gubitaka kao razlike izmjerenih vrijednosti energije i usporedba s rezultatima drugih metoda

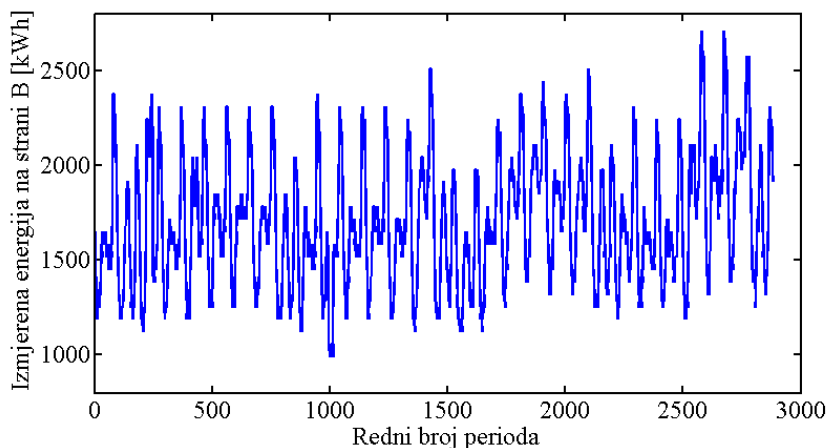
Često korištena metoda za izračun prijenosnih gubitaka u praksi je razlika izmjerenih energija na krajevima voda s tim da mora biti ispunjen temeljni uvjet da takva mjerenja postoje. Druga mogućnost je izračun energije prijenosnih gubitaka uporabom ugrađene funkcije u brojilo električne energije. U ovom poglavlju usporedit će se energija gubitaka izračunata kao razlika izmjerenih energija s energijom gubitaka izračunatih uporabom ugrađene funkcije u brojilo odnosno izračunatih preko nadomjesne sheme prijenosnog voda.

Ukupna izmjerena energija na strani A iznosi  $E_A = 4818990 \text{ kWh}$  (slika 7.11.) i na strani B  $E_B = 4836282 \text{ kWh}$  (slika 7.12.). Ukupni gubici izračunati kao razlika izmjerenih energija iznose  $E_G = 17292 \text{ kWh}$  (Slika 7.13.) što iznosi 0,36% od energije izmjerene na strani A.

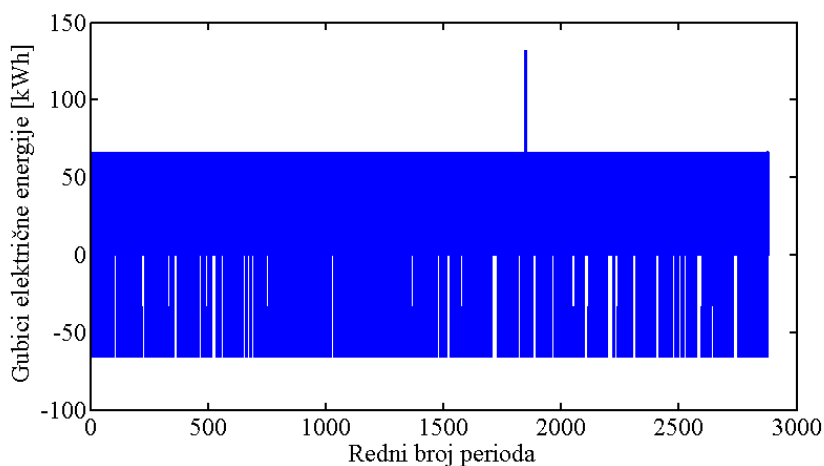


Slika 7.11. Izmjerene vrijednosti energije na strani A za cijeli mjesec





Slika 7.12. Izmjerene vrijednosti energije na strani B za cijeli mjesec



Slika 7.13. Izmjerene vrijednosti gubitaka električne energije izračunati kao razlika izmjerenih energija za cijeli mjesec

Tablica 7.12. usporedno prikazuje ukupne mjesečne gubitke izračunate prema svim navedenim metodama i pripadajući postotni iznos gubitaka u odnosu na razmijenjenu energiju.

Tablica 7.12. Usporedba ukupnih mjesečnih gubitaka

| Metoda                      | Ukupni mjesečni gubici [kWh] | Postotni mjesečni gubici [%] |
|-----------------------------|------------------------------|------------------------------|
| GUM                         | 15961                        | 0,33                         |
| MC                          | 15960                        | 0,33                         |
| AMC                         | 15960                        | 0,33                         |
| Razlika izmjerenih energija | 17292                        | 0,36                         |

Može se uočiti da se ukupni mjesečni gubici izračunati prema GUM, MC i AMC metodama gotovo jednaki (15960 kWh) što daje i jednak postotni udio gubitaka (0,33%) prema razmijenjenoj

energiji. Gubici izračunati kao razlika izmjerenih energija (17292 kWh i 0,36%) su veći za 528 kWh od gubitaka izračunatih uporabom drugih metoda. Ovakav rezultat proizlazi iz niza nedostataka opisanih u poglavlju 5.1 koje sadrži svaka metoda koja koristi nadomjesne sheme voda. Također je potvrđena pretpostavka da izračun gubitaka kao razlike izmjerenih energija nadoknađuje opisane nedostatke i daje prihvatljivije rezultate izračuna prijenosnih gubitaka.

Tablica 7.13. usporedno prikazuje cjelovit mjerni rezultat gubitaka izračunat uporabom GUM, MC i AMC metode.

Tablica 7.13. Usporedba cjelovitih mjernih rezultata u karakterističnom periodu

| Metoda | Srednja vrijednost [kWh] | Apsolutna mjerna nesigurnost [kWh] | Postotna mjerna nesigurnost [%] |
|--------|--------------------------|------------------------------------|---------------------------------|
| GUM    | 4,9685                   | 0,051                              | 1,022%                          |
| MC     | 4,9685                   | 0,045                              | 0,91%                           |
| AMC    | 4,9684                   | 0,046                              | 0,91%                           |

Rezultati MC i AMC metode se podudaraju ali se razlikuju od GUM metode. Ovakva razlika proizlazi prvenstveno iz karakteristika matematičkog modela koji sadrži nelinearne članove te na taj način nisu ispunjeni uvjeti za uporabu GUM metode opisani u poglavlju 2. Iz toga se zaključuje da su MC i AMC prihvatljive alternative za izračun mjerne nesigurnosti gubitaka.

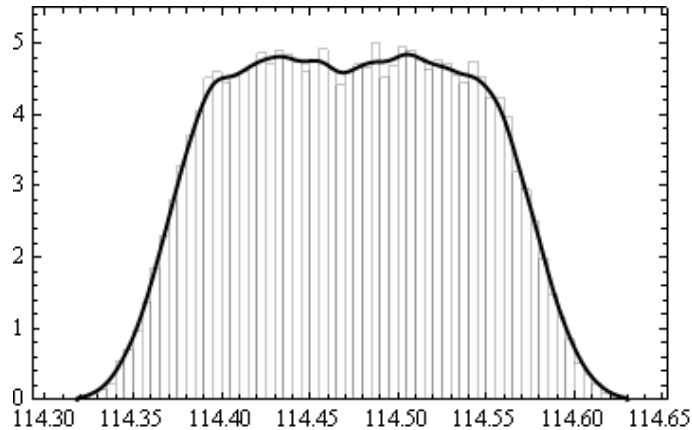
### 7.2.5. Procjena funkcije gustoće vjerojatnosti gubitaka

Postupak procjene funkcije gustoće vjerojatnosti provest će se na praktičnom primjeru izračuna gubitaka prijenosa sukladno teorijskom uvodu u poglavlju 5.1.3. Proračun će biti proveden na istom prijenosnom 110 kV vodu iz poglavlja 7.1 i 7.2 ali zbog jednostavnosti prikaza na primjeru faze L1. Važno je napomenuti da se isti postupak općenito može provesti na bilo kojem prijenosnom vodu i u bilo kojoj fazi uz uvažavanje odgovarajućih rezultata mjerenja gubitaka.

Rezultati mjerenja struje  $I$  i napona  $U$  u promatranoj radnoj točki su:  $I = 80.5 \text{ A}$ ,  $U = 110.5 \text{ kV}$ . Rezultati AMC metode za proračun otpora prijenosnog voda faze L1 iz poglavlja 7.1.3 se koriste kao ulazne veličine za izračun gubitaka prijenosnog voda. Stoga se lanac mjernih nesigurnosti u ovom postupku sastoji od inverzne gausove razdiobe za otpor  $R$  prijenosnog voda i dvije

uniformne razdiobe za struju  $I$  i napon  $U$  koji proizlaze iz umjernice mjernih transformatora gdje stoji da je nesigurnost umjeravanja 0,05%.

AMC metoda je provedena i rezultati su stabilizirani nakon  $M=60000$  iteracija. Slika 7.14. prikazuje rezultate simulacije u obliku histograma s aproksimiranom empirijskom razdiobom.



Slika 7.14. Histogram i empirijska razdioba rezultata simulacije gubitaka

Empirijska razdioba prikazana na slici sugerira simetrične parametarske razdiobe koje su mogući kandidati za odgovarajuću razdiobu gubitaka, a to su: četveroparametarska beta razdioba, poopćena trapezna razdioba i suma uniformne i normalne razdiobe. Za početak pogledajmo rezultate deskriptivne statistike u tablici 7.14.

Tablica 7.14. Rezultati deskriptivne statistike

| Veličina              | Gubici [kWh] |
|-----------------------|--------------|
| Minimum               | 114.304      |
| Donji kvartil (25%)   | 114.421      |
| Medijan (50%)         | 114.473      |
| Gornji kvartil (75%)  | 114.526      |
| Maksimum              | 114.644      |
| Srednja vrijednost    | 114.473      |
| Standardna devijacija | 0.06387      |

Nadalje promotrimo teorijske karakteristike razdioba koje su mogući kandidati i rezultate aproksimacije njihovih parametara.

#### *Generalizirana trapezna razdioba*

Generalizirana trapezna razdioba zadana je funkcijom gustoće razdiobe

$$f_2(x; a, b, c, d) = \begin{cases} u_2 \alpha^2 \left( \frac{x-a}{b-a} \right)^{n_1-1} & a \leq x < b \\ u_2 \left( (\alpha-1) \frac{c-x}{c-b} + 1 \right) & b \leq x < c \\ u_2 \alpha \left( \frac{d-x}{d-c} \right)^{n_3-1} & c \leq x < d \\ 0, & d < x \end{cases} \quad (7-3)$$

gdje je

$$u_2 = u_2(a, b, c, d, n_1, n_3, \alpha) = \frac{2n_1 n_3}{2\alpha(b-a)n_3 + (\alpha+1)(c-b)n_1 n_3 + 2(d-c)n_1} \quad (7-4)$$

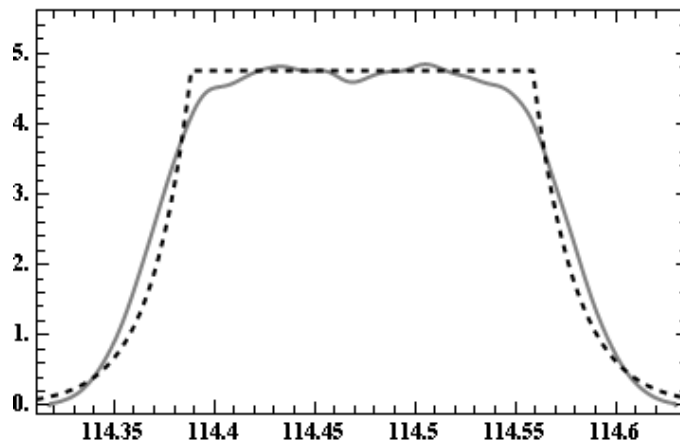
a parametri razdiobe  $a$ ,  $b$ ,  $c$  i  $d$  su realni brojevi takvi da vrijedi  $a < b \leq c < d$  i  $n_1, n_3, \alpha > 0$ . Osim navedenih postoje još i tri dodatna parametra  $n_1$ ,  $n_3$  i  $\alpha$ :

- parametar  $n_1$  određuje brzinu porasta funkcije na intervalu  $[a, b]$
- parametar  $n_3$  određuje brzinu pada funkcije na intervalu  $[c, d]$
- parametar  $\alpha = f_2(b)/f_2(c)$  određuje nagib pravca kroz točke  $(b, f_2(b))$  i  $(c, f_2(c))$ .

Tablica 7.15. Procijenjeni parametri poopćene trapezne razdiobe

| Parametar | Procjena |
|-----------|----------|
| $a$       | 113.498  |
| $b$       | 114.388  |
| $c$       | 114.559  |
| $d$       | 115.447  |
| $n_1$     | 45.379   |
| $n_3$     | 43.513   |

Slika 7.15 prikazuje empirijsku razdiobu i aproksimiranu poopćenu razdiobu prema parametrima iz tablice 7.15.



Slika 7.15. Empirijska razdioba i aproksimirana poopcena trapezna razdioba

Može se uočiti da aproksimirana razdioba dobro pokriva empirijsku razdiobu osim u rubnim područjima. Stoga je korisno razmotriti i druge predložene razdiobe.

#### Četveroparametarska beta razdioba

Četveroparametarska beta razdioba definirana je na intervalu  $[c, d]$  gdje su  $c$  i  $d$  realni brojevi tako da vrijedi  $-\infty < c < d < \infty$ . Osim toga ova razdioba ima i dva dodatna parametra  $\alpha > 0$  and  $\beta > 0$  koji određuju oblik razdiobe

$$f_2(x; \alpha, \beta, c, d) = \begin{cases} \frac{1}{B(\alpha, \beta)} \frac{(x - c)^{\alpha-1} (d - x)^{\beta-1}}{(d - c)^{\alpha+\beta-1}}, & x \in [c, d] \\ 0, & \text{nadalje,} \end{cases} \quad (7-5)$$

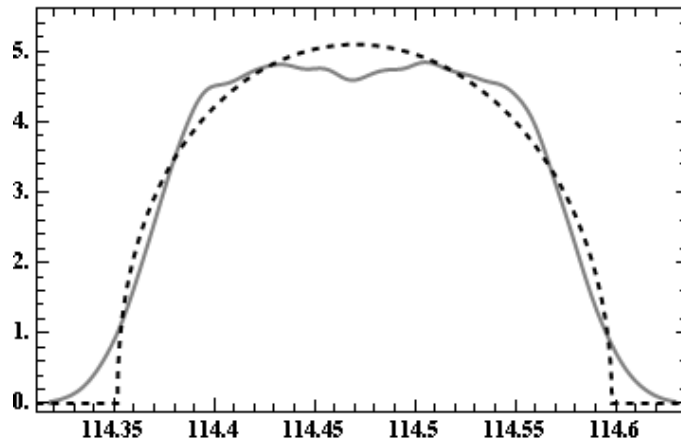
gdje je  $B(\alpha, \beta)$  beta funkcija o čemu se više detalja može naći u [108].

Rezultate aproksimacije metodom najmanjih kvadrata prikazuje tablica 7.16.

Tablica 7.16. Procijenjeni parametri četveroparametarske beta razdiobe

| Parametar | Procjena |
|-----------|----------|
| $\alpha$  | 1.447    |
| $\beta$   | 1.482    |
| $c$       | 114.352  |
| $d$       | 114.598  |

Slika 7.16. prikazuje empirijsku razdiobu i aproksimiranu četveroparametarsku beta razdiobu prema parametrima iz tablice 7.16.



Slika 7.16. Empirijska razdioba i aproksimirana četveroparameterska beta razdioba

Iz slike se vidi da ova razdioba pokazuje odstupanja u rubnim područjima ali isto tako i u području oko srednje vrijednosti.

#### *Suma pravokutne i normalne razdiobe*

Suma pravokutne razdiobe na intervalu  $[-a, a]$ ,  $a > 0$  i normirane normalne razdiobe sa standardnom devijacijom  $\sigma^2$  definira se funkcijom gustoće vjerojatnosti

$$f_3(x, a, \sigma) = \frac{1}{2a} \left( \Phi\left(\frac{a-x}{\sigma}\right) - \Phi\left(\frac{-a-x}{\sigma}\right) \right), \quad (7-6)$$

gdje je  $\Phi(x)$  Gaussova razdioba definirana kao

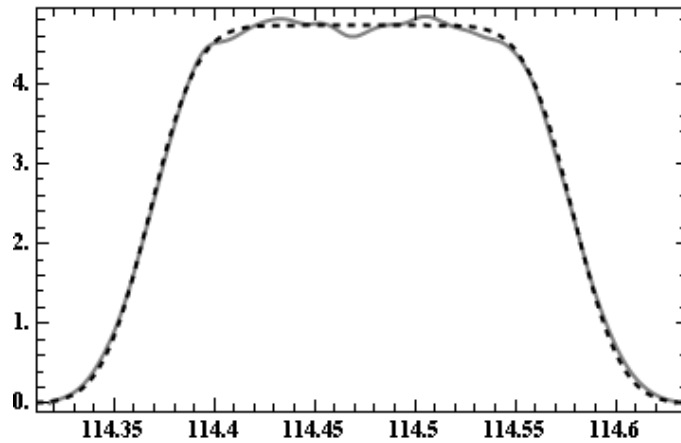
$$\Phi(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^x e^{-\frac{t^2}{2}} dt. \quad (7-7)$$

Više detalja o ovoj razdiobi i njezinoj primjeni može se pronaći u [101], [109]. Rezultate aproksimacije *maximum likelihood* metodom prikazuje tablica 7.17.

Tablica 7.17. Procijenjeni parametri sume pravokutne i normalne razdiobe

| Parametar | Procjena |
|-----------|----------|
| $\alpha$  | 0.106    |
| $\sigma$  | 0.019    |

Slika 7.17. prikazuje empirijsku razdiobu i aproksimiranu sumu pravokutne i normalne razdiobe prema parametrima iz tablice 7.17.



Slika 7.17. Empirijska razdioba i aproksimirana suma pravokutne i normalne razdiobe

Iz slike se vidi da ova razdioba najbolje aproksimira empirijsku razdiobu. Aproksimacija je provedena i za još neke razdiobe kako bi se isključile druge razdiobe kao potencijalni kandidati. Rezultate prikazuje tablica 7.18.

Tablica 7.18. Procjena parametara drugih razdioba

| Razdioba          | Procjena parametara               |
|-------------------|-----------------------------------|
| Gaussova razdioba | $\mu=114.473$<br>$\sigma=0.06388$ |
| Log-normalna      | $\mu=4.74034$<br>$\sigma=0.00066$ |
| Rayleigh razdioba | $\sigma=80.9448$                  |

Nadalje će se provesti Kolmogorov-Smirnov (KS) statistički test s ciljem numeričke usporedbe prikazanih razdioba (tablica 7.19).

Tablica 7.19. Vrijednosti KS statistike

| Razdioba                            | KS statistika |
|-------------------------------------|---------------|
| Suma pravokutne i normalne razdiobe | 0.00234378    |
| Četveroparameterska beta razdioba   | 0.012209      |
| Poopćena trapezna razdioba          | 0.012542      |
| Gaussova razdioba                   | 0.0469557     |
| Log-normalna                        | 0.0483328     |
| Rayleigh razdioba                   | 0.631083      |

Iz tablice se vidi da su vrijednosti KS statistike najmanje za sumu pravokutne i normalne razdiobe najmanje te je stoga ova razdioba potvrđena kao najbolja aproksimacija razdiobe promatranih gubitaka prijenosa.

KS test proveden s razinom značajnosti 0,05 ne odbacuje nul-hipotezu da je razdioba gubitaka dobro aproksimirana sumom uniformne i normalne razdiobe s parametrima iz tablice 7.22 ( $p$  vrijednost je 0,896602) dok je za ostale razdiobe odbačena ista nul hipoteza i  $p$  vrijednosti su jednake nuli. Na taj način je još jednom potvrđeno da ova razdioba najbolje aproksimira gubitke prijenosa iz promatranog primjera.

Važno je napomenuti da se opisani postupak može ponoviti u bilo kojem drugom praktičnom primjeru ali treba uzeti u obzir da razdiobe koje su ovdje procijenjene kao najbolje neće biti iste općenito u svim drugim primjerima odnosno ovdje provedeni postupak može dati drugačije rezultate ovisno o prirodi promatranih podataka tj. njihove empirijske razdiobe.

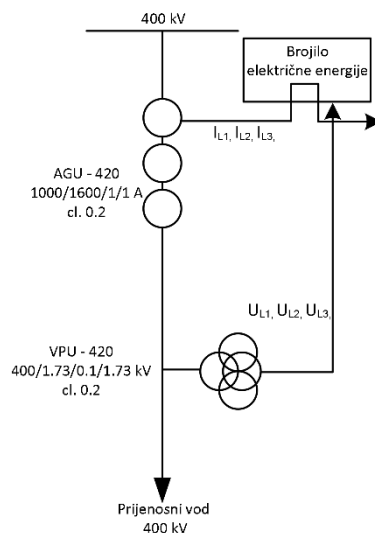
### **7.3. Rezultati praktičnog primjera raspodjele razmijenjene energije između operatora prijenosnih sustava**

Postupak raspodjele razmijenjene energije opisan u poglavlju 0 provest će se na praktičnom primjeru koji će biti opisan u ovom poglavlju. Promatra se 400 kV prijenosni vod. Zbog povjerljivosti podataka neće se navoditi ime promatranog voda, a karakteristike obračunskog mjernog mjesta i vrijednosti izmjerene energije su vrlo malo izmijenjeni bez značajnog utjecaja na konačne rezultate i zaključak proračuna.

#### **7.3.1. Podaci o obračunskom mjernom mjestu**

Slika 7.25. prikazuje načelnu shemu obračunskog mjernog sustava koji se sastoji od strujnih i naponskih mjernih transformatora, strujnih i naponskih mjernih grana uključujući automatsku zaštitnu preklopku i brojila električne energije.





Slika 7.18. Načelna shema obračunskog mjernog sustava

Proračun će se izvršiti u jednoj radnoj točki tj. u jednom 15-minutnom periodu na karakterističnu srijedu mjeseca lipnja 2015. godine. Izmjerene vrijednosti u promatranoj radnoj točki prikazane su u tablici 7.20. Energija teče iz transformatorske stanice A prema transformatorskoj stanici B.

Tablica 7.20. Promatrana radna točka ( 15.6.2015., 19:45-20:00 h)

| Mjerna točka A                                       | Mjerna točka B                                       |
|--|--|
| $E_{mjA}=82000 \text{ kWh}$                          | $E_{mjB}=81600 \text{ kWh}$                          |
| $\varphi_{S1}=\varphi_{S2}=\varphi_{S3}=18.60^\circ$ | $\varphi_{S1}=\varphi_{S2}=\varphi_{S3}=12.71^\circ$ |
| $I_1 = I_2 = I_3 = 489.7 \text{ A}$                  | $I_1 = I_2 = I_3 = 471.2 \text{ A}$                  |
| $U_1 = U_2 = U_3 = 408 \text{ kV}$                   | $U_1 = U_2 = U_3 = 410 \text{ kV}$                   |

Umjernice strujnih i naponskih mjernih transformatora iskazuju pogreške u cijelom radnom području. Za potrebe disertacije iz umjernice, koja se neće objaviti zbog povjerljivosti podataka, su interpolacijom izračunate pogreške prikazane u tablici 7.21. U naponskim granama priključeno je samo elektroničko brojilo električne energije čiji su naponski ulazi visokoimpedantni te predstavljaju zanemariv teret. Stoga se uzima da je pad napona u naponskim mjernih granama jednak nuli.

Tablica 7.21. Deklarirane mjerne pogreške u promatranoj radnoj točki

| Mjerna točka A                             | Mjerna točka B                             |
|--|--|
| $p_{U1\%}=-0,031\%$                        | $p_{U1\%}=-0,035\%$                        |
| $p_{U2\%}=0,020\%$                         | $p_{U2\%}=0,041\%$                         |
| $p_{U3\%}=-0,002\%$                        | $p_{U3\%}=-0,005\%$                        |
| $p_{I1\%}=0,04695\%$                       | $p_{I1\%}=0,04683\%$                       |
| $p_{I2\%}=0,00667\%$                       | $p_{I2\%}=0,00672\%$                       |
| $p_{I3\%}=-0,03719\%$                      | $p_{I3\%}=-0,03823\%$                      |
| $\delta_{UL1}^I=0,09^I$                    | $\delta_{UL1}^I=-3,11^I$                   |
| $\delta_{UL2}^I=0,21^I$                    | $\delta_{UL2}^I=-2,15^I$                   |
| $\delta_{UL3}^I=3,30^I$                    | $\delta_{UL3}^I=-1,28^I$                   |
| $\delta_{IL1}=3,485^I$                     | $\delta_{IL1}=-4,231^I$                    |
| $\delta_{IL2}=5,903^I$                     | $\delta_{IL2}=-3,853^I$                    |
| $\delta_{IL3}=3,742^I$                     | $\delta_{IL3}=-2,546^I$                    |
| $p_{BR\%} = 0,01\%$                        | $p_{BR\%} = 0,01\%$                        |
| $p_{PN1\%}, p_{PN2\%},$<br>$p_{PN3\%}=0\%$ | $p_{PN1\%}, p_{PN2\%},$<br>$p_{PN3\%}=0\%$ |

Osim pogrešaka strujnih i naponskih mjernih transformatora i brojila električne energije, doprinos ukupnoj nesigurnosti obračunskog mjernog mjesta daju i mjerne nesigurnosti umjeravanja uređaja koji se također iskazuju u umjernici (tablica 7.22.).

Tablica 7.22. Mjerne nesigurnosti umjeravanja uređaja i preostala mjerna nesigurnost

| Mjerna točka A        | Mjerna točka B        |
|-----------------------|-----------------------|
| $u_{NMTcal} = 0,05\%$ | $u_{NMTcal} = 0,05\%$ |
| $u_{BRcal\%}=0,03\%$  | $u_{BRcal\%}=0,03\%$  |
| $u_{SMTcal} = 0,05\%$ | $u_{SMTcal} = 0,05\%$ |
| $u_{PN\%} = 0\%$      | $u_{PN\%} = 0\%$      |
| $u_{PMN\%} = 0,067\%$ | $u_{PMN\%} = 0,067\%$ |

### 7.3.2. Ispravak razmijenjene energije u jednoj radnoj točki

Proračun je proveden sukladno opisu u poglavlju 0. Rezultati su prikazani u tablici 7.23. a veličine su sljedeće:

- $u_{mjA}, u_{mjB}$  – postotna mjerna nesigurnost energije mjerene na stranama A i B,
- $u_{mjA\_aps}, u_{mjB\_aps}$  - apsolutna mjerna nesigurnost energije mjerene na stranama A i B,  $E_A, E'_A,$
- $E_B, E'_B$  – cjelovit mjerni rezultat ispravljene i neispravljene energije mjerene na stranama A i B,
- $E_G, E'_G$  – neispravljene i ispravljene gubici,
- $u_G, u'_G$  – neispravljena i ispravljena postotna mjerna nesigurnost gubitaka,
- $u_{Gaps}, u'_{Gaps}$  - neispravljena i ispravljena apsolutna mjerna nesigurnost gubitaka,
- $E_{G\_UK}, E'_{G\_UK}$  – cjelovit mjerni rezultat ispravljenih i neispravljenih gubitaka,
- $E_{GA}, E_{GB}, E'_{GA}, E'_{GB}$  – neispravljene i ispravljene gubici pripisani strani A i strani B,
- $E_{VMT}, E'_{IVMT}$  – energija neispravljene i ispravljene VMT.

Tablica 7.23. Rezultati proračuna

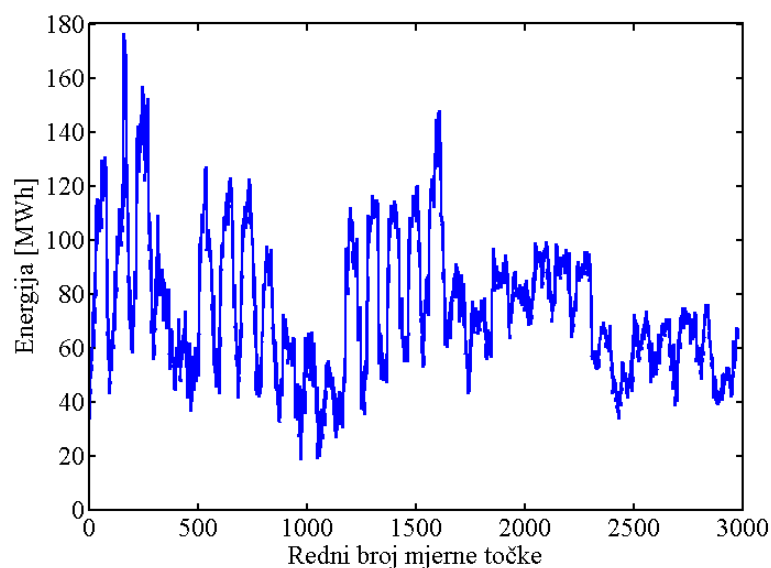
| Bez ispravka                  | Uz ispravak                   |
|-------------------------------|-------------------------------|
| $E_{mjA}=82000$ kWh           | $E'_{mjA} = 82052$ kWh        |
| $E_{mjB}=81600$ kWh           | $E'_{mjB} = 81593$ kWh        |
| $u_{mjA} = 0,14$ %            | $u'_{mjA} = 0,08$ %           |
| $u_{mjA\_aps} = 113$ kWh      | $u'_{mjA\_aps} = 67$ kWh      |
| $E_A = 82000 \pm 113$ kWh     | $E'_A = 82052 \pm 67$ kWh     |
| $u_{mjB} = 0,15$ %            | $u'_{mjB} = 0,08$ %           |
| $u_{mjB\_aps} = 118$ kWh      | $u'_{mjB\_aps} = 67$ kWh      |
| $E_B = 81600 \pm 118$ kWh     | $E'_B = 81593 \pm 67$ kWh     |
| $E_G = 400$ kWh               | $E'_G = 459$ kWh              |
| $u_{Gaps} = 164$ kWh          | $u'_{Gaps} = 95$ kWh          |
| $E_{G\_UK} = 400 \pm 164$ kWh | $E'_{G\_UK} = 459 \pm 95$ kWh |
| $E_{GA} = 219$ kWh            | $E'_{GA} = 251$ kWh           |
| $E_{GB} = 181$ kWh            | $E'_{GB} = 208$ kWh           |
| $E_{VMT}=81781$ kWh           | $E'_{IVMT} = 81800$ kWh       |

Izmjerena energija na stranama A i B prijenosnog voda je ispravljena, a mjerna nesigurnost je smanjena. Na taj način je postignut prvi cilj: mjerna nesigurnost energije je smanjena s 0,14% na 0,08 % na strani A i s 0,15% na 0,08% na strani B. Drugim riječima, razmijenjena energija je pravednije raspodijeljena među OPS-ovima. Prijenosni gubici povećani su s 400 kWh na 459 kWh dok se pripadajuća apsolutna mjerna nesigurnost smanjila sa 164 kWh na 95 kWh. S time je postignut i drugi cilj: gubici su ispravljene i mjerna nesigurnost im je smanjena. Drugim riječima,

gubici su poštenije raspodijeljeni među OPS-ovima. Važno je uočiti da je energija u ispravljenoj virtualnoj mjernoj točki  $E_{IVMT} = 81800$  kWh povećana u usporedbi s energijom u neispravljenoj virtualnoj mjernoj točki  $E_{VMT}=81781$  kWh. Stoga, OPS B će morati platiti više isporučene energije.

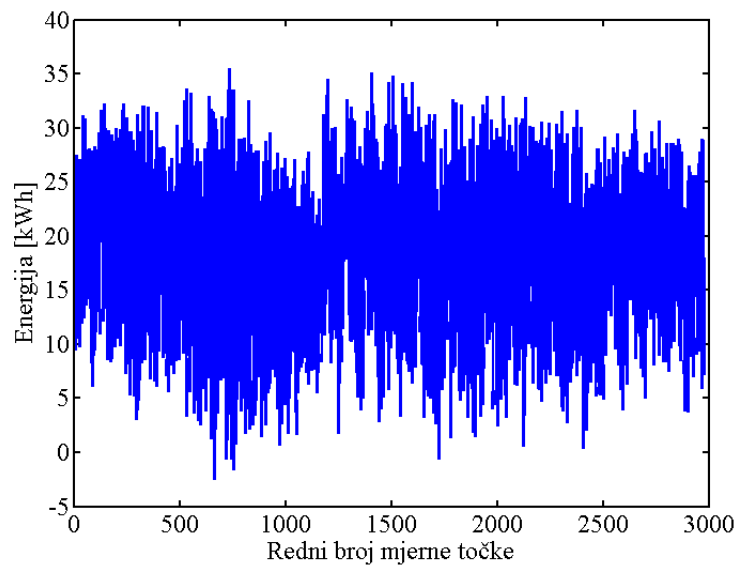
### 7.3.3. Ispravak razmijenjene energije u cijelom mjesecu

Dodatni proračun proveden je za cijeli mjesec srpanj 2015. godine. Ulazni podaci za proračun prikazani su u dodatku P.13. u osnovnim obračunskim periodima (15 minuta) za cijeli promatrani mjesec. Ukupna razmijenjena energija izmjerena na strani A iznosi  $E_{mjA}=219618,400$  MWh, a na strani B  $E_{mjB}=218189,600$  MWh. Energija virtualne mjerne točke iznosi  $E_{VMT}=218836,605$  MWh, a vrijednosti po mjernim točkama prikazuje slika 7.19.



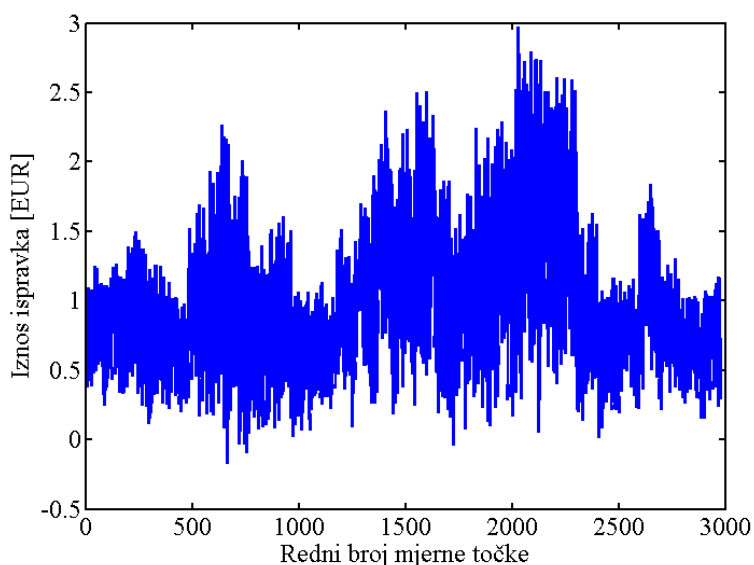
Slika 7.19. Energija virtualne mjerne točke za cijeli mjesec srpanj 2015.

Nakon ispravka, energija virtualne mjerne točke prelazi u energiju ispravljene virtualne mjerne točke  $E_{IVMT}=218890,048$  MWh što čini razliku od 53,444 MWh koji bi bili krivo pripisani za obračun električne energije (slika 7.20.).



Slika 7.20. Ispravci energije za cijeli mjesec srpanj 2015.

Uzimajući u obzir cijenu električne energije na tržištu preuzete s javno dostupne internetske stranice [110] krivo pripisana električna energija bi na tržištu iznosila 2892,2 € za mjesec srpanj 2015. godine. Ovdje valja napomenuti da je ostvarena cijena razmjene električne energije predmet bilateralnih sporazuma i nije javno dostupna. Iz tog razloga za potrebe disertacije uzeta je javno dostupna cijena po kojoj se energija nudi na tržištu dan unaprijed što ne odstupa značajno od ostvarene cijene i smatra se zadovoljavajućom procjenom za potrebe analize u disertaciji. Iznosi ispravaka u eurima po periodima za cijeli mjesec prikazuje slika 7.21. Cijene električne energije prikazane su u dodatku P.13.



Slika 7.21. Iznos ispravaka u eurima za cijeli mjesec srpanj 2015.

Rezultati proračuna po svim periodima za cijeli mjesec prikazani su u dodatku u tablici P.14.

### 7.3.4. Analiza osjetljivosti matematičkog modela za ispravak razmijenjene energije

Sukladno opisu u poglavlju 6.2.2, provest će se praktični proračun osjetljivosti matematičkog modela za ispravljenu razmijenjenu energiju (6-7) na promjenu strujne naponske i kutne pogreške. Strujne, naponske i kutne pogreške korištene u proračunu su očitane iz jednog karakterističnog primjera umjernica strujnih i naponskih mjernih transformatora i brojila električne energije uz nazivno opterećenje sekundarnih mjernih grana. Brojčane vrijednosti prikazuju tablice 7.24. i 7.25. Radi jednostavnosti i preglednosti analize pretpostavit će se jednake umjernice u sve tri faze što neće narušiti dobivene rezultate.

Tablica 7.24. Naponske i kutne pogreške naponskog mjernog transformatora

| $U / U_n$ | $p_U (\%)$ | $\delta_U (^\circ)$ |
|-----------|------------|---------------------|
| 0,8       | -0,12      | 3                   |
| 1,0       | -0,12      | 2,9                 |
| 1,2       | -0,13      | 2,7                 |

Tablica 7.25. Strujne i kutne pogreške strujnog mjernog transformatora

| $I / I_n$ | $p_I (\%)$ | $\delta_I (^\circ)$ |
|-----------|------------|---------------------|
| 0,2       | -0,07      | 3,5                 |
| 1         | -0,03      | 0,5                 |
| 2         | -0,05      | 1,5                 |

Linearnom interpolacijom iz tablica 7.24. i 7.25. dobivaju se jednadžbe krivulja pogrešaka:

$$y_{p_U} = \begin{cases} -0.12, & 0.8 \frac{U}{U_N} < x < 1 \frac{U}{U_N} \\ -0.05x - 0.07, & 1 \frac{U}{U_N} < x < 1.2 \frac{U}{U_N} \end{cases}, \quad (7-8)$$

$$y_{\delta_U} = \begin{cases} -0.5x + 3.4, & 0.8 \frac{U}{U_N} < x < 1 \frac{U}{U_N} \\ -x + 3.9, & 1 \frac{U}{U_N} < x < 1.2 \frac{U}{U_N} \end{cases}, \quad (7-9)$$

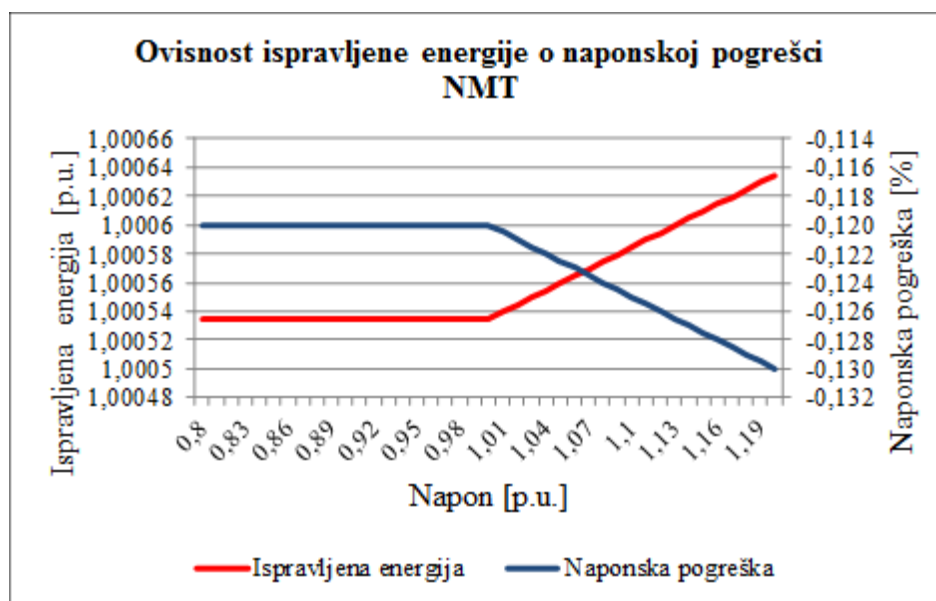
$$y_{p_I} = \begin{cases} 0.05x - 0.08, & 0.2 \frac{I}{I_N} < x < 1 \frac{I}{I_N} \\ -0.02x - 0.01, & 1 \frac{I}{I_N} < x < 2 \frac{I}{I_N} \end{cases}, \quad (7-10)$$

$$y_{\delta_I} = \begin{cases} -3.75x + 4.25, & 0.2 \frac{I}{I_N} < x < 1 \frac{I}{I_N}, \\ x - 0.5, & 1 \frac{I}{I_N} < x < 2 \frac{I}{I_N}, \end{cases} \quad (7-11)$$

Brojilo električne energije, sukladno umjernici, griješi 0.01%. Analiza osjetljivosti provodi se prema jednadžbama (6-8) do (6-13) uporabom nazivnih vrijednosti pogrešaka  $p_U = -0.12\%$ ,  $\delta_U = 2.9'$ ,  $p_I = -0.03\%$ ,  $\delta_I = 0.5'$  i  $U = 400 \text{ kV}$  i nazivnih izmjerenih vrijednosti na promatranom obračunskom mjernom mjestu  $\varphi_S = 18^\circ$ ,  $I = 430 \text{ A}$  i  $E_{mj} = 70917 \text{ kWh}$  za temeljni obračunski period  $t=15 \text{ min}$ .

### 7.3.4.1. Utjecaj naponske pogreške naponskog mjernog transformatora

Osjetljivost ispravljene energije  $E_{mj}$  na naponsku pogrešku  $p_U$  ispitana je sukladno jednadžbi (6-8). Promjena naponske pogreške opisana je jednadžbom (7-8).

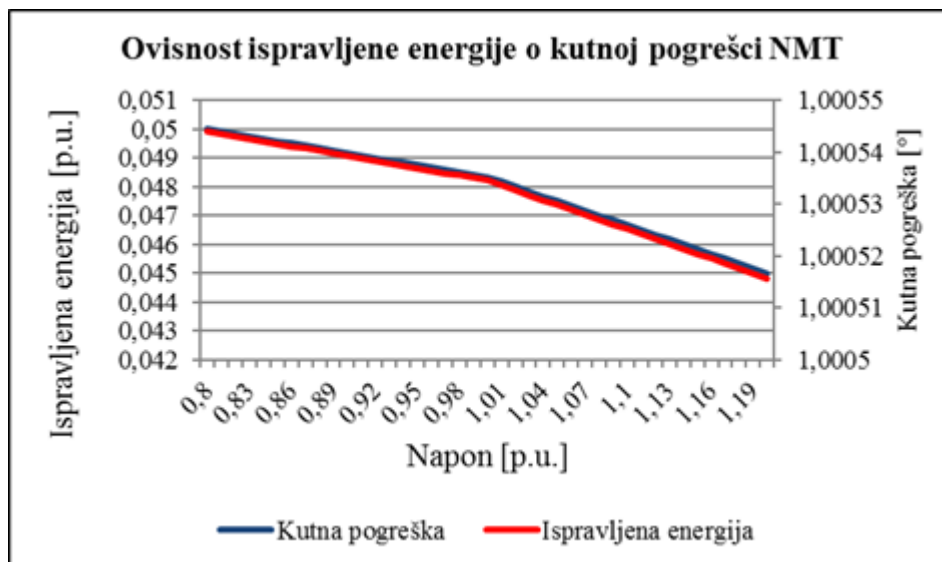


Slika 7.22. Utjecaj naponske pogreške (plava linija) naponskog mjernog transformatora na ispravljenu energiju (crvena linija)

Slika 7.22. prikazuje promjenu ispravljene energije  $E_{mj}$  iskazanu u *per unit* (p.u.) jedinicama odnosno normiranu prema izmjerenoj energiji u nazivnim uvjetima kod promjene naponske pogreške u cijelom radnom području primarnog napona na vodu iskazanog također u *per unit* (p.u.) jedinicama odnosno normiranog na nazivni napon. Iz slike se vidi da je naponska pogreška konstantna do nazivnog pogonskog napona te je i ispravljena energija konstantna. Iznad nazivnog napona naponska pogreška (plava linija) linearno pada, a ispravljena energija (crvena linija) linearno raste. Iste način prikazivanja koristi se i na slikama 7.23 – 7.27.

### 7.3.4.2. Utjecaj kutne pogreške naponskog mjernog transformatora

Osjetljivost ispravljene energije  $E_{mj}$  na kutnu pogrešku  $\delta_U$  ispitana je sukladno jednadžbi (6-9)(6-8). Promjena kutne pogreške naponskog mjernog transformatora opisana je jednadžbom (7-



Slika 7.23. Utjecaj kutne pogreške (plava linija) naponskog mjernog transformatora na ispravljenu energiju (crvena linija)

9).

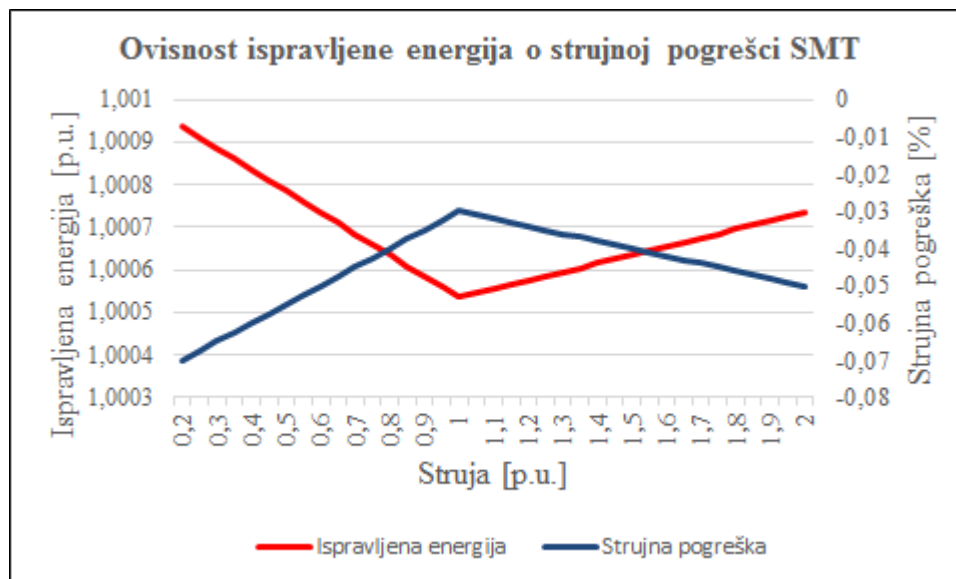
Slika 7.23. prikazuje promjenu ispravljene energije  $E_{mj}$  kod promjene kutne pogreške naponskog mjernog transformatora u cijelom radnom području primarnog napona na vodu. Iz slike se vidi da kutna pogreška i ispravljena energija padaju s porastom napona na vodu u cijelom radnom području.

### 7.3.4.3. Utjecaj strujne pogreške strujnog mjernog transformatora

Osjetljivost ispravljene energije  $E_{mj}$  na strujnu pogrešku  $p_I$  ispitana je sukladno jednadžbi (6-10)(6-8). Promjena strujne pogreške strujnog mjernog transformatora opisana je jednadžbom (7-

10).



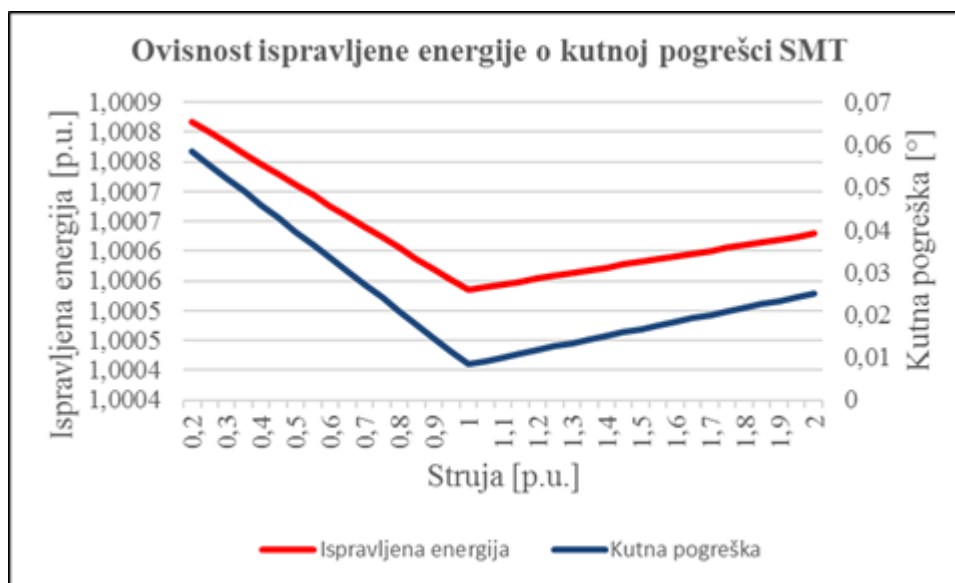


Slika 7.24. Utjecaj strujne pogreške (plava linija) strujnog mjernog transformatora na ispravljenu energiju (crvena linija)

Slika 7.24. prikazuje promjenu ispravljene energije  $E_{mj}$  kod promjene strujne pogreške strujnog mjernog transformatora u cijelom radnom području primarne struje na vodu. Iz slike se vidi da strujna pogreška raste do nazivne pogonske struje, a nakon toga pada. Ispravljena energija se ponaša obrnuto tj. pada do nazivne struja, a nakon toga linearno pada.

#### 7.3.4.4. Utjecaj kutne pogreške strujnog mjernog transformatora

Osjetljivost ispravljene energije  $E_{mj}$  na strujnu pogrešku  $\delta_I$  ispitana je sukladno jednadžbi (6-11)(6-8). Promjena strujne pogreške strujnog mjernog transformatora opisana je jednadžbom (7-11).

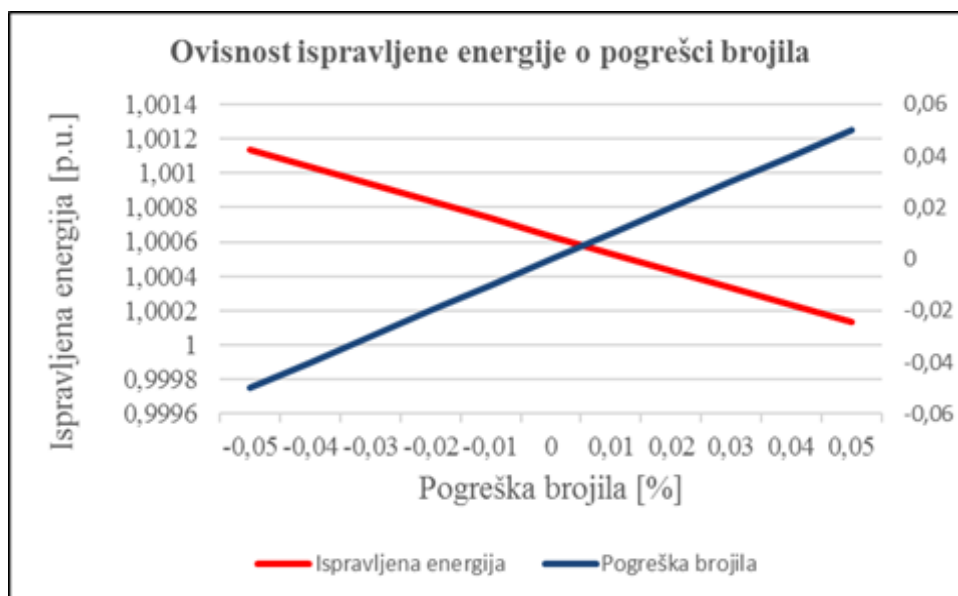


Slika 7.25. Utjecaj kutne pogreške (plava linija) strujnog mjernog transformatora na ispravljenu energiju (crvena linija)

Slika 7.25. prikazuje promjenu ispravljene energije  $E_{mj}^*$  kod promjene strujne pogreške strujnog mjernog transformatora u cijelom radnom području primarne struje na vodu. Iz slike se vidi da kutna pogreška struje pada do nazivne struje, a nakon toga raste. Ispravljena energija se ponaša jednako tj. pada linearno do nazivne struje, a nakon toga raste do kraja mjernog područja.

#### 7.3.4.5. Utjecaj pogreške brojila električne energije

Osjetljivost ispravljene energije  $E_{mj}^*$  na postotnu pogrešku brojila  $p_{BR\%}$  ispitana je sukladno jednadžbi (6-13)(6-8) u realnom rasponu pogrešaka od -0,05% do +0,05%.

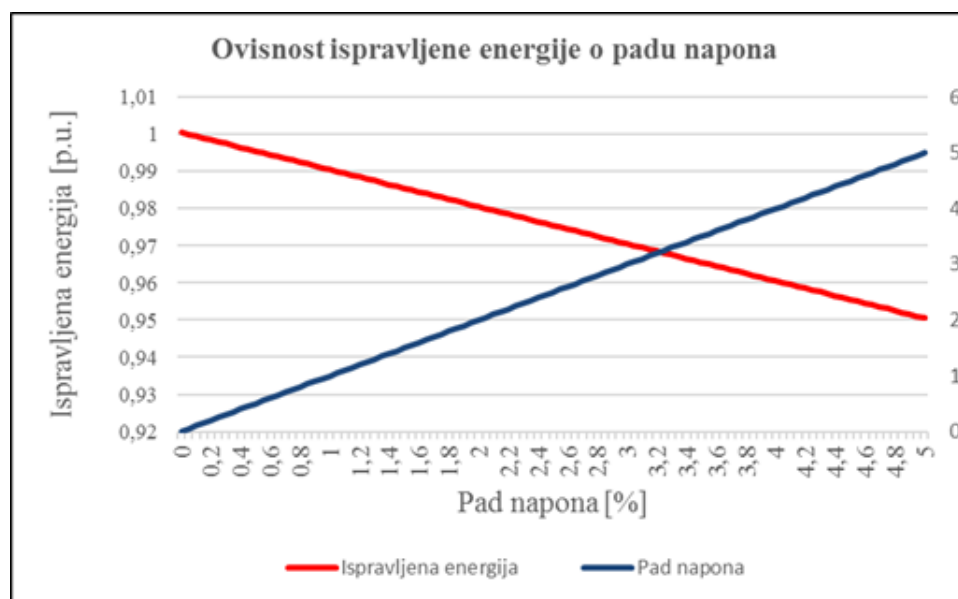


Slika 7.26. Utjecaj postotne pogreške (plava linija) brojila električne energije na ispravljenu energiju (crvena linija)

Slika 7.26. prikazuje obrnuto proporcionalni utjecaj pogreške brojila na ispravljenu energiju. Porastom pogreške u cijelom rasponu ispravljena energija linearno pada.

### 7.3.4.6. Utjecaj pada napona u naponskim mjernom krugovima

Osjetljivost ispravljene energije  $E'_{mj}$  na pad napona u naponskim mjernim krugovima  $p_{PN}$  ispitana je sukladno jednadžbi (6-13) (6-8) u rasponu mogućih padova napona od 0-5%.



Slika 7.27. Utjecaj pada napona (plava linija) u naponskim mjernim krugovima na ispravljenu energiju (crvena linija)

Slika 7.27. prikazuje obrnuto proporcionalni utjecaj pada napona na ispravljenu energiju. Porastom pada napona u cijelom rasponu ispravljena energija linearno pada.

### 7.3.4.7. Izračun indeksa osjetljivosti i elastičnosti ispravljene energije

Osjetljivost ispravljene električne energije  $E'_{mj}$  računata je prema jednadžbama (6-21) i (6-22). Osjetljivost pokazuje relativnu promjenu ovisne varijable pri promjeni neovisne varijable od najmanje do najveće vrijednosti. Rezultate u postocima prikazuje tablica 7.26.

Tablica 7.26. Osjetljivost ispravljene energije

| <b>Osjetljivost ispravljene energije na pogreške NMT</b>     |                         |                         |
|--|-------------------------|-------------------------|
| Interval   | $0,8U/U_N < x < 1U/U_N$ | $1U/U_N < x < 1,2U/U_N$ |
| $p_U$  | 0                       | 0,009989                |
| $\delta_U$   | -0,00094202             | -0,0018843              |
| <b>Osjetljivost ispravljene energije na pogreške SMT</b>     |                         |                         |
| Interval   | $0,2I/I_N < x < 1I/I_N$ | $1I/I_N < x < 2I/I_N$   |
| $p_I$  | -0,039976               | 0,019996                |
| $\delta_I$   | -0,028216               | 0,0094164               |
| <b>Osjetljivost ispravljene energije na pogreške brojila</b> |                         |                         |
| Interval   | -0,05% - +0,05%         |                         |
| $p_{BR\%}$   | -0,099887               |                         |
| <b>Osjetljivost ispravljene energije na pad napona</b>       |                         |                         |
| Interval   | 0 – 5%                  |                         |
| $p_{PN\%}$   | -4,9945                 |                         |

Predznaci postotne osjetljivosti se podudaraju sa trendovima promjene ispravljene energije prikazane prethodno na grafovima u sklopu analize osjetljivosti. Iz rezultata se vidi da ispravljena električna energija  $E'_{mj}$  najviše ovisi o padu napona u sekundarnim mjernim granama, i to obrnuto proporcionalno što znači da s većim padom napona ispravljena energija se smanjuje. Navedenu činjenicu treba uzeti u obzir prilikom projektiranja i izgradnje naponskih mjernih grana i težiti da pad napona bude što manji.

Elastičnost ispravljene električne energije  $E'_{mj}$  računata je prema jednadžbama (6-15) do (6-20). Elastičnost se računa kao omjer postotne promjene ovisne varijable i postotne promjene neovisne

varijable. Drugim riječima, računa se brzina promjene ovisne varijable, tj. nagib krivulje koja opisuje tu promjenu. Rezultate prikazuje tablica 7.27.

Tablica 7.27. Elastičnost ispravljene energije

| <b>Elastičnost ispravljene energije na pogreške NMT</b>     |                         |                         |
|---|-------------------------|-------------------------|
| Interval  | $0,8U/U_N < x < 1U/U_N$ | $1U/U_N < x < 1,2U/U_N$ |
| $p_U$   | 0                       | 0,00049945              |
| $\delta_U$  | -3,7681e-005            | -9,4215e-005            |
| <b>Elastičnost ispravljene energije na pogreške SMT</b>     |                         |                         |
| Interval  | $0,2I/I_N < x < 1I/I_N$ | $1I/I_N < x < 2I/I_N$   |
| $p_I$   | -9,994e-005             | 0,00019996              |
| $\delta_I$  | -7,054e-005             | 9,4164e-005             |
| <b>Elastičnost ispravljene energije na pogreške brojila</b> |                         |                         |
| Interval  | -0,05% - +0,05%         |                         |
| $p_{BR\%}$  | -0,00049943             |                         |
| <b>Elastičnost ispravljene energije na pad napona</b>       |                         |                         |
| Interval  | 0 – 5%                  |                         |
| $p_{PN\%}$  | -0,049945               |                         |

Rezultati prikazani u tablici pokazuju da je najbrža promjena ispravljene energije s promjenom pada napona u naponskim mjernim krugovima što se podudara s prethodnim rezultatima kod proračuna indeksa osjetljivosti. Navedenu činjenicu treba uzeti u obzir prilikom projektiranja i izgradnje naponskih mjernih grana i težiti da pad napona bude što manji. To se postiže tako da se u naponske mjerne krugove ugrađuje što manje uređaja, na obračunskim mjernim mjestima obično samo brojila električne energije i automatska zaštitna sklopka. S napretkom tehnologije elektromehanička brojila sve više izlaze iz uporabe, a zamjenjuju ih statička brojila koja imaju visokoimpedantne naponske ulaze i gotovo zanemarivu potrošnju energije što olakšava postizanje vrlo malog, gotovo zanemarivog pada napona.

U primjeru prikazanom u sklopu disertacije uspješno je postignut zanemarivi pad napona upravo zbog takve konfiguracije mjernih krugova što danas postaje redovita praksa kod svih obračunskih mjernih mjesta, a posebno kod međunarodne razmjene.

## 8. ZAKLJUČAK

U teorijskom dijelu disertacije prezentirane su općenito metode za izračun mjerne nesigurnosti prisutne u znanstvenoj literaturi i mjeriteljskoj praksi. Osnovni i najšire prihvaćeni dokument koji preporuča jedinstven i jednostavan način za izračun mjerne nesigurnosti je `Guide to the expression of uncertainty in measurement`. Dokument opisuje tzv. klasični način izračuna mjerne nesigurnosti koji se primjenjuje u mnogim znanstvenim područjima. Upravo zbog svoje jednostavnosti koja je omogućena zbog niza zanemarenja, ta metoda sadrži određene nedostatke. Najznačajniji su pretpostavka da su ulazne i izlazne veličine opisane normalnom ili  $t$  razdiobom te pretpostavka linearnog matematičkog modela mjernog procesa. Kao rezultat toga proizlazi da se kroz matematički model propagira ograničena količina informacija odnosno, točnije rečeno, samo srednja vrijednost i standardna devijacija izlazne veličine. Navedeni nedostaci u velikoj mjeri se nadoknađuju uporabom Monte Carlo metode za izračun mjerne nesigurnosti sukladno dokumentu `Evaluation of measurement data - Supplement 1 to the "Guide to the expression of uncertainty in measurement" – propagation of distributions using a Monte Carlo method, JCGM, 2008`. Ova metoda procjenjuje stvarnu razdiobu ulaznih vrijednosti u mjerni proces na temelju rezultata mjerenja, uzima zadani broj uzoraka i razdiobe te s njima ulazi u mjerni proces. Izlazna veličina sadrži jednak broj uzoraka te se može ponovno procijeniti razdioba izlazne veličine, ovisno o potrebama interpretacije rezultata. Na taj način prenosi se potpuna informacija s ulaznih na izlazne veličine. U istom dokumentu opisana je i adaptivna Monte Carlo metoda koja se temelji na istom načelu kao i Monte Carlo metoda s razlikom što se razdioba ulaznih vrijednosti ne uzorkuje s unaprijed zadanim brojem uzoraka nego se taj broj postupno povećava sve do statističke stabilizacije rezultata.

Praktični rezultati disertacije mogu se podijeliti u dvije cjeline. Prvi dio odnosi se na proračun otpora i gubitaka prijenosnog voda i izračun pripadajuće mjerne nesigurnosti. Za potrebe disertacije dostupni su rezultati mjerenja parametara 110 kV prijenosnog voda te rezultati mjerenja energije gubitaka na oba kraja voda. Mjerna nesigurnost otpora prijenosnog voda računata je s pomoću svih metoda za izračun mjerne nesigurnosti prikazanih u teorijskom dijelu disertacije. Rezultati pokazuju da se srednje vrijednosti otpora ne razlikuju značajno neovisno o odabranoj metodi. Međutim, u standardnim devijacijama odnosno ukupnoj mjernoj nesigurnosti postoje određene razlike. A tip mjerne nesigurnosti je rezultat statističke obrade rezultata mjerenja te ne unosi značajnu razliku u ukupnu nesigurnost dok se razlika u tretmanu B tipa očituje u različitoj ukupnoj nesigurnosti.

Energija prijenosnih gubitaka računata je na istom prijenosnom vodu za jedan cijeli mjesec. Gubici su računati s pomoću funkcije za izračun gubitaka ugrađene u suvremeno brojilo električne energije te kao razlika izmjerenih energija na krajevima prijenosnog voda. Rezultati pokazuju da su potonji gubici nešto veći od gubitaka izračunatih s pomoću brojila električne energije te se mogu smatrati prihvatljivijima prvenstveno zbog utjecaja atmosferskih prilika na gubitke voda. Naime, za potrebe izračuna energije gubitaka, u brojila električne energije upisuje se otpor prijenosnog voda kao konstanta što unosi pogreške zbog utjecaja atmosferskih prilika na otpor voda koji nisu uzeti u obzir.

Drugi dio praktičnih rezultata disertacije odnosi se na raspodjelu razmijenjene energije između operatora prijenosnih sustava uključujući i ispravak izmjerene energije za iznos poznatih sustavnih pogrešaka. Na temelju teorijske podloge u kojoj je prezentirana metodologija proveden je praktični proračun na primjeru 400 kV međunarodnog prijenosnog voda koji je odabran zbog velike količine prenesene energije čime metoda poprima na svojoj značajnosti. Prikazan je postupak ispravka razmijenjene energije i pripadajućih prijenosnih gubitaka za iznos sistematskih pogrešaka. Rezultati pokazuju da su se nakon ispravka mjerne nesigurnosti smanjile, a iznosi razmijenjene energije i gubitaka jednom operatoru smanjili, a drugome povećali. Drugim riječima, razmijenjena energija je raspodijeljena na pravedniji način što potvrđuje pretpostavku iznesenu u hipotezi disertacije. Isti postupak proveden je i za jedan cijeli mjesec te je prikazan financijski iskaz razmijenjene energije na temelju aktualnih cijena prijenosa električne energije koje se nude na tržištu za dan unaprijed. Rezultati pokazuju značajnu financijsku uštedu u slučaju kada se provede postupak ispravka razmijenjene energije i pripadajućih gubitaka.

Provedena je i analiza osjetljivosti matematičkog modela za ispravak razmijenjene energije na promjenu naponske i kutne pogreške naponskog mjernog transformatora, strujne i kutne pogreške strujnog mjernog transformatora, pogreške brojila te pada napona u naponskim mjernim krugovima. Izračunati su i indeksi elastičnosti i osjetljivosti. Rezultati pokazuju da ispravljena energija najviše ovisi i padu napona u naponskim mjernom krugovima. Ovakav rezultat potvrđuje i praktična nastojanja da se u naponske mjerne krugove na obračunskim mjernom mjestima ne priključuju drugi uređaji osim elektroničkog brojila električne energije koje ima visokoimpedantni naponski ulaz te na taj način predstavlja zanemariv teret naponskih mjernih grana i posljedično zanemariv utjecaj na izmjerenu energiju.

Prvi dio praktičnih rezultata prikazan je na 110 kV prijenosnom vodu isključivo zbog toga što su rezultati mjerenja parametara voda dostupni za takav vod. Na isti način proračun se može provesti i na 400 kV vodu kao i na bilo kojoj drugoj naponskoj razini. Drugi dio rezultata proveden je na 400 kV vodu prvenstveno zbog toga što je hrvatski elektroenergetski sustav koncipiran tako da se

većina međunarodne razmjene energije odvija preko 400 kV mreže. Velika količina energije koje se prenosi preko 400 kV vodova čini ovu metodu značajnom za primjenu na takvim vodovima iako se ista metoda može primijeniti na prijenosni vod bilo koje naponske razine.

Rezultati disertacije prikazuju značajnu tehničku i financijsku važnost propisivanja i primjene metode za ispravnu raspodjelu električne energije i pripadajućih gubitaka uključujući i postupak ispravaka izmjerenih vrijednosti za iznos sustavnih pogrešaka.

Mogućnosti nastavka prikazanog istraživanja mogu se podijeliti na dva područja. Prvo područje odnosi se na raspodjelu razmijenjene energije i gubitaka izračunatih s pomoću funkcije za mjerenje gubitaka ugrađene u brojilo električne energije. Ovako izračunati gubici, ako se istovremeno mjere na obje strane prijenosnog voda što je slučaj kod međunarodne razmjene, međusobno se razlikuju. Postavlja se pitanje koje od dva mjerenja je mjerodavno za obračun. U okviru disertacije je prikazano na koji način se takvi gubici računaju uključujući i razdiobu takvih gubitaka ako se računaju s pomoću Monte Carlo metode. U daljnjem istraživanju potrebno je odrediti metodu za raspodjelu takvih gubitaka uzimajući u obzir njihove razdiobe s ciljem da takva metoda bude pravedna odnosno da tako raspodijeljena energija i pripadajući gubici ne budu nikome od sudionika na štetu.

Drugo područje odnosi se na raspodjelu razmijenjene energije i pripadajućih gubitaka ako se mjerenje vrši na obje strane voda, a gubici se računaju kao razlika izmjerenih energija te se vrši ispravak izmjerenih vrijednosti za iznos sustavnih pogrešaka. U okviru disertacije prikazano je na koji način se ovakva metoda provodi. U daljnjem istraživanju je potrebno izraditi algoritam koji će ovu metodu automatizirati tj. omogućiti njezinu implementaciju u praktičnim svakodnevnim mjerenjima.



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## P. BROJČANI PODACI KORIŠTENI U PRORAČUNIMA

Tablica P.1. Rezultati mjerenja napona  $U$ , struje  $I$  i kuta  $\varphi$  između struje i napona

| Redni broj | Napon U1 | Napon U2 | Napon U3 | Struja I1 | Struja I2 | Struja I3 | Kut phi1 | Kut phi2 | Kut phi3 |
|------------|----------|----------|----------|-----------|-----------|-----------|----------|----------|----------|
| 1          | 30,8668  | 28,5411  | 30,5174  | 1,9830    | 2,0018    | 2,0020    | 68,3237  | 68,3951  | 66,3661  |
| 2          | 30,8532  | 28,5479  | 30,5222  | 1,9824    | 2,0019    | 2,0019    | 68,2787  | 68,3827  | 66,3638  |
| 3          | 30,8549  | 28,5775  | 30,5012  | 1,9851    | 2,0003    | 2,0021    | 68,3679  | 68,4134  | 66,3251  |
| 4          | 30,8549  | 28,5775  | 30,5012  | 1,9851    | 2,0003    | 2,0021    | 68,3679  | 68,4134  | 66,3251  |
| 5          | 30,9693  | 28,5555  | 30,4919  | 1,9873    | 2,0006    | 2,0046    | 68,2966  | 68,3470  | 66,3914  |
| 6          | 30,9693  | 28,5555  | 30,4919  | 1,9873    | 2,0006    | 2,0046    | 68,2966  | 68,3470  | 66,3914  |
| 7          | 30,9693  | 28,5555  | 30,4919  | 1,9873    | 2,0006    | 2,0046    | 68,2966  | 68,3470  | 66,3914  |
| 8          | 30,9242  | 28,5700  | 30,5159  | 1,9886    | 2,0017    | 2,0017    | 68,2927  | 68,3722  | 66,3677  |
| 9          | 30,9242  | 28,5700  | 30,5159  | 1,9886    | 2,0017    | 2,0017    | 68,2927  | 68,3722  | 66,3677  |
| 10         | 30,8816  | 28,5566  | 30,5253  | 1,9855    | 2,0023    | 2,0019    | 68,2829  | 68,3840  | 66,3660  |
| 11         | 30,8816  | 28,5566  | 30,5253  | 1,9855    | 2,0023    | 2,0019    | 68,2829  | 68,3840  | 66,3660  |
| 12         | 30,8816  | 28,5566  | 30,5253  | 1,9855    | 2,0023    | 2,0019    | 68,2829  | 68,3840  | 66,3660  |
| 13         | 30,8509  | 28,5468  | 30,5216  | 1,9818    | 2,0021    | 2,0025    | 68,2576  | 68,3854  | 66,3753  |
| 14         | 30,8509  | 28,5468  | 30,5216  | 1,9818    | 2,0021    | 2,0025    | 68,2576  | 68,3854  | 66,3753  |
| 15         | 30,8509  | 28,5468  | 30,5216  | 1,9818    | 2,0021    | 2,0025    | 68,2576  | 68,3854  | 66,3753  |
| 16         | 30,8800  | 28,5847  | 30,5129  | 1,9863    | 2,0020    | 2,0017    | 68,3123  | 68,3910  | 66,3526  |
| 17         | 30,8800  | 28,5847  | 30,5129  | 1,9863    | 2,0020    | 2,0017    | 68,3123  | 68,3910  | 66,3526  |
| 18         | 30,9302  | 28,5546  | 30,5141  | 1,9852    | 2,0027    | 2,0034    | 68,3074  | 68,3623  | 66,3732  |
| 19         | 30,9302  | 28,5546  | 30,5141  | 1,9852    | 2,0027    | 2,0034    | 68,3074  | 68,3623  | 66,3732  |
| 20         | 30,9302  | 28,5546  | 30,5141  | 1,9852    | 2,0027    | 2,0034    | 68,3074  | 68,3623  | 66,3732  |
| 21         | 30,9548  | 28,5566  | 30,5207  | 1,9872    | 2,0037    | 2,0030    | 68,3076  | 68,3545  | 66,3841  |
| 22         | 30,9548  | 28,5566  | 30,5207  | 1,9872    | 2,0037    | 2,0030    | 68,3076  | 68,3545  | 66,3841  |
| 23         | 30,9548  | 28,5566  | 30,5207  | 1,9872    | 2,0037    | 2,0030    | 68,3076  | 68,3545  | 66,3841  |
| 24         | 30,9510  | 28,5692  | 30,4901  | 1,9864    | 2,0014    | 2,0044    | 68,3249  | 68,3474  | 66,3624  |
| 25         | 30,9510  | 28,5692  | 30,4901  | 1,9864    | 2,0014    | 2,0044    | 68,3249  | 68,3474  | 66,3624  |
| 26         | 30,9510  | 28,5692  | 30,4901  | 1,9864    | 2,0014    | 2,0044    | 68,3249  | 68,3474  | 66,3624  |
| 27         | 30,8613  | 28,5838  | 30,4840  | 1,9829    | 2,0004    | 2,0036    | 68,3631  | 68,3914  | 66,3258  |
| 28         | 30,8613  | 28,5838  | 30,4840  | 1,9829    | 2,0004    | 2,0036    | 68,3631  | 68,3914  | 66,3258  |
| 29         | 30,9441  | 28,5880  | 30,4856  | 1,9883    | 2,0009    | 2,0036    | 68,3655  | 68,3755  | 66,3407  |
| 30         | 30,9441  | 28,5880  | 30,4856  | 1,9883    | 2,0009    | 2,0036    | 68,3655  | 68,3755  | 66,3407  |
| 31         | 30,9441  | 28,5880  | 30,4856  | 1,9883    | 2,0009    | 2,0036    | 68,3655  | 68,3755  | 66,3407  |
| 32         | 30,8710  | 28,5915  | 30,5018  | 1,9858    | 2,0011    | 2,0023    | 68,2650  | 68,3742  | 66,3499  |
| 33         | 30,8710  | 28,5915  | 30,5018  | 1,9858    | 2,0011    | 2,0023    | 68,2650  | 68,3742  | 66,3499  |
| 34         | 30,9039  | 28,5779  | 30,5207  | 1,9870    | 2,0027    | 2,0017    | 68,3640  | 68,3963  | 66,3500  |
| 35         | 30,9324  | 28,5919  | 30,5044  | 1,9895    | 2,0020    | 2,0023    | 68,3746  | 68,3871  | 66,3387  |
| 36         | 30,9324  | 28,5919  | 30,5044  | 1,9895    | 2,0020    | 2,0023    | 68,3746  | 68,3871  | 66,3387  |
| 37         | 30,9765  | 28,5926  | 30,4933  | 1,9910    | 2,0017    | 2,0030    | 68,2763  | 68,3380  | 66,3851  |

|    |         |         |         |        |        |        |         |         |         |
|----|---------|---------|---------|--------|--------|--------|---------|---------|---------|
| 38 | 30,9765 | 28,5926 | 30,4933 | 1,9910 | 2,0017 | 2,0030 | 68,2763 | 68,3380 | 66,3851 |
| 39 | 30,9765 | 28,5926 | 30,4933 | 1,9910 | 2,0017 | 2,0030 | 68,2763 | 68,3380 | 66,3851 |
| 40 | 30,9168 | 28,5932 | 30,5091 | 1,9891 | 2,0025 | 2,0022 | 68,3078 | 68,3656 | 66,3712 |
| 41 | 30,9145 | 28,5711 | 30,5277 | 1,9873 | 2,0038 | 2,0022 | 68,3286 | 68,3758 | 66,3797 |
| 42 | 30,9496 | 28,5633 | 30,5086 | 1,9864 | 2,0030 | 2,0038 | 68,3933 | 68,3773 | 66,3693 |
| 43 | 30,9496 | 28,5633 | 30,5086 | 1,9864 | 2,0030 | 2,0038 | 68,3933 | 68,3773 | 66,3693 |
| 44 | 30,9496 | 28,5633 | 30,5086 | 1,9864 | 2,0030 | 2,0038 | 68,3933 | 68,3773 | 66,3693 |
| 45 | 30,8495 | 28,5873 | 30,5191 | 1,9853 | 2,0027 | 2,0016 | 68,3382 | 68,4032 | 66,3498 |
| 46 | 30,8495 | 28,5873 | 30,5191 | 1,9853 | 2,0027 | 2,0016 | 68,3382 | 68,4032 | 66,3498 |
| 47 | 30,8495 | 28,5873 | 30,5191 | 1,9853 | 2,0027 | 2,0016 | 68,3382 | 68,4032 | 66,3498 |
| 48 | 30,9048 | 28,5953 | 30,4929 | 1,9874 | 2,0013 | 2,0032 | 68,3896 | 68,3864 | 66,3370 |
| 49 | 30,9048 | 28,5953 | 30,4929 | 1,9874 | 2,0013 | 2,0032 | 68,3896 | 68,3864 | 66,3370 |
| 50 | 30,9048 | 28,5953 | 30,4929 | 1,9874 | 2,0013 | 2,0032 | 68,3896 | 68,3864 | 66,3370 |
| 51 | 30,9520 | 28,5624 | 30,5239 | 1,9877 | 2,0039 | 2,0030 | 68,3783 | 68,3676 | 66,3874 |
| 52 | 30,9520 | 28,5624 | 30,5239 | 1,9877 | 2,0039 | 2,0030 | 68,3783 | 68,3676 | 66,3874 |
| 53 | 30,9685 | 28,5875 | 30,4892 | 1,9893 | 2,0017 | 2,0042 | 68,3305 | 68,3419 | 66,3780 |
| 54 | 30,9685 | 28,5875 | 30,4892 | 1,9893 | 2,0017 | 2,0042 | 68,3305 | 68,3419 | 66,3780 |
| 55 | 30,9685 | 28,5875 | 30,4892 | 1,9893 | 2,0017 | 2,0042 | 68,3305 | 68,3419 | 66,3780 |
| 56 | 30,8668 | 28,5710 | 30,5271 | 1,9842 | 2,0034 | 2,0018 | 68,2362 | 68,3643 | 66,3789 |
| 57 | 30,8668 | 28,5710 | 30,5271 | 1,9842 | 2,0034 | 2,0018 | 68,2362 | 68,3643 | 66,3789 |
| 58 | 30,8668 | 28,5710 | 30,5271 | 1,9842 | 2,0034 | 2,0018 | 68,2362 | 68,3643 | 66,3789 |
| 59 | 30,9052 | 28,5988 | 30,4943 | 1,9876 | 2,0015 | 2,0031 | 68,3730 | 68,3785 | 66,3497 |
| 60 | 30,9052 | 28,5988 | 30,4943 | 1,9876 | 2,0015 | 2,0031 | 68,3730 | 68,3785 | 66,3497 |
| 61 | 30,9052 | 28,5988 | 30,4943 | 1,9876 | 2,0015 | 2,0031 | 68,3730 | 68,3785 | 66,3497 |
| 62 | 30,9667 | 28,5836 | 30,4912 | 1,9886 | 2,0019 | 2,0047 | 68,3373 | 68,3312 | 66,3794 |
| 63 | 30,9667 | 28,5836 | 30,4912 | 1,9886 | 2,0019 | 2,0047 | 68,3373 | 68,3312 | 66,3794 |
| 64 | 30,9667 | 28,5836 | 30,4912 | 1,9886 | 2,0019 | 2,0047 | 68,3373 | 68,3312 | 66,3794 |
| 65 | 30,9006 | 28,5955 | 30,5130 | 1,9881 | 2,0022 | 2,0023 | 68,3072 | 68,3656 | 66,3631 |
| 66 | 30,9006 | 28,5955 | 30,5130 | 1,9881 | 2,0022 | 2,0023 | 68,3072 | 68,3656 | 66,3631 |
| 67 | 30,9006 | 28,5955 | 30,5130 | 1,9881 | 2,0022 | 2,0023 | 68,3072 | 68,3656 | 66,3631 |
| 68 | 31,0188 | 28,5982 | 30,4957 | 1,9934 | 2,0022 | 2,0037 | 68,3616 | 68,3383 | 66,3813 |
| 69 | 31,0188 | 28,5982 | 30,4957 | 1,9934 | 2,0022 | 2,0037 | 68,3616 | 68,3383 | 66,3813 |
| 70 | 31,0188 | 28,5982 | 30,4957 | 1,9934 | 2,0022 | 2,0037 | 68,3616 | 68,3383 | 66,3813 |
| 71 | 30,9625 | 28,5986 | 30,4968 | 1,9904 | 2,0022 | 2,0031 | 68,3644 | 68,3594 | 66,3675 |
| 72 | 30,9625 | 28,5986 | 30,4968 | 1,9904 | 2,0022 | 2,0031 | 68,3644 | 68,3594 | 66,3675 |
| 73 | 30,9625 | 28,5986 | 30,4968 | 1,9904 | 2,0022 | 2,0031 | 68,3644 | 68,3594 | 66,3675 |
| 74 | 30,9325 | 28,5998 | 30,5066 | 1,9895 | 2,0023 | 2,0028 | 68,3481 | 68,3599 | 66,3587 |
| 75 | 30,9325 | 28,5998 | 30,5066 | 1,9895 | 2,0023 | 2,0028 | 68,3481 | 68,3599 | 66,3587 |
| 76 | 30,9325 | 28,5998 | 30,5066 | 1,9895 | 2,0023 | 2,0028 | 68,3481 | 68,3599 | 66,3587 |
| 77 | 30,9293 | 28,5754 | 30,5291 | 1,9878 | 2,0041 | 2,0026 | 68,3604 | 68,3829 | 66,3775 |
| 78 | 30,9293 | 28,5754 | 30,5291 | 1,9878 | 2,0041 | 2,0026 | 68,3604 | 68,3829 | 66,3775 |
| 79 | 30,9293 | 28,5754 | 30,5291 | 1,9878 | 2,0041 | 2,0026 | 68,3604 | 68,3829 | 66,3775 |
| 80 | 30,9843 | 28,5655 | 30,5109 | 1,9884 | 2,0038 | 2,0044 | 68,3437 | 68,3382 | 66,4036 |

|     |         |         |         |        |        |        |         |         |         |
|-----|---------|---------|---------|--------|--------|--------|---------|---------|---------|
| 81  | 30,9843 | 28,5655 | 30,5109 | 1,9884 | 2,0038 | 2,0044 | 68,3437 | 68,3382 | 66,4036 |
| 82  | 30,9843 | 28,5655 | 30,5109 | 1,9884 | 2,0038 | 2,0044 | 68,3437 | 68,3382 | 66,4036 |
| 83  | 30,9172 | 28,5967 | 30,4902 | 1,9875 | 2,0012 | 2,0038 | 68,3817 | 68,3707 | 66,3432 |
| 84  | 31,0015 | 28,5660 | 30,5171 | 1,9892 | 2,0042 | 2,0045 | 68,3092 | 68,3170 | 66,4192 |
| 85  | 31,0015 | 28,5660 | 30,5171 | 1,9892 | 2,0042 | 2,0045 | 68,3092 | 68,3170 | 66,4192 |
| 86  | 31,0015 | 28,5660 | 30,5171 | 1,9892 | 2,0042 | 2,0045 | 68,3092 | 68,3170 | 66,4192 |
| 87  | 31,0055 | 28,5718 | 30,5032 | 1,9896 | 2,0029 | 2,0050 | 68,2946 | 68,3137 | 66,4007 |
| 88  | 31,0055 | 28,5718 | 30,5032 | 1,9896 | 2,0029 | 2,0050 | 68,2946 | 68,3137 | 66,4007 |
| 89  | 31,0055 | 28,5718 | 30,5032 | 1,9896 | 2,0029 | 2,0050 | 68,2946 | 68,3137 | 66,4007 |
| 90  | 30,9418 | 28,5889 | 30,5243 | 1,9898 | 2,0036 | 2,0024 | 68,4413 | 68,4002 | 66,3497 |
| 91  | 30,9418 | 28,5889 | 30,5243 | 1,9898 | 2,0036 | 2,0024 | 68,4413 | 68,4002 | 66,3497 |
| 92  | 30,9418 | 28,5889 | 30,5243 | 1,9898 | 2,0036 | 2,0024 | 68,4413 | 68,4002 | 66,3497 |
| 93  | 30,9846 | 28,5676 | 30,5265 | 1,9892 | 2,0045 | 2,0036 | 68,4061 | 68,3690 | 66,3827 |
| 94  | 31,0399 | 28,5651 | 30,5185 | 1,9914 | 2,0043 | 2,0045 | 68,3645 | 68,3346 | 66,4142 |
| 95  | 31,0399 | 28,5651 | 30,5185 | 1,9914 | 2,0043 | 2,0045 | 68,3645 | 68,3346 | 66,4142 |
| 96  | 30,9976 | 28,5958 | 30,4918 | 1,9912 | 2,0023 | 2,0045 | 68,4406 | 68,3648 | 66,3594 |
| 97  | 30,9976 | 28,5958 | 30,4918 | 1,9912 | 2,0023 | 2,0045 | 68,4406 | 68,3648 | 66,3594 |
| 98  | 30,9976 | 28,5958 | 30,4918 | 1,9912 | 2,0023 | 2,0045 | 68,4406 | 68,3648 | 66,3594 |
| 99  | 30,9603 | 28,5784 | 30,4977 | 1,9873 | 2,0025 | 2,0046 | 68,4010 | 68,3595 | 66,3569 |
| 100 | 30,9603 | 28,5784 | 30,4977 | 1,9873 | 2,0025 | 2,0046 | 68,4010 | 68,3595 | 66,3569 |
| 101 | 30,9603 | 28,5784 | 30,4977 | 1,9873 | 2,0025 | 2,0046 | 68,4010 | 68,3595 | 66,3569 |
| 102 | 30,9691 | 28,5832 | 30,4964 | 1,9884 | 2,0023 | 2,0046 | 68,4169 | 68,3592 | 66,3570 |
| 103 | 30,9691 | 28,5832 | 30,4964 | 1,9884 | 2,0023 | 2,0046 | 68,4169 | 68,3592 | 66,3570 |
| 104 | 30,9691 | 28,5832 | 30,4964 | 1,9884 | 2,0023 | 2,0046 | 68,4169 | 68,3592 | 66,3570 |
| 105 | 31,0007 | 28,5981 | 30,5169 | 1,9932 | 2,0036 | 2,0027 | 68,3310 | 68,3427 | 66,3869 |
| 106 | 31,0007 | 28,5981 | 30,5169 | 1,9932 | 2,0036 | 2,0027 | 68,3310 | 68,3427 | 66,3869 |
| 107 | 31,0007 | 28,5981 | 30,5169 | 1,9932 | 2,0036 | 2,0027 | 68,3310 | 68,3427 | 66,3869 |
| 108 | 30,9895 | 28,5719 | 30,5090 | 1,9888 | 2,0036 | 2,0048 | 68,3722 | 68,3480 | 66,3885 |
| 109 | 30,9503 | 28,6034 | 30,5027 | 1,9905 | 2,0024 | 2,0034 | 68,3411 | 68,3576 | 66,3649 |
| 110 | 30,9503 | 28,6034 | 30,5027 | 1,9905 | 2,0024 | 2,0034 | 68,3411 | 68,3576 | 66,3649 |
| 111 | 30,9495 | 28,5914 | 30,5261 | 1,9904 | 2,0039 | 2,0024 | 68,4392 | 68,3996 | 66,3535 |
| 112 | 30,9495 | 28,5914 | 30,5261 | 1,9904 | 2,0039 | 2,0024 | 68,4392 | 68,3996 | 66,3535 |
| 113 | 30,9199 | 28,5718 | 30,5287 | 1,9861 | 2,0042 | 2,0031 | 68,4003 | 68,3836 | 66,3602 |
| 114 | 30,9199 | 28,5718 | 30,5287 | 1,9861 | 2,0042 | 2,0031 | 68,4003 | 68,3836 | 66,3602 |
| 115 | 30,9199 | 28,5718 | 30,5287 | 1,9861 | 2,0042 | 2,0031 | 68,4003 | 68,3836 | 66,3602 |
| 116 | 30,9406 | 28,5868 | 30,4950 | 1,9873 | 2,0020 | 2,0047 | 68,4452 | 68,3780 | 66,3521 |
| 117 | 30,9406 | 28,5868 | 30,4950 | 1,9873 | 2,0020 | 2,0047 | 68,4452 | 68,3780 | 66,3521 |
| 118 | 30,9406 | 28,5868 | 30,4950 | 1,9873 | 2,0020 | 2,0047 | 68,4452 | 68,3780 | 66,3521 |
| 119 | 30,8772 | 28,5883 | 30,4917 | 1,9847 | 2,0010 | 2,0039 | 68,3587 | 68,3852 | 66,3346 |
| 120 | 30,8772 | 28,5883 | 30,4917 | 1,9847 | 2,0010 | 2,0039 | 68,3587 | 68,3852 | 66,3346 |
| 121 | 30,8772 | 28,5883 | 30,4917 | 1,9847 | 2,0010 | 2,0039 | 68,3587 | 68,3852 | 66,3346 |
| 122 | 30,9045 | 28,5945 | 30,5090 | 1,9881 | 2,0017 | 2,0027 | 68,3712 | 68,3849 | 66,3389 |
| 123 | 30,9045 | 28,5945 | 30,5090 | 1,9881 | 2,0017 | 2,0027 | 68,3712 | 68,3849 | 66,3389 |

|     |         |         |         |        |        |        |         |         |         |
|-----|---------|---------|---------|--------|--------|--------|---------|---------|---------|
| 124 | 30,9045 | 28,5945 | 30,5090 | 1,9881 | 2,0017 | 2,0027 | 68,3712 | 68,3849 | 66,3389 |
| 125 | 30,9265 | 28,5932 | 30,4947 | 1,9883 | 2,0012 | 2,0036 | 68,4005 | 68,3827 | 66,3430 |
| 126 | 30,9265 | 28,5932 | 30,4947 | 1,9883 | 2,0012 | 2,0036 | 68,4005 | 68,3827 | 66,3430 |
| 127 | 30,9265 | 28,5932 | 30,4947 | 1,9883 | 2,0012 | 2,0036 | 68,4005 | 68,3827 | 66,3430 |
| 128 | 30,9749 | 28,5716 | 30,5337 | 1,9907 | 2,0042 | 2,0027 | 68,3440 | 68,3544 | 66,3906 |
| 129 | 30,9749 | 28,5716 | 30,5337 | 1,9907 | 2,0042 | 2,0027 | 68,3440 | 68,3544 | 66,3906 |
| 130 | 30,9749 | 28,5716 | 30,5337 | 1,9907 | 2,0042 | 2,0027 | 68,3440 | 68,3544 | 66,3906 |
| 131 | 30,8980 | 28,5877 | 30,5240 | 1,9881 | 2,0027 | 2,0021 | 68,2839 | 68,3675 | 66,3666 |
| 132 | 30,8980 | 28,5877 | 30,5240 | 1,9881 | 2,0027 | 2,0021 | 68,2839 | 68,3675 | 66,3666 |
| 133 | 30,8977 | 28,5786 | 30,5314 | 1,9869 | 2,0035 | 2,0022 | 68,3763 | 68,4026 | 66,3529 |
| 134 | 30,8977 | 28,5786 | 30,5314 | 1,9869 | 2,0035 | 2,0022 | 68,3763 | 68,4026 | 66,3529 |
| 135 | 30,8977 | 28,5786 | 30,5314 | 1,9869 | 2,0035 | 2,0022 | 68,3763 | 68,4026 | 66,3529 |
| 136 | 30,9305 | 28,5856 | 30,5264 | 1,9895 | 2,0032 | 2,0025 | 68,3315 | 68,3686 | 66,3771 |
| 137 | 30,9305 | 28,5856 | 30,5264 | 1,9895 | 2,0032 | 2,0025 | 68,3315 | 68,3686 | 66,3771 |
| 138 | 30,9305 | 28,5856 | 30,5264 | 1,9895 | 2,0032 | 2,0025 | 68,3315 | 68,3686 | 66,3771 |
| 139 | 30,9815 | 28,5606 | 30,5324 | 1,9891 | 2,0042 | 2,0038 | 68,3518 | 68,3455 | 66,4133 |
| 140 | 30,9815 | 28,5606 | 30,5324 | 1,9891 | 2,0042 | 2,0038 | 68,3518 | 68,3455 | 66,4133 |
| 141 | 30,9752 | 28,5771 | 30,5001 | 1,9886 | 2,0022 | 2,0050 | 68,3745 | 68,3581 | 66,3737 |
| 142 | 30,9752 | 28,5771 | 30,5001 | 1,9886 | 2,0022 | 2,0050 | 68,3745 | 68,3581 | 66,3737 |
| 143 | 30,9752 | 28,5771 | 30,5001 | 1,9886 | 2,0022 | 2,0050 | 68,3745 | 68,3581 | 66,3737 |
| 144 | 30,9764 | 28,5633 | 30,5335 | 1,9892 | 2,0042 | 2,0037 | 68,2613 | 68,3271 | 66,4161 |
| 145 | 30,9764 | 28,5633 | 30,5335 | 1,9892 | 2,0042 | 2,0037 | 68,2613 | 68,3271 | 66,4161 |
| 146 | 30,9764 | 28,5633 | 30,5335 | 1,9892 | 2,0042 | 2,0037 | 68,2613 | 68,3271 | 66,4161 |
| 147 | 30,9617 | 28,5693 | 30,5375 | 1,9894 | 2,0041 | 2,0033 | 68,3177 | 68,3538 | 66,3877 |
| 148 | 30,9617 | 28,5693 | 30,5375 | 1,9894 | 2,0041 | 2,0033 | 68,3177 | 68,3538 | 66,3877 |
| 149 | 30,9617 | 28,5693 | 30,5375 | 1,9894 | 2,0041 | 2,0033 | 68,3177 | 68,3538 | 66,3877 |
| 150 | 30,9744 | 28,5923 | 30,4980 | 1,9902 | 2,0018 | 2,0044 | 68,3642 | 68,3698 | 66,3633 |
| 151 | 30,9744 | 28,5923 | 30,4980 | 1,9902 | 2,0018 | 2,0044 | 68,3642 | 68,3698 | 66,3633 |
| 152 | 30,9362 | 28,5939 | 30,4988 | 1,9883 | 2,0015 | 2,0044 | 68,3425 | 68,3598 | 66,3710 |
| 153 | 30,9362 | 28,5939 | 30,4988 | 1,9883 | 2,0015 | 2,0044 | 68,3425 | 68,3598 | 66,3710 |
| 154 | 31,0551 | 28,5753 | 30,5055 | 1,9925 | 2,0029 | 2,0057 | 68,3624 | 68,3197 | 66,3947 |
| 155 | 31,0551 | 28,5753 | 30,5055 | 1,9925 | 2,0029 | 2,0057 | 68,3624 | 68,3197 | 66,3947 |
| 156 | 31,0551 | 28,5753 | 30,5055 | 1,9925 | 2,0029 | 2,0057 | 68,3624 | 68,3197 | 66,3947 |
| 157 | 30,9413 | 28,5692 | 30,5114 | 1,9862 | 2,0027 | 2,0049 | 68,3769 | 68,3638 | 66,3718 |
| 158 | 30,9413 | 28,5692 | 30,5114 | 1,9862 | 2,0027 | 2,0049 | 68,3769 | 68,3638 | 66,3718 |
| 159 | 31,0238 | 28,5643 | 30,5358 | 1,9914 | 2,0047 | 2,0041 | 68,3593 | 68,3350 | 66,4136 |
| 160 | 31,0238 | 28,5643 | 30,5358 | 1,9914 | 2,0047 | 2,0041 | 68,3593 | 68,3350 | 66,4136 |
| 161 | 31,0238 | 28,5643 | 30,5358 | 1,9914 | 2,0047 | 2,0041 | 68,3593 | 68,3350 | 66,4136 |
| 162 | 30,9895 | 28,5750 | 30,5397 | 1,9912 | 2,0048 | 2,0031 | 68,3618 | 68,3639 | 66,4010 |
| 163 | 30,9895 | 28,5750 | 30,5397 | 1,9912 | 2,0048 | 2,0031 | 68,3618 | 68,3639 | 66,4010 |
| 164 | 30,9895 | 28,5750 | 30,5397 | 1,9912 | 2,0048 | 2,0031 | 68,3618 | 68,3639 | 66,4010 |
| 165 | 30,9640 | 28,5669 | 30,5374 | 1,9888 | 2,0044 | 2,0038 | 68,4153 | 68,3771 | 66,3714 |
| 166 | 30,9640 | 28,5669 | 30,5374 | 1,9888 | 2,0044 | 2,0038 | 68,4153 | 68,3771 | 66,3714 |

|     |         |         |         |        |        |        |         |         |         |
|-----|---------|---------|---------|--------|--------|--------|---------|---------|---------|
| 167 | 30,9585 | 28,5640 | 30,5280 | 1,9875 | 2,0040 | 2,0044 | 68,3668 | 68,3488 | 66,3819 |
| 168 | 30,9585 | 28,5640 | 30,5280 | 1,9875 | 2,0040 | 2,0044 | 68,3668 | 68,3488 | 66,3819 |
| 169 | 30,9585 | 28,5640 | 30,5280 | 1,9875 | 2,0040 | 2,0044 | 68,3668 | 68,3488 | 66,3819 |
| 170 | 30,9811 | 28,5826 | 30,5049 | 1,9888 | 2,0023 | 2,0051 | 68,3708 | 68,3565 | 66,3739 |
| 171 | 30,9811 | 28,5826 | 30,5049 | 1,9888 | 2,0023 | 2,0051 | 68,3708 | 68,3565 | 66,3739 |
| 172 | 30,9890 | 28,5710 | 30,5117 | 1,9885 | 2,0031 | 2,0050 | 68,3009 | 68,3357 | 66,3941 |
| 173 | 30,9890 | 28,5710 | 30,5117 | 1,9885 | 2,0031 | 2,0050 | 68,3009 | 68,3357 | 66,3941 |
| 174 | 31,0002 | 28,5775 | 30,5076 | 1,9897 | 2,0029 | 2,0055 | 68,4067 | 68,3581 | 66,3771 |
| 175 | 31,0002 | 28,5775 | 30,5076 | 1,9897 | 2,0029 | 2,0055 | 68,4067 | 68,3581 | 66,3771 |
| 176 | 31,0002 | 28,5775 | 30,5076 | 1,9897 | 2,0029 | 2,0055 | 68,4067 | 68,3581 | 66,3771 |
| 177 | 30,8608 | 28,5713 | 30,5380 | 1,9837 | 2,0039 | 2,0026 | 68,3579 | 68,3967 | 66,3589 |
| 178 | 30,8608 | 28,5713 | 30,5380 | 1,9837 | 2,0039 | 2,0026 | 68,3579 | 68,3967 | 66,3589 |
| 179 | 30,8608 | 28,5713 | 30,5380 | 1,9837 | 2,0039 | 2,0026 | 68,3579 | 68,3967 | 66,3589 |
| 180 | 30,9859 | 28,5661 | 30,5214 | 1,9883 | 2,0035 | 2,0053 | 68,3873 | 68,3610 | 66,3875 |
| 181 | 30,9859 | 28,5661 | 30,5214 | 1,9883 | 2,0035 | 2,0053 | 68,3873 | 68,3610 | 66,3875 |
| 182 | 30,9075 | 28,5774 | 30,5083 | 1,9846 | 2,0022 | 2,0048 | 68,3823 | 68,3820 | 66,3550 |
| 183 | 30,9075 | 28,5774 | 30,5083 | 1,9846 | 2,0022 | 2,0048 | 68,3823 | 68,3820 | 66,3550 |
| 184 | 30,9075 | 28,5774 | 30,5083 | 1,9846 | 2,0022 | 2,0048 | 68,3823 | 68,3820 | 66,3550 |
| 185 | 30,9561 | 28,5736 | 30,5408 | 1,9892 | 2,0044 | 2,0034 | 68,2990 | 68,3530 | 66,3854 |
| 186 | 30,9561 | 28,5736 | 30,5408 | 1,9892 | 2,0044 | 2,0034 | 68,2990 | 68,3530 | 66,3854 |
| 187 | 30,9561 | 28,5736 | 30,5408 | 1,9892 | 2,0044 | 2,0034 | 68,2990 | 68,3530 | 66,3854 |
| 188 | 30,9938 | 28,5729 | 30,5179 | 1,9892 | 2,0037 | 2,0053 | 68,3572 | 68,3448 | 66,3910 |
| 189 | 30,9938 | 28,5729 | 30,5179 | 1,9892 | 2,0037 | 2,0053 | 68,3572 | 68,3448 | 66,3910 |
| 190 | 30,9938 | 28,5729 | 30,5179 | 1,9892 | 2,0037 | 2,0053 | 68,3572 | 68,3448 | 66,3910 |
| 191 | 31,0239 | 28,6082 | 30,5024 | 1,9934 | 2,0029 | 2,0049 | 68,3477 | 68,3373 | 66,3805 |
| 192 | 31,0239 | 28,6082 | 30,5024 | 1,9934 | 2,0029 | 2,0049 | 68,3477 | 68,3373 | 66,3805 |
| 193 | 31,0239 | 28,6082 | 30,5024 | 1,9934 | 2,0029 | 2,0049 | 68,3477 | 68,3373 | 66,3805 |
| 194 | 30,9790 | 28,5836 | 30,5407 | 1,9901 | 2,0055 | 2,0037 | 68,3100 | 68,3299 | 66,3966 |
| 195 | 30,9790 | 28,5836 | 30,5407 | 1,9901 | 2,0055 | 2,0037 | 68,3100 | 68,3299 | 66,3966 |
| 196 | 30,9790 | 28,5836 | 30,5407 | 1,9901 | 2,0055 | 2,0037 | 68,3100 | 68,3299 | 66,3966 |
| 197 | 30,9864 | 28,5802 | 30,5117 | 1,9883 | 2,0035 | 2,0053 | 68,3628 | 68,3442 | 66,3872 |
| 198 | 30,9864 | 28,5802 | 30,5117 | 1,9883 | 2,0035 | 2,0053 | 68,3628 | 68,3442 | 66,3872 |
| 199 | 30,9864 | 28,5802 | 30,5117 | 1,9883 | 2,0035 | 2,0053 | 68,3628 | 68,3442 | 66,3872 |
| 200 | 30,9658 | 28,5930 | 30,5017 | 1,9885 | 2,0023 | 2,0052 | 68,3229 | 68,3474 | 66,3786 |

Tablica P.2. *log-likelihood* vrijednosti za napon, struju i kut za sve faze i sve razdiobe

| Razdioba                                 | Log-likelihood  |                 |                 |                |                |                |                |                |                |
|--|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | Struja I1       | Struja I2       | Struja I3       | Napon U1       | Napon U2       | Napon U3       | Kut phi 1      | Kut phi 2      | Kut phi 3      |
| Birnbaum-Saunders                        | 922,515         | 1069,330        | 1079,910        | 325,485        | 570,612        | 546,791        | 334,541        | 476,946        | 486,721        |
| Razdioba ekstremnih vrijednosti          | 913,557         | 1058,480        | 1072,760        | 321,233        | 565,433        | 535,698        | 324,701        | 467,256        | 471,611        |
| Gamma                                    | 922,526         | 1069,330        | 1079,910        | 325,499        | 570,615        | 546,789        | 334,545        | 476,947        | 486,720        |
| Poopćena razdioba ekstremnih vrijednosti | 922,706         | 1071,380        | 1083,950        | 327,359        | 573,914        | 550,,36        | 335,394        | 478,911        | 487,948        |
| Inverzna Gaussova                        | <b>1106,300</b> | <b>1253,110</b> | <b>1263,700</b> | <b>509,273</b> | <b>754,400</b> | <b>730,579</b> | <b>518,329</b> | <b>660,734</b> | <b>670,509</b> |
| Log-logistic                             | 923,370         | 1062,790        | 1071,430        | 321,758        | 564,936        | 538,206        | 332,568        | 471,860        | 483,113        |
| Logistic                                 | 923,392         | 1062,790        | 1071,430        | 321,794        | 564,939        | 538,201        | 332,576        | 471,861        | 483,112        |
| Lognormalna                              | 922,514         | 1069,320        | 1079,910        | 325,484        | 570,611        | 546,790        | 334,540        | 476,945        | 486,720        |
| Nakagami                                 | 922,537         | 1069,320        | 1079,910        | 325,513        | 570,617        | 546,786        | 334,548        | 476,947        | 486,720        |
| Gaussova                                 | 922,546         | 1069,320        | 1079,910        | 325,525        | 570,619        | 546,783        | 334,550        | 476,946        | 486,717        |
| Ricianova                                | 922,547         | 1069,320        | 1079,910        | 325,526        | 570,620        | 546,784        | 334,551        | 476,947        | 486,719        |
| t razdioba                               | 923,043         | 1069,320        | 1079,910        | 325,526        | 570,620        | 546,784        | 334,551        | 476,947        | 486,719        |
| Weibullova                               | 913,647         | 1058,520        | 1072,790        | 321,319        | 565,456        | 535,727        | 324,749        | 467,277        | 471,638        |

Tablica P.3. Stabilizacija rezultata AMC metode kod proračuna otpora R1

| $M$           | $R_{sr. vrijednost}$ | $R_{st.dev.}$ | $R_{donja granica}$ | $R_{gornja granica}$ | Tolerancija   |
|---------------|----------------------|---------------|---------------------|----------------------|---------------|
| 20000         | 0,0001               | 0,0003        | 0,0003              | 0,0009               | 0,0005        |
| 30000         | 0,0001               | 0,0002        | 0,0004              | 0,0015               | 0,0005        |
| 40000         | 0,0001               | 0,0002        | 0,0005              | 0,0011               | 0,0005        |
| 50000         | 0,0001               | 0,0001        | 0,0005              | 0,0009               | 0,0005        |
| 60000         | 0,0000               | 0,0001        | 0,0005              | 0,0008               | 0,0005        |
| 70000         | 0,0000               | 0,0001        | 0,0004              | 0,0007               | 0,0005        |
| 80000         | 0,0001               | 0,0001        | 0,0004              | 0,0006               | 0,0005        |
| 90000         | 0,0001               | 0,0001        | 0,0004              | 0,0005               | 0,0005        |
| 100000        | 0,0001               | 0,0001        | 0,0003              | 0,0005               | 0,0005        |
| 110000        | 0,0001               | 0,0001        | 0,0004              | 0,0005               | 0,0005        |
| <b>120000</b> | <b>0,0001</b>        | <b>0,0001</b> | <b>0,0003</b>       | <b>0,0004</b>        | <b>0,0005</b> |
| 130000        | 0,0001               | 6,34E-05      | 0,0003              | 0,0004               | 0,0005        |
| 140000        | 0,0001               | 5,93E-05      | 0,0003              | 0,0004               | 0,0005        |
| 150000        | 0,0001               | 5,91E-05      | 0,0003              | 0,0004               | 0,0005        |
| 160000        | 0,0001               | 5,53E-05      | 0,0003              | 0,0004               | 0,0005        |
| 170000        | 0,0001               | 0,0001        | 0,0003              | 0,0004               | 0,0005        |
| 180000        | 0,0001               | 5,07E-05      | 0,0003              | 0,0004               | 0,0005        |
| 190000        | 0,0001               | 5,23E-05      | 0,0003              | 0,0004               | 0,0005        |
| 200000        | 0,0001               | 5,44E-05      | 0,0003              | 0,0004               | 0,0005        |

Tablica P.4. Stabilizacija rezultata AMC metode kod proračuna otpora R2

| $M$    | $R_{sr. vrijednost}$ | $R_{st.dev.}$ | $R_{donja granica}$ | $R_{gornja granica}$ | Tolerancija |
|--------|----------------------|---------------|---------------------|----------------------|-------------|
| 20000  | 4,79633E-05          | 9,17642E-05   | 0,000286331         | 0,000826533          | 0,00005     |
| 30000  | 3,99919E-05          | 7,12081E-05   | 0,000442457         | 0,000527407          | 0,00005     |
| 40000  | 2,84555E-05          | 5,4775E-05    | 0,000319404         | 0,000374921          | 0,00005     |
| 50000  | 3,28191E-05          | 4,24664E-05   | 0,000280485         | 0,000313833          | 0,00005     |
| 60000  | 4,0611E-05           | 3,85779E-05   | 0,000257189         | 0,000258704          | 0,00005     |
| 70000  | 5,41862E-05          | 3,36749E-05   | 0,000251119         | 0,000241455          | 0,00005     |
| 80000  | 4,72021E-05          | 3,0015E-05    | 0,000224016         | 0,000232405          | 0,00005     |
| 90000  | 4,39545E-05          | 2,75368E-05   | 0,000198566         | 0,000226066          | 0,00005     |
| 100000 | 3,93645E-05          | 2,46557E-05   | 0,000221541         | 0,000242626          | 0,00005     |
| 110000 | 3,58185E-05          | 2,30139E-05   | 0,000204456         | 0,000223862          | 0,00005     |
| 120000 | 3,71352E-05          | 2,31809E-05   | 0,000196472         | 0,000204496          | 0,00005     |
| 130000 | 3,42424E-05          | 2,13469E-05   | 0,000192863         | 0,000203065          | 0,00005     |
| 140000 | 3,53213E-05          | 2,06173E-05   | 0,000181801         | 0,000198514          | 0,00005     |
| 150000 | 3,38426E-05          | 1,98057E-05   | 0,000169761         | 0,000184827          | 0,00005     |
| 160000 | 3,27907E-05          | 1,85533E-05   | 0,000161838         | 0,000175422          | 0,00005     |
| 170000 | 3,08892E-05          | 1,84647E-05   | 0,000152474         | 0,000167795          | 0,00005     |
| 180000 | 2,91667E-05          | 1,81159E-05   | 0,000151161         | 0,00015901           | 0,00005     |
| 190000 | 2,78768E-05          | 1,72928E-05   | 0,000144478         | 0,000150448          | 0,00005     |
| 200000 | 2,70339E-05          | 1,64259E-05   | 0,000143333         | 0,000152279          | 0,00005     |
| 210000 | 2,58396E-05          | 1,6023E-05    | 0,000139046         | 0,000145395          | 0,00005     |
| 220000 | 2,56557E-05          | 1,62295E-05   | 0,000135236         | 0,000138629          | 0,00005     |
| 230000 | 2,56568E-05          | 1,59825E-05   | 0,000129224         | 0,000134516          | 0,00005     |
| 240000 | 2,69805E-05          | 1,54544E-05   | 0,000123911         | 0,000128976          | 0,00005     |
| 250000 | 2,588E-05            | 1,49189E-05   | 0,000119939         | 0,000125202          | 0,00005     |
| 260000 | 2,50251E-05          | 1,43719E-05   | 0,000115971         | 0,000120782          | 0,00005     |
| 270000 | 2,40873E-05          | 1,44726E-05   | 0,000111797         | 0,000117921          | 0,00005     |
| 280000 | 2,32237E-05          | 1,4393E-05    | 0,000108144         | 0,000114296          | 0,00005     |
| 290000 | 2,39156E-05          | 1,40873E-05   | 0,000104687         | 0,000110606          | 0,00005     |
| 300000 | 2,3106E-05           | 1,36156E-05   | 0,000101142         | 0,000106857          | 0,00005     |
| 310000 | 2,33891E-05          | 1,32086E-05   | 0,000102152         | 0,000107206          | 0,00005     |
| 320000 | 2,34037E-05          | 1,28418E-05   | 0,000100229         | 0,000106747          | 0,00005     |
| 330000 | 2,29329E-05          | 1,26063E-05   | 9,80736E-05         | 0,000105212          | 0,00005     |
| 340000 | 2,28462E-05          | 1,2275E-05    | 9,68808E-05         | 0,000104835          | 0,00005     |
| 350000 | 2,21858E-05          | 1,19235E-05   | 9,74303E-05         | 0,000104541          | 0,00005     |
| 360000 | 2,21431E-05          | 1,18327E-05   | 9,48243E-05         | 0,000104943          | 0,00005     |
| 370000 | 2,15367E-05          | 1,15384E-05   | 9,24913E-05         | 0,00010329           | 0,00005     |
| 380000 | 2,10061E-05          | 1,1455E-05    | 9,13332E-05         | 0,000101267          | 0,00005     |
| 390000 | 2,04708E-05          | 1,11985E-05   | 8,90834E-05         | 9,88878E-05          | 0,00005     |
| 400000 | 2,04075E-05          | 1,09197E-05   | 8,68308E-05         | 9,65795E-05          | 0,00005     |
| 410000 | 2,00389E-05          | 1,06545E-05   | 8,47588E-05         | 9,41944E-05          | 0,00005     |
| 420000 | 1,96669E-05          | 1,08186E-05   | 8,30629E-05         | 9,20972E-05          | 0,00005     |
| 430000 | 1,92869E-05          | 1,06026E-05   | 8,13604E-05         | 9,04407E-05          | 0,00005     |
| 440000 | 1,89023E-05          | 1,04037E-05   | 7,9497E-05          | 8,85429E-05          | 0,00005     |
| 450000 | 1,85086E-05          | 1,02687E-05   | 7,77688E-05         | 8,65553E-05          | 0,00005     |
| 460000 | 1,81048E-05          | 1,02868E-05   | 7,70931E-05         | 8,46528E-05          | 0,00005     |
| 470000 | 1,77953E-05          | 1,00708E-05   | 7,65365E-05         | 8,53012E-05          | 0,00005     |



|        |             |             |             |             |         |
|--------|-------------|-------------|-------------|-------------|---------|
| 480000 | 1,75438E-05 | 1,01519E-05 | 7,51255E-05 | 8,35477E-05 | 0,00005 |
| 490000 | 1,75433E-05 | 9,94267E-06 | 7,49224E-05 | 8,18429E-05 | 0,00005 |
| 500000 | 1,73268E-05 | 9,81222E-06 | 7,40559E-05 | 8,08872E-05 | 0,00005 |
| 510000 | 1,69881E-05 | 9,61859E-06 | 7,26763E-05 | 7,94164E-05 | 0,00005 |
| 520000 | 1,7029E-05  | 9,70714E-06 | 7,13035E-05 | 7,78864E-05 | 0,00005 |
| 530000 | 1,69246E-05 | 9,59202E-06 | 7,01801E-05 | 7,66859E-05 | 0,00005 |
| 540000 | 1,66144E-05 | 9,54056E-06 | 6,89763E-05 | 7,57238E-05 | 0,00005 |
| 550000 | 1,63196E-05 | 9,61749E-06 | 6,83266E-05 | 7,45627E-05 | 0,00005 |
| 560000 | 1,60272E-05 | 9,47228E-06 | 6,70957E-05 | 7,32429E-05 | 0,00005 |
| 570000 | 1,58031E-05 | 9,61456E-06 | 6,82439E-05 | 7,33231E-05 | 0,00005 |
| 580000 | 1,58471E-05 | 9,58523E-06 | 6,71289E-05 | 7,21857E-05 | 0,00005 |
| 590000 | 1,55858E-05 | 9,42696E-06 | 6,63774E-05 | 7,17794E-05 | 0,00005 |
| 600000 | 1,53786E-05 | 9,27182E-06 | 6,54008E-05 | 7,09922E-05 | 0,00005 |
| 610000 | 1,5513E-05  | 9,12205E-06 | 6,45569E-05 | 7,00483E-05 | 0,00005 |
| 620000 | 1,52884E-05 | 9,12278E-06 | 6,45737E-05 | 6,90656E-05 | 0,00005 |
| 630000 | 1,52768E-05 | 9,05606E-06 | 6,47596E-05 | 6,84531E-05 | 0,00005 |
| 640000 | 1,51565E-05 | 8,97123E-06 | 6,4664E-05  | 6,74464E-05 | 0,00005 |
| 650000 | 1,49833E-05 | 8,84979E-06 | 6,36805E-05 | 6,64276E-05 | 0,00005 |
| 660000 | 1,48419E-05 | 8,72968E-06 | 6,32255E-05 | 6,56231E-05 | 0,00005 |
| 670000 | 1,48519E-05 | 8,68694E-06 | 6,26548E-05 | 6,55238E-05 | 0,00005 |
| 680000 | 1,50753E-05 | 8,58041E-06 | 6,41076E-05 | 6,53626E-05 | 0,00005 |
| 690000 | 1,48555E-05 | 8,67717E-06 | 6,33414E-05 | 6,44929E-05 | 0,00005 |
| 700000 | 1,4673E-05  | 8,55861E-06 | 6,30984E-05 | 6,38286E-05 | 0,00005 |
| 710000 | 1,48356E-05 | 8,60424E-06 | 6,30956E-05 | 6,42123E-05 | 0,00005 |
| 720000 | 1,46281E-05 | 8,511E-06   | 6,22183E-05 | 6,33167E-05 | 0,00005 |
| 730000 | 1,44367E-05 | 8,39815E-06 | 6,14805E-05 | 6,27698E-05 | 0,00005 |
| 740000 | 1,4295E-05  | 8,28393E-06 | 6,09257E-05 | 6,2449E-05  | 0,00005 |
| 750000 | 1,43593E-05 | 8,3571E-06  | 6,20452E-05 | 6,2104E-05  | 0,00005 |
| 760000 | 1,41801E-05 | 8,33386E-06 | 6,13724E-05 | 6,15855E-05 | 0,00005 |
| 770000 | 1,40075E-05 | 8,34615E-06 | 6,10864E-05 | 6,14221E-05 | 0,00005 |
| 780000 | 1,39164E-05 | 8,27238E-06 | 6,16215E-05 | 6,11355E-05 | 0,00005 |
| 790000 | 1,37391E-05 | 8,19387E-06 | 6,22846E-05 | 6,19216E-05 | 0,00005 |
| 800000 | 1,38887E-05 | 8,12095E-06 | 6,15085E-05 | 6,11856E-05 | 0,00005 |
| 810000 | 1,38194E-05 | 8,2101E-06  | 6,10335E-05 | 6,04376E-05 | 0,00005 |
| 820000 | 1,37801E-05 | 8,25481E-06 | 6,13766E-05 | 5,99479E-05 | 0,00005 |
| 830000 | 1,36665E-05 | 8,16828E-06 | 6,16303E-05 | 6,05918E-05 | 0,00005 |
| 840000 | 1,35826E-05 | 8,17318E-06 | 6,32425E-05 | 6,0471E-05  | 0,00005 |
| 850000 | 1,34542E-05 | 8,09832E-06 | 6,28696E-05 | 6,00774E-05 | 0,00005 |
| 860000 | 1,33655E-05 | 8,03129E-06 | 6,21473E-05 | 5,95873E-05 | 0,00005 |
| 870000 | 1,32247E-05 | 7,94071E-06 | 6,14371E-05 | 5,89012E-05 | 0,00005 |
| 880000 | 1,30839E-05 | 7,86443E-06 | 6,08429E-05 | 5,84038E-05 | 0,00005 |
| 890000 | 1,29792E-05 | 7,77835E-06 | 6,01628E-05 | 5,79266E-05 | 0,00005 |
| 900000 | 1,28809E-05 | 7,72814E-06 | 5,94984E-05 | 5,72979E-05 | 0,00005 |
| 910000 | 1,27728E-05 | 7,64296E-06 | 5,88567E-05 | 5,67454E-05 | 0,00005 |
| 920000 | 1,26335E-05 | 7,67663E-06 | 5,84769E-05 | 5,65224E-05 | 0,00005 |
| 930000 | 1,25068E-05 | 7,62941E-06 | 5,80154E-05 | 5,62894E-05 | 0,00005 |
| 940000 | 1,23762E-05 | 7,55132E-06 | 5,74882E-05 | 5,57072E-05 | 0,00005 |
| 950000 | 1,22583E-05 | 7,47175E-06 | 5,80026E-05 | 5,56848E-05 | 0,00005 |
| 960000 | 1,22088E-05 | 7,54606E-06 | 5,75684E-05 | 5,63951E-05 | 0,00005 |
| 970000 | 1,21481E-05 | 7,46805E-06 | 5,71695E-05 | 5,60981E-05 | 0,00005 |
| 980000 | 1,20288E-05 | 7,40253E-06 | 5,67155E-05 | 5,59625E-05 | 0,00005 |
| 990000 | 1,19579E-05 | 7,58128E-06 | 5,61776E-05 | 5,63489E-05 | 0,00005 |

|                |                    |                    |                    |                    |                |
|----------------|--------------------|--------------------|--------------------|--------------------|----------------|
| 100000         | 1,18378E-05        | 7,5271E-06         | 5,57768E-05        | 5,58354E-05        | 0,00005        |
| 1010000        | 1,17201E-05        | 7,50677E-06        | 5,52426E-05        | 5,54464E-05        | 0,00005        |
| 1020000        | 1,16238E-05        | 7,4377E-06         | 5,47143E-05        | 5,50161E-05        | 0,00005        |
| 1030000        | 1,21228E-05        | 7,40788E-06        | 5,43249E-05        | 5,47867E-05        | 0,00005        |
| 1040000        | 1,20137E-05        | 7,37934E-06        | 5,39043E-05        | 5,44837E-05        | 0,00005        |
| 1050000        | 1,21497E-05        | 7,35459E-06        | 5,34097E-05        | 5,39903E-05        | 0,00005        |
| 1060000        | 1,2043E-05         | 7,2981E-06         | 5,2919E-05         | 5,35701E-05        | 0,00005        |
| 1070000        | 1,19499E-05        | 7,22965E-06        | 5,25513E-05        | 5,35327E-05        | 0,00005        |
| 1080000        | 1,18459E-05        | 7,20925E-06        | 5,21344E-05        | 5,30535E-05        | 0,00005        |
| 1090000        | 1,17799E-05        | 7,21544E-06        | 5,18991E-05        | 5,2565E-05         | 0,00005        |
| 1100000        | 1,17028E-05        | 7,15631E-06        | 5,25498E-05        | 5,27261E-05        | 0,00005        |
| 1110000        | 1,16007E-05        | 7,09222E-06        | 5,23662E-05        | 5,24528E-05        | 0,00005        |
| 1120000        | 1,14967E-05        | 7,04946E-06        | 5,20747E-05        | 5,19895E-05        | 0,00005        |
| 1130000        | 1,13997E-05        | 6,98807E-06        | 5,19979E-05        | 5,18064E-05        | 0,00005        |
| 1140000        | 1,13192E-05        | 7,00421E-06        | 5,18443E-05        | 5,14724E-05        | 0,00005        |
| 1150000        | 1,12573E-05        | 6,95273E-06        | 5,20711E-05        | 5,18243E-05        | 0,00005        |
| 1160000        | 1,11665E-05        | 6,97433E-06        | 5,18935E-05        | 5,14492E-05        | 0,00005        |
| 1170000        | 1,11557E-05        | 6,99116E-06        | 5,19206E-05        | 5,1038E-05         | 0,00005        |
| 1180000        | 1,13008E-05        | 6,93352E-06        | 5,15512E-05        | 5,06368E-05        | 0,00005        |
| 1190000        | 1,12184E-05        | 6,88022E-06        | 5,11745E-05        | 5,03587E-05        | 0,00005        |
| 1200000        | 1,11388E-05        | 6,86266E-06        | 5,08304E-05        | 4,9954E-05         | 0,00005        |
| 1210000        | 1,10796E-05        | 6,85956E-06        | 5,04634E-05        | 4,95718E-05        | 0,00005        |
| 1220000        | 1,09891E-05        | 6,82116E-06        | 5,00974E-05        | 4,9444E-05         | 0,00005        |
| <b>1230000</b> | <b>1,09258E-05</b> | <b>6,78882E-06</b> | <b>4,97073E-05</b> | <b>4,91644E-05</b> | <b>0,00005</b> |
| 1240000        | 1,09219E-05        | 6,74406E-06        | 4,9409E-05         | 4,87777E-05        | 0,00005        |
| 1250000        | 1,0839E-05         | 6,7046E-06         | 4,92294E-05        | 4,84351E-05        | 0,00005        |
| 1260000        | 1,09029E-05        | 6,65979E-06        | 4,88945E-05        | 4,84267E-05        | 0,00005        |
| 1270000        | 1,09818E-05        | 6,6116E-06         | 4,86129E-05        | 4,80757E-05        | 0,00005        |
| 1280000        | 1,08957E-05        | 6,56301E-06        | 4,85217E-05        | 4,81532E-05        | 0,00005        |
| 1290000        | 1,08123E-05        | 6,51658E-06        | 4,8197E-05         | 4,7789E-05         | 0,00005        |
| 1300000        | 1,08873E-05        | 6,46685E-06        | 4,78283E-05        | 4,74207E-05        | 0,00005        |
| 1310000        | 1,08344E-05        | 6,41969E-06        | 4,76233E-05        | 4,72171E-05        | 0,00005        |
| 1320000        | 1,0883E-05         | 6,3833E-06         | 4,72645E-05        | 4,69929E-05        | 0,00005        |
| 1330000        | 1,08242E-05        | 6,41665E-06        | 4,6953E-05         | 4,70725E-05        | 0,00005        |
| 1340000        | 1,08267E-05        | 6,3832E-06         | 4,67857E-05        | 4,68856E-05        | 0,00005        |
| 1350000        | 1,09397E-05        | 6,34003E-06        | 4,65579E-05        | 4,67635E-05        | 0,00005        |
| 1360000        | 1,08723E-05        | 6,30318E-06        | 4,65845E-05        | 4,67071E-05        | 0,00005        |
| 1370000        | 1,07944E-05        | 6,29788E-06        | 4,66767E-05        | 4,63732E-05        | 0,00005        |
| 1380000        | 1,07382E-05        | 6,30169E-06        | 4,63587E-05        | 4,65663E-05        | 0,00005        |
| 1390000        | 1,07972E-05        | 6,29259E-06        | 4,61775E-05        | 4,62552E-05        | 0,00005        |
| 1400000        | 1,07572E-05        | 6,25283E-06        | 4,63627E-05        | 4,62142E-05        | 0,00005        |
| 1410000        | 1,06848E-05        | 6,25476E-06        | 4,63148E-05        | 4,67052E-05        | 0,00005        |
| 1420000        | 1,06327E-05        | 6,21579E-06        | 4,63509E-05        | 4,66439E-05        | 0,00005        |
| 1430000        | 1,07016E-05        | 6,17217E-06        | 4,60577E-05        | 4,63171E-05        | 0,00005        |
| 1440000        | 1,06749E-05        | 6,22071E-06        | 4,57889E-05        | 4,71436E-05        | 0,00005        |
| 1450000        | 1,07647E-05        | 6,2211E-06         | 4,57108E-05        | 4,7505E-05         | 0,00005        |
| 1460000        | 1,09237E-05        | 6,20404E-06        | 4,60294E-05        | 4,76929E-05        | 0,00005        |
| 1470000        | 1,08648E-05        | 6,1713E-06         | 4,58196E-05        | 4,76629E-05        | 0,00005        |
| 1480000        | 1,08679E-05        | 6,15666E-06        | 4,55444E-05        | 4,75249E-05        | 0,00005        |
| 1490000        | 1,07965E-05        | 6,12109E-06        | 4,52986E-05        | 4,72189E-05        | 0,00005        |
| 1500000        | 1,07614E-05        | 6,1722E-06         | 4,54862E-05        | 4,72549E-05        | 0,00005        |
| 1510000        | 1,07282E-05        | 6,13687E-06        | 4,53281E-05        | 4,69419E-05        | 0,00005        |

|         |             |             |             |             |         |
|---------|-------------|-------------|-------------|-------------|---------|
| 1520000 | 1,06582E-05 | 6,10244E-06 | 4,52887E-05 | 4,67616E-05 | 0,00005 |
| 1530000 | 1,06443E-05 | 6,06611E-06 | 4,55697E-05 | 4,68496E-05 | 0,00005 |
| 1540000 | 1,06544E-05 | 6,0408E-06  | 4,55255E-05 | 4,68345E-05 | 0,00005 |
| 1550000 | 1,06217E-05 | 6,00578E-06 | 4,54738E-05 | 4,66296E-05 | 0,00005 |
| 1560000 | 1,06484E-05 | 5,9749E-06  | 4,51914E-05 | 4,63363E-05 | 0,00005 |
| 1570000 | 1,05812E-05 | 5,94159E-06 | 4,49648E-05 | 4,60488E-05 | 0,00005 |
| 1580000 | 1,05954E-05 | 5,90552E-06 | 4,5008E-05  | 4,61586E-05 | 0,00005 |
| 1590000 | 1,05473E-05 | 5,89075E-06 | 4,49225E-05 | 4,59068E-05 | 0,00005 |
| 1600000 | 1,04949E-05 | 5,89038E-06 | 4,46411E-05 | 4,56197E-05 | 0,00005 |
| 1610000 | 1,04942E-05 | 5,85912E-06 | 4,4367E-05  | 4,53807E-05 | 0,00005 |
| 1620000 | 1,04299E-05 | 5,82919E-06 | 4,41136E-05 | 4,51221E-05 | 0,00005 |
| 1630000 | 1,04148E-05 | 5,79687E-06 | 4,38784E-05 | 4,48445E-05 | 0,00005 |
| 1640000 | 1,03847E-05 | 5,82041E-06 | 4,36346E-05 | 4,47389E-05 | 0,00005 |
| 1650000 | 1,03316E-05 | 5,80524E-06 | 4,37644E-05 | 4,45956E-05 | 0,00005 |
| 1660000 | 1,02694E-05 | 5,7934E-06  | 4,37131E-05 | 4,43269E-05 | 0,00005 |
| 1670000 | 1,03246E-05 | 5,76022E-06 | 4,35476E-05 | 4,40615E-05 | 0,00005 |
| 1680000 | 1,02729E-05 | 5,73737E-06 | 4,32922E-05 | 4,38352E-05 | 0,00005 |
| 1690000 | 1,02122E-05 | 5,71062E-06 | 4,30433E-05 | 4,35789E-05 | 0,00005 |
| 1700000 | 1,01706E-05 | 5,69756E-06 | 4,28483E-05 | 4,33885E-05 | 0,00005 |

Tablica P.5. Stabilizacija rezultata AMC metode kod proračuna otpora R3

| $M$    | $R_{sr. vrijednost}$ | $R_{st.dev.}$ | $R_{donja granica}$ | $R_{gornja granica}$ | Tolerancija |
|--------|----------------------|---------------|---------------------|----------------------|-------------|
| 20000  | 5,64E-05             | 7,68E-05      | 0,000686            | 0,000547             | 0,00005     |
| 30000  | 3,33E-05             | 5,74E-05      | 0,000463            | 0,000358             | 0,00005     |
| 40000  | 2,39E-05             | 4,06E-05      | 0,000332            | 0,000253             | 0,00005     |
| 50000  | 1,95E-05             | 3,15E-05      | 0,000262            | 0,000236             | 0,00005     |
| 60000  | 2,31E-05             | 2,69E-05      | 0,000215            | 0,000193             | 0,00005     |
| 70000  | 2,79E-05             | 2,28E-05      | 0,000267            | 0,000241             | 0,00005     |
| 80000  | 2,41E-05             | 2,96E-05      | 0,000258            | 0,000211             | 0,00005     |
| 90000  | 3,28E-05             | 2,68E-05      | 0,000227            | 0,000186             | 0,00005     |
| 100000 | 3E-05                | 2,52E-05      | 0,000222            | 0,000184             | 0,00005     |
| 110000 | 2,74E-05             | 2,59E-05      | 0,000202            | 0,000176             | 0,00005     |
| 120000 | 2,88E-05             | 2,39E-05      | 0,00019             | 0,000168             | 0,00005     |
| 130000 | 2,76E-05             | 2,2E-05       | 0,000176            | 0,000154             | 0,00005     |
| 140000 | 2,55E-05             | 2,21E-05      | 0,000171            | 0,000154             | 0,00005     |
| 150000 | 2,41E-05             | 2,08E-05      | 0,000169            | 0,000146             | 0,00005     |
| 160000 | 2,44E-05             | 2,02E-05      | 0,000158            | 0,00014              | 0,00005     |
| 170000 | 2,41E-05             | 1,95E-05      | 0,00016             | 0,000133             | 0,00005     |
| 180000 | 2,33E-05             | 1,91E-05      | 0,000151            | 0,000129             | 0,00005     |
| 190000 | 2,21E-05             | 1,89E-05      | 0,000147            | 0,000138             | 0,00005     |
| 200000 | 2,16E-05             | 1,79E-05      | 0,00014             | 0,000131             | 0,00005     |
| 210000 | 2,14E-05             | 1,73E-05      | 0,000136            | 0,000126             | 0,00005     |
| 220000 | 2,04E-05             | 1,65E-05      | 0,000145            | 0,000136             | 0,00005     |
| 230000 | 2,14E-05             | 1,6E-05       | 0,000139            | 0,00013              | 0,00005     |
| 240000 | 2,05E-05             | 1,54E-05      | 0,000136            | 0,000129             | 0,00005     |

|        |          |          |          |          |         |
|--------|----------|----------|----------|----------|---------|
| 250000 | 1,97E-05 | 1,59E-05 | 0,000131 | 0,000125 | 0,00005 |
| 260000 | 2E-05    | 1,53E-05 | 0,000128 | 0,000121 | 0,00005 |
| 270000 | 1,92E-05 | 1,47E-05 | 0,000128 | 0,000116 | 0,00005 |
| 280000 | 1,92E-05 | 1,44E-05 | 0,000122 | 0,000115 | 0,00005 |
| 290000 | 1,85E-05 | 1,42E-05 | 0,000118 | 0,000111 | 0,00005 |
| 300000 | 1,85E-05 | 1,37E-05 | 0,000115 | 0,000109 | 0,00005 |
| 310000 | 1,87E-05 | 1,36E-05 | 0,000112 | 0,000105 | 0,00005 |
| 320000 | 1,84E-05 | 1,36E-05 | 0,000109 | 0,000103 | 0,00005 |
| 330000 | 1,79E-05 | 1,33E-05 | 0,000106 | 0,0001   | 0,00005 |
| 340000 | 1,79E-05 | 1,32E-05 | 0,000103 | 9,81E-05 | 0,00005 |
| 350000 | 1,74E-05 | 1,33E-05 | 9,99E-05 | 9,63E-05 | 0,00005 |
| 360000 | 1,69E-05 | 1,3E-05  | 9,98E-05 | 9,36E-05 | 0,00005 |
| 370000 | 1,66E-05 | 1,3E-05  | 9,72E-05 | 9,49E-05 | 0,00005 |
| 380000 | 1,68E-05 | 1,32E-05 | 9,57E-05 | 9,25E-05 | 0,00005 |
| 390000 | 1,65E-05 | 1,29E-05 | 9,32E-05 | 9,03E-05 | 0,00005 |
| 400000 | 1,61E-05 | 1,29E-05 | 9,24E-05 | 8,8E-05  | 0,00005 |
| 410000 | 1,58E-05 | 1,27E-05 | 9,12E-05 | 8,83E-05 | 0,00005 |
| 420000 | 1,59E-05 | 1,27E-05 | 9,34E-05 | 8,78E-05 | 0,00005 |
| 430000 | 1,55E-05 | 1,25E-05 | 9,14E-05 | 8,58E-05 | 0,00005 |
| 440000 | 1,54E-05 | 1,27E-05 | 8,99E-05 | 8,41E-05 | 0,00005 |
| 450000 | 1,7E-05  | 1,25E-05 | 8,79E-05 | 8,23E-05 | 0,00005 |
| 460000 | 1,7E-05  | 1,22E-05 | 8,61E-05 | 8,05E-05 | 0,00005 |
| 470000 | 1,67E-05 | 1,2E-05  | 8,42E-05 | 7,9E-05  | 0,00005 |
| 480000 | 1,66E-05 | 1,17E-05 | 8,35E-05 | 7,79E-05 | 0,00005 |
| 490000 | 1,62E-05 | 1,16E-05 | 8,18E-05 | 7,66E-05 | 0,00005 |
| 500000 | 1,61E-05 | 1,14E-05 | 8,02E-05 | 7,51E-05 | 0,00005 |
| 510000 | 1,58E-05 | 1,12E-05 | 7,92E-05 | 7,44E-05 | 0,00005 |
| 520000 | 1,6E-05  | 1,11E-05 | 7,86E-05 | 7,54E-05 | 0,00005 |
| 530000 | 1,66E-05 | 1,1E-05  | 7,72E-05 | 7,41E-05 | 0,00005 |
| 540000 | 1,65E-05 | 1,1E-05  | 7,6E-05  | 7,42E-05 | 0,00005 |
| 550000 | 1,62E-05 | 1,09E-05 | 7,7E-05  | 7,4E-05  | 0,00005 |
| 560000 | 1,6E-05  | 1,08E-05 | 7,57E-05 | 7,31E-05 | 0,00005 |
| 570000 | 1,57E-05 | 1,12E-05 | 7,44E-05 | 7,37E-05 | 0,00005 |
| 580000 | 1,55E-05 | 1,11E-05 | 7,39E-05 | 7,27E-05 | 0,00005 |
| 590000 | 1,53E-05 | 1,09E-05 | 7,28E-05 | 7,19E-05 | 0,00005 |
| 600000 | 1,62E-05 | 1,11E-05 | 7,22E-05 | 7,09E-05 | 0,00005 |
| 610000 | 1,59E-05 | 1,09E-05 | 7,1E-05  | 6,98E-05 | 0,00005 |
| 620000 | 1,6E-05  | 1,07E-05 | 6,99E-05 | 6,87E-05 | 0,00005 |
| 630000 | 1,58E-05 | 1,06E-05 | 6,89E-05 | 6,77E-05 | 0,00005 |
| 640000 | 1,59E-05 | 1,04E-05 | 7,01E-05 | 6,89E-05 | 0,00005 |
| 650000 | 1,56E-05 | 1,03E-05 | 6,95E-05 | 6,84E-05 | 0,00005 |
| 660000 | 1,55E-05 | 1,02E-05 | 6,86E-05 | 6,81E-05 | 0,00005 |
| 670000 | 1,56E-05 | 1,01E-05 | 6,77E-05 | 6,7E-05  | 0,00005 |
| 680000 | 1,54E-05 | 1E-05    | 6,71E-05 | 6,73E-05 | 0,00005 |
| 690000 | 1,52E-05 | 9,89E-06 | 6,62E-05 | 6,67E-05 | 0,00005 |

|         |          |          |          |          |         |
|---------|----------|----------|----------|----------|---------|
| 700000  | 1,5E-05  | 9,76E-06 | 6,53E-05 | 6,63E-05 | 0,00005 |
| 710000  | 1,49E-05 | 9,66E-06 | 6,46E-05 | 6,55E-05 | 0,00005 |
| 720000  | 1,48E-05 | 9,58E-06 | 6,37E-05 | 6,47E-05 | 0,00005 |
| 730000  | 1,46E-05 | 9,53E-06 | 6,31E-05 | 6,42E-05 | 0,00005 |
| 740000  | 1,46E-05 | 9,48E-06 | 6,3E-05  | 6,41E-05 | 0,00005 |
| 750000  | 1,44E-05 | 9,36E-06 | 6,23E-05 | 6,35E-05 | 0,00005 |
| 760000  | 1,44E-05 | 9,27E-06 | 6,16E-05 | 6,26E-05 | 0,00005 |
| 770000  | 1,43E-05 | 9,18E-06 | 6,08E-05 | 6,18E-05 | 0,00005 |
| 780000  | 1,42E-05 | 9,16E-06 | 6,03E-05 | 6,11E-05 | 0,00005 |
| 790000  | 1,41E-05 | 9,07E-06 | 5,97E-05 | 6,05E-05 | 0,00005 |
| 800000  | 1,48E-05 | 8,96E-06 | 6,11E-05 | 6,15E-05 | 0,00005 |
| 810000  | 1,49E-05 | 9,13E-06 | 6,04E-05 | 6,08E-05 | 0,00005 |
| 820000  | 1,47E-05 | 9,19E-06 | 5,97E-05 | 6,08E-05 | 0,00005 |
| 830000  | 1,45E-05 | 9,1E-06  | 5,9E-05  | 6,01E-05 | 0,00005 |
| 840000  | 1,44E-05 | 9E-06    | 5,91E-05 | 5,95E-05 | 0,00005 |
| 850000  | 1,42E-05 | 8,9E-06  | 5,89E-05 | 5,96E-05 | 0,00005 |
| 860000  | 1,41E-05 | 8,81E-06 | 5,82E-05 | 5,89E-05 | 0,00005 |
| 870000  | 1,41E-05 | 8,75E-06 | 5,83E-05 | 5,89E-05 | 0,00005 |
| 880000  | 1,39E-05 | 8,65E-06 | 5,8E-05  | 5,89E-05 | 0,00005 |
| 890000  | 1,39E-05 | 8,61E-06 | 5,81E-05 | 5,82E-05 | 0,00005 |
| 900000  | 1,39E-05 | 8,51E-06 | 5,76E-05 | 5,76E-05 | 0,00005 |
| 910000  | 1,42E-05 | 8,42E-06 | 5,96E-05 | 5,89E-05 | 0,00005 |
| 920000  | 1,41E-05 | 8,33E-06 | 5,95E-05 | 6E-05    | 0,00005 |
| 930000  | 1,4E-05  | 8,25E-06 | 5,91E-05 | 5,95E-05 | 0,00005 |
| 940000  | 1,38E-05 | 8,19E-06 | 5,85E-05 | 5,91E-05 | 0,00005 |
| 950000  | 1,37E-05 | 8,1E-06  | 5,79E-05 | 5,84E-05 | 0,00005 |
| 960000  | 1,36E-05 | 8,02E-06 | 5,74E-05 | 5,79E-05 | 0,00005 |
| 970000  | 1,36E-05 | 7,96E-06 | 5,76E-05 | 5,8E-05  | 0,00005 |
| 980000  | 1,36E-05 | 7,94E-06 | 5,7E-05  | 5,77E-05 | 0,00005 |
| 990000  | 1,35E-05 | 7,86E-06 | 5,64E-05 | 5,71E-05 | 0,00005 |
| 1000000 | 1,36E-05 | 7,78E-06 | 5,61E-05 | 5,73E-05 | 0,00005 |
| 1010000 | 1,35E-05 | 7,71E-06 | 5,56E-05 | 5,68E-05 | 0,00005 |
| 1020000 | 1,34E-05 | 7,64E-06 | 5,51E-05 | 5,63E-05 | 0,00005 |
| 1030000 | 1,34E-05 | 7,56E-06 | 5,46E-05 | 5,59E-05 | 0,00005 |
| 1040000 | 1,32E-05 | 7,49E-06 | 5,47E-05 | 5,54E-05 | 0,00005 |
| 1050000 | 1,33E-05 | 7,48E-06 | 5,42E-05 | 5,51E-05 | 0,00005 |
| 1060000 | 1,32E-05 | 7,42E-06 | 5,4E-05  | 5,46E-05 | 0,00005 |
| 1070000 | 1,31E-05 | 7,42E-06 | 5,35E-05 | 5,44E-05 | 0,00005 |
| 1080000 | 1,3E-05  | 7,35E-06 | 5,36E-05 | 5,45E-05 | 0,00005 |
| 1090000 | 1,29E-05 | 7,36E-06 | 5,31E-05 | 5,41E-05 | 0,00005 |
| 1100000 | 1,28E-05 | 7,31E-06 | 5,34E-05 | 5,42E-05 | 0,00005 |
| 1110000 | 1,27E-05 | 7,33E-06 | 5,29E-05 | 5,37E-05 | 0,00005 |
| 1120000 | 1,26E-05 | 7,31E-06 | 5,25E-05 | 5,32E-05 | 0,00005 |
| 1130000 | 1,25E-05 | 7,25E-06 | 5,2E-05  | 5,28E-05 | 0,00005 |
| 1140000 | 1,24E-05 | 7,2E-06  | 5,16E-05 | 5,24E-05 | 0,00005 |

|                |                 |                 |                 |                 |                |
|----------------|-----------------|-----------------|-----------------|-----------------|----------------|
| 1150000        | 1,23E-05        | 7,16E-06        | 5,11E-05        | 5,19E-05        | 0,00005        |
| 1160000        | 1,23E-05        | 7,19E-06        | 5,07E-05        | 5,16E-05        | 0,00005        |
| 1170000        | 1,26E-05        | 7,17E-06        | 5,07E-05        | 5,2E-05         | 0,00005        |
| 1180000        | 1,26E-05        | 7,18E-06        | 5,05E-05        | 5,16E-05        | 0,00005        |
| 1190000        | 1,26E-05        | 7,14E-06        | 5,02E-05        | 5,15E-05        | 0,00005        |
| 1200000        | 1,25E-05        | 7,13E-06        | 4,99E-05        | 5,12E-05        | 0,00005        |
| 1210000        | 1,24E-05        | 7,08E-06        | 5,01E-05        | 5,17E-05        | 0,00005        |
| 1220000        | 1,23E-05        | 7,02E-06        | 4,97E-05        | 5,13E-05        | 0,00005        |
| 1230000        | 1,22E-05        | 6,97E-06        | 4,93E-05        | 5,11E-05        | 0,00005        |
| 1240000        | 1,23E-05        | 7E-06           | 4,89E-05        | 5,09E-05        | 0,00005        |
| 1250000        | 1,22E-05        | 7E-06           | 4,85E-05        | 5,07E-05        | 0,00005        |
| 1260000        | 1,21E-05        | 6,97E-06        | 4,83E-05        | 5,04E-05        | 0,00005        |
| 1270000        | 1,2E-05         | 6,92E-06        | 4,79E-05        | 5,04E-05        | 0,00005        |
| 1280000        | 1,19E-05        | 6,92E-06        | 4,75E-05        | 5,02E-05        | 0,00005        |
| <b>1290000</b> | <b>1,19E-05</b> | <b>6,87E-06</b> | <b>4,71E-05</b> | <b>4,98E-05</b> | <b>0,00005</b> |
| 1300000        | 1,19E-05        | 6,82E-06        | 4,69E-05        | 4,95E-05        | 0,00005        |
| 1310000        | 1,18E-05        | 6,8E-06         | 4,77E-05        | 4,93E-05        | 0,00005        |
| 1320000        | 1,17E-05        | 6,76E-06        | 4,75E-05        | 4,9E-05         | 0,00005        |
| 1330000        | 1,16E-05        | 6,72E-06        | 4,71E-05        | 4,87E-05        | 0,00005        |
| 1340000        | 1,15E-05        | 6,68E-06        | 4,68E-05        | 4,84E-05        | 0,00005        |
| 1350000        | 1,21E-05        | 6,63E-06        | 4,66E-05        | 4,81E-05        | 0,00005        |
| 1360000        | 1,2E-05         | 6,6E-06         | 4,64E-05        | 4,78E-05        | 0,00005        |
| 1370000        | 1,2E-05         | 6,58E-06        | 4,63E-05        | 4,78E-05        | 0,00005        |
| 1380000        | 1,19E-05        | 6,53E-06        | 4,6E-05         | 4,75E-05        | 0,00005        |
| 1390000        | 1,18E-05        | 6,5E-06         | 4,58E-05        | 4,71E-05        | 0,00005        |
| 1400000        | 1,17E-05        | 6,46E-06        | 4,56E-05        | 4,7E-05         | 0,00005        |
| 1410000        | 1,17E-05        | 6,48E-06        | 4,54E-05        | 4,67E-05        | 0,00005        |
| 1420000        | 1,17E-05        | 6,44E-06        | 4,53E-05        | 4,68E-05        | 0,00005        |
| 1430000        | 1,16E-05        | 6,4E-06         | 4,52E-05        | 4,66E-05        | 0,00005        |
| 1440000        | 1,16E-05        | 6,35E-06        | 4,53E-05        | 4,68E-05        | 0,00005        |
| 1450000        | 1,15E-05        | 6,32E-06        | 4,5E-05         | 4,65E-05        | 0,00005        |
| 1460000        | 1,14E-05        | 6,31E-06        | 4,47E-05        | 4,63E-05        | 0,00005        |
| 1470000        | 1,14E-05        | 6,31E-06        | 4,57E-05        | 4,63E-05        | 0,00005        |
| 1480000        | 1,18E-05        | 6,29E-06        | 4,54E-05        | 4,6E-05         | 0,00005        |
| 1490000        | 1,17E-05        | 6,25E-06        | 4,53E-05        | 4,57E-05        | 0,00005        |
| 1500000        | 1,17E-05        | 6,22E-06        | 4,5E-05         | 4,56E-05        | 0,00005        |
| 1510000        | 1,16E-05        | 6,19E-06        | 4,49E-05        | 4,54E-05        | 0,00005        |
| 1520000        | 1,16E-05        | 6,15E-06        | 4,46E-05        | 4,51E-05        | 0,00005        |
| 1530000        | 1,15E-05        | 6,16E-06        | 4,43E-05        | 4,49E-05        | 0,00005        |
| 1540000        | 1,14E-05        | 6,2E-06         | 4,42E-05        | 4,46E-05        | 0,00005        |
| 1550000        | 1,14E-05        | 6,16E-06        | 4,4E-05         | 4,44E-05        | 0,00005        |
| 1560000        | 1,13E-05        | 6,15E-06        | 4,38E-05        | 4,43E-05        | 0,00005        |
| 1570000        | 1,13E-05        | 6,11E-06        | 4,36E-05        | 4,42E-05        | 0,00005        |
| 1580000        | 1,12E-05        | 6,07E-06        | 4,34E-05        | 4,41E-05        | 0,00005        |
| 1590000        | 1,11E-05        | 6,07E-06        | 4,33E-05        | 4,39E-05        | 0,00005        |

|         |          |          |          |          |         |
|---------|----------|----------|----------|----------|---------|
| 1600000 | 1,11E-05 | 6,07E-06 | 4,31E-05 | 4,36E-05 | 0,00005 |
| 1610000 | 1,1E-05  | 6,05E-06 | 4,31E-05 | 4,33E-05 | 0,00005 |
| 1620000 | 1,11E-05 | 6,02E-06 | 4,3E-05  | 4,31E-05 | 0,00005 |
| 1630000 | 1,1E-05  | 5,98E-06 | 4,29E-05 | 4,32E-05 | 0,00005 |
| 1640000 | 1,1E-05  | 5,96E-06 | 4,27E-05 | 4,3E-05  | 0,00005 |
| 1650000 | 1,09E-05 | 5,93E-06 | 4,25E-05 | 4,28E-05 | 0,00005 |
| 1660000 | 1,09E-05 | 5,9E-06  | 4,23E-05 | 4,26E-05 | 0,00005 |
| 1670000 | 1,09E-05 | 5,88E-06 | 4,21E-05 | 4,26E-05 | 0,00005 |
| 1680000 | 1,08E-05 | 5,88E-06 | 4,19E-05 | 4,28E-05 | 0,00005 |
| 1690000 | 1,08E-05 | 5,84E-06 | 4,19E-05 | 4,26E-05 | 0,00005 |
| 1700000 | 1,08E-05 | 5,83E-06 | 4,17E-05 | 4,24E-05 | 0,00005 |

Tablica P.6. *log-likelihood* vrijednosti otpora za sve faze i sve razdiobe (MC metoda)

| Razdioba  | Log-likelihood |               |                |
|---|----------------|---------------|----------------|
|   | Otpor R1       | Otpor R2      | Otpor R3       |
| <b>Birnbaum-Saunders</b>                        | 3049070        | 3848360       | 3846210        |
| <b>Razdioba ekstremnih vrijednosti</b>          | 2968370        | 3767680       | 3765250        |
| <b>Gamma</b>                                    | 3049070        | 3848360       | 3846210        |
| <b>Poopćena razdioba ekstremnih vrijednosti</b> | 3035940        | 3837280       | 3833120        |
| <b>Inverzna Gaussova</b>                        | <b>3968010</b> | <b>476730</b> | <b>4765140</b> |
| <b>Log-logistic</b>                             | 3039770        | 3838830       | 383690         |
| <b>Logistic</b>                                 | 3039770        | 3838830       | 383690         |
| <b>Lognormalna</b>                              | 3049070        | 3848360       | 3846210        |
| <b>Nakagami</b>                                 | 3049070        | 3848360       | 3846210        |
| <b>Gaussova</b>                                 | 3049070        | 3848360       | 3846210        |
| <b>Ricianova</b>                                | 3049070        | 3848360       | 3846210        |
| <b>t razdioba</b>                               | 3049070        | 3848360       | 3846210        |
| <b>Weibullova</b>                               | 2969370        | 3768170       | 3765670        |

Tablica P.7. *log-likelihood* vrijednosti otpora za sve faze i sve razdiobe (AMC metoda)

| Razdioba                                 | Log-likelihood |                |                |
|--|----------------|----------------|----------------|
|  | Otpor R1       | Otpor R2       | Otpor R3       |
| Birnbaum-Saunders                        | 366391         | 5039930        | 4922980        |
| Razdioba ekstremnih vrijednosti          | 356655         | 4933380        | 4819980        |
| Gamma                                    | 366392         | 5039930        | 4922980        |
| Poopćena razdioba ekstremnih vrijednosti | 365259         | 5020740        | 4906370        |
| Inverzna Gaussova                        | <b>476664</b>  | <b>6243740</b> | <b>6099220</b> |
| Log-logistic                             | 365245         | 5027520        | 4910870        |
| Logistic                                 | 365245         | 5027520        | 4910870        |
| Lognormalna                              | 366391         | 5039930        | 4922980        |
| Nakagami                                 | 366392         | 5039930        | 4922980        |
| Gaussova                                 | 366392         | 5039930        | 4922980        |
| Ricianova                                | 366392         | 5039930        | 4922980        |
| t razdioba                               | 366392         | 5039930        | 4922980        |
| Weibullova                               | 356775         | 4934030        | 4820510        |

Tablica P.8. Stabilizacija rezultata modificirane AMC metode kod proračuna otpora R1

| M            | y_mean_std         | y_std_std       | y_low_std        | y_high_std       | tol          |
|--------------|--------------------|-----------------|------------------|------------------|--------------|
| 20000        | 0,001782559        | 0,00045387      | 0,00241078       | 0,007661052      | 0,005        |
| 30000        | 0,001361523        | 0,00028348      | 0,00540752       | 0,008699717      | 0,005        |
| 40000        | 0,00116601         | 0,00032086      | 0,00422609       | 0,006582421      | 0,005        |
| 50000        | 0,000909794        | 0,00029625      | 0,00679837       | 0,007161478      | 0,005        |
| 60000        | 0,000855133        | 0,00028199      | 0,00566668       | 0,005890184      | 0,005        |
| 70000        | 0,000727978        | 0,00035073      | 0,00571262       | 0,005302512      | 0,005        |
| <b>80000</b> | <b>0,000630456</b> | <b>0,000306</b> | <b>0,0049627</b> | <b>0,0046206</b> | <b>0,005</b> |
| 90000        | 0,000767221        | 0,00037157      | 0,00445781       | 0,004084888      | 0,005        |
| 100000       | 0,000746662        | 0,00033255      | 0,00399898       | 0,003653948      | 0,005        |
| 110000       | 0,000733639        | 0,00030567      | 0,00375582       | 0,00336914       | 0,005        |
| 120000       | 0,000769564        | 0,00028071      | 0,00350316       | 0,003116467      | 0,005        |
| 130000       | 0,000721959        | 0,00026742      | 0,00332617       | 0,002895901      | 0,005        |
| 140000       | 0,000720177        | 0,00026432      | 0,00308376       | 0,00269467       | 0,005        |
| 150000       | 0,000694762        | 0,00026246      | 0,0029245        | 0,002510988      | 0,005        |
| 160000       | 0,000692076        | 0,00024623      | 0,00273704       | 0,002348827      | 0,005        |
| 170000       | 0,00065952         | 0,00030961      | 0,00258695       | 0,002249177      | 0,005        |
| 180000       | 0,000660622        | 0,00029319      | 0,00252239       | 0,002267087      | 0,005        |
| 190000       | 0,000628454        | 0,00028356      | 0,00257727       | 0,002171071      | 0,005        |
| 200000       | 0,000659202        | 0,00027595      | 0,0024455        | 0,0020603        | 0,005        |



Tablica P.9. Stabilizacija rezultata modificirane AMC metode kod proračuna otpora R2

| M            | y_mean_std         | y_std_std      | y_low_std        | y_high_std       | tol          |
|--------------|--------------------|----------------|------------------|------------------|--------------|
| 20000        | 0,000749044        | 4,8131E-05     | 0,00871195       | 0,006283708      | 0,005        |
| 30000        | 0,001133214        | 0,00039003     | 0,00593845       | 0,003675285      | 0,005        |
| <b>40000</b> | <b>0,000954621</b> | <b>0,00047</b> | <b>0,0042178</b> | <b>0,0026076</b> | <b>0,005</b> |
| 50000        | 0,000807136        | 0,00040944     | 0,00327148       | 0,002046845      | 0,005        |
| 60000        | 0,000832254        | 0,00042928     | 0,00292674       | 0,001714585      | 0,005        |
| 70000        | 0,000838694        | 0,00045467     | 0,00309553       | 0,002214631      | 0,005        |
| 80000        | 0,000745648        | 0,00047062     | 0,00268194       | 0,001941156      | 0,005        |
| 90000        | 0,000659455        | 0,00046625     | 0,00236858       | 0,001713221      | 0,005        |
| 100000       | 0,000891936        | 0,00042946     | 0,00212898       | 0,001532678      | 0,005        |
| 110000       | 0,000812847        | 0,00041385     | 0,00206366       | 0,001789086      | 0,005        |
| 120000       | 0,000760017        | 0,00039795     | 0,00232195       | 0,002009726      | 0,005        |
| 130000       | 0,000742511        | 0,00041973     | 0,00278763       | 0,002299628      | 0,005        |
| 140000       | 0,000690396        | 0,00039458     | 0,00268918       | 0,00212933       | 0,005        |
| 150000       | 0,000662714        | 0,00036735     | 0,00250511       | 0,001982667      | 0,005        |
| 160000       | 0,000630852        | 0,00035824     | 0,00239087       | 0,00212965       | 0,005        |
| 170000       | 0,000633469        | 0,00034348     | 0,00231122       | 0,002064529      | 0,005        |
| 180000       | 0,000630012        | 0,0003246      | 0,00218797       | 0,001960907      | 0,005        |
| 190000       | 0,000595986        | 0,0003093      | 0,00209694       | 0,001862942      | 0,005        |
| 200000       | 0,000614257        | 0,00032285     | 0,0020200        | 0,0018490        | 0,005        |

Tablica P.10. Stabilizacija rezultata modificirane AMC metode kod proračuna otpora R3

| M            | y_mean_std         | y_std_std       | y_low_std        | y_high_std       | tol          |
|--------------|--------------------|-----------------|------------------|------------------|--------------|
| 20000        | 0,003184572        | 0,00087935      | 0,00059761       | 0,000712268      | 0,005        |
| 30000        | 0,00254688         | 0,00096198      | 0,00718409       | 0,00258705       | 0,005        |
| 40000        | 0,001810878        | 0,00101535      | 0,0051242        | 0,002291368      | 0,005        |
| 50000        | 0,001612839        | 0,00081765      | 0,00416552       | 0,001962578      | 0,005        |
| 60000        | 0,001316895        | 0,00085915      | 0,00601168       | 0,00400899       | 0,005        |
| 70000        | 0,001147198        | 0,0007404       | 0,0056679        | 0,004764731      | 0,005        |
| 80000        | 0,001036645        | 0,00070989      | 0,005244         | 0,004129268      | 0,005        |
| <b>90000</b> | <b>0,000936872</b> | <b>0,000629</b> | <b>0,0046888</b> | <b>0,0036877</b> | <b>0,005</b> |
| 100000       | 0,000856031        | 0,00060302      | 0,00439151       | 0,00362985       | 0,005        |
| 110000       | 0,000787676        | 0,00054633      | 0,00397242       | 0,003326135      | 0,005        |
| 120000       | 0,000804298        | 0,0005011       | 0,00371237       | 0,003105108      | 0,005        |
| 130000       | 0,000740042        | 0,00046102      | 0,00341888       | 0,002856288      | 0,005        |
| 140000       | 0,000747958        | 0,00044144      | 0,00356347       | 0,002989372      | 0,005        |
| 150000       | 0,000696885        | 0,00041174      | 0,00344665       | 0,002851052      | 0,005        |
| 160000       | 0,000661372        | 0,00041862      | 0,00323793       | 0,002676164      | 0,005        |
| 170000       | 0,00063089         | 0,00039325      | 0,00304843       | 0,00251405       | 0,005        |
| 180000       | 0,000635936        | 0,00037505      | 0,00296845       | 0,002490112      | 0,005        |
| 190000       | 0,000614878        | 0,00035586      | 0,00282469       | 0,002390928      | 0,005        |
| 200000       | 0,000588643        | 0,00034348      | 0,0026798        | 0,0022700        | 0,005        |

Tablica P.11. Izmjerene vrijednosti struje i napona na strani A za cijeli mjesec

| Izmjerene vrijednosti struje i napona na strani A za cijeli mjesec |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|
| Redni broj   | Napon [kV] | Struja [A] | Redni Broj | Napon [kV] | Struja [A] | Redni Broj | Napon [kV] | Struja [A] |
| 1  | 116,104    | 34,082     | 961        | 106,073    | 36,352     | 1921       | 116,104    | 35,712     |
| 2  | 112,204    | 33,080     | 962        | 121,709    | 30,496     | 1922       | 116,104    | 36,120     |
| 3  | 116,104    | 30,732     | 963        | 121,709    | 28,912     | 1923       | 119,871    | 33,376     |
| 4  | 116,104    | 30,732     | 964        | 114,171    | 30,001     | 1924       | 116,104    | 34,459     |
| 5  | 116,104    | 29,501     | 965        | 106,073    | 32,830     | 1925       | 116,104    | 33,650     |
| 6  | 116,104    | 29,501     | 966        | 121,709    | 26,976     | 1926       | 116,104    | 31,969     |
| 7  | 116,104    | 28,279     | 967        | 121,709    | 27,466     | 1927       | 116,104    | 32,424     |
| 8  | 116,104    | 28,792     | 968        | 114,171    | 27,522     | 1928       | 116,104    | 31,205     |
| 9  | 116,104    | 27,600     | 969        | 121,709    | 26,329     | 1929       | 116,104    | 31,205     |
| 10   | 116,104    | 27,064     | 970        | 106,073    | 30,210     | 1930       | 116,104    | 30,535     |
| 11   | 116,104    | 27,600     | 971        | 121,709    | 24,668     | 1931       | 116,104    | 30,535     |
| 12   | 116,104    | 27,600     | 972        | 114,171    | 28,067     | 1932       | 114,171    | 29,852     |
| 13   | 116,104    | 27,064     | 973        | 106,073    | 30,210     | 1933       | 119,871    | 29,051     |
| 14   | 116,104    | 27,064     | 974        | 121,709    | 25,818     | 1934       | 116,104    | 30,535     |
| 15   | 116,104    | 27,064     | 975        | 121,709    | 26,329     | 1935       | 116,104    | 28,792     |
| 16   | 116,104    | 27,064     | 976        | 114,171    | 28,067     | 1936       | 116,104    | 30,535     |
| 17   | 116,104    | 27,600     | 977        | 106,073    | 30,210     | 1937       | 116,104    | 28,792     |
| 18   | 116,104    | 27,064     | 978        | 121,709    | 24,668     | 1938       | 116,104    | 30,535     |
| 19   | 116,104    | 28,279     | 979        | 121,709    | 27,466     | 1939       | 116,104    | 28,792     |
| 20   | 116,104    | 28,792     | 980        | 114,171    | 28,067     | 1940       | 116,104    | 31,725     |
| 21   | 116,104    | 27,064     | 981        | 106,073    | 32,291     | 1941       | 116,104    | 31,205     |
| 22   | 116,104    | 29,501     | 982        | 121,709    | 28,143     | 1942       | 116,104    | 32,424     |
| 23   | 116,104    | 29,994     | 983        | 121,709    | 29,768     | 1943       | 116,104    | 31,205     |
| 24   | 112,204    | 29,261     | 984        | 106,073    | 34,156     | 1944       | 116,104    | 32,925     |
| 25   | 116,104    | 29,994     | 985        | 114,171    | 31,252     | 1945       | 116,104    | 31,725     |
| 26   | 116,104    | 28,792     | 986        | 121,709    | 31,408     | 1946       | 116,104    | 34,133     |
| 27   | 116,104    | 29,994     | 987        | 121,709    | 31,682     | 1947       | 116,104    | 33,650     |
| 28   | 119,871    | 30,728     | 988        | 106,073    | 38,180     | 1948       | 112,204    | 36,577     |
| 29   | 112,204    | 33,551     | 989        | 114,171    | 35,043     | 1949       | 116,104    | 36,120     |
| 30   | 116,104    | 32,424     | 990        | 121,709    | 29,316     | 1950       | 114,171    | 36,731     |
| 31   | 116,104    | 32,424     | 991        | 106,073    | 27,640     | 1951       | 116,104    | 37,363     |
| 32   | 114,171    | 34,219     | 992        | 121,709    | 24,089     | 1952       | 112,204    | 39,558     |
| 33   | 116,104    | 33,211     | 993        | 106,073    | 26,379     | 1953       | 116,104    | 39,493     |
| 34   | 112,204    | 34,819     | 994        | 114,171    | 24,508     | 1954       | 116,104    | 38,229     |
| 35   | 114,171    | 35,043     | 995        | 121,709    | 21,290     | 1955       | 114,171    | 41,450     |
| 36   | 116,104    | 33,650     | 996        | 106,073    | 26,379     | 1956       | 112,204    | 39,558     |
| 37   | 112,204    | 35,657     | 997        | 121,709    | 22,990     | 1957       | 116,104    | 39,164     |
| 38   | 116,104    | 33,211     | 998        | 106,073    | 26,379     | 1958       | 114,171    | 40,162     |
| 39   | 114,171    | 35,043     | 999        | 121,709    | 21,907     | 1959       | 116,104    | 38,611     |
| 40   | 112,204    | 34,366     | 1000       | 106,073    | 26,379     | 1960       | 112,204    | 39,558     |
| 41   | 116,104    | 33,211     | 1001       | 114,171    | 23,881     | 1961       | 114,171    | 38,876     |
| 42   | 114,171    | 33,774     | 1002       | 121,709    | 22,990     | 1962       | 116,104    | 38,229     |
| 43   | 116,104    | 33,211     | 1003       | 106,073    | 25,136     | 1963       | 112,204    | 39,558     |
| 44   | 112,204    | 35,657     | 1004       | 121,709    | 22,402     | 1964       | 116,104    | 39,493     |
| 45   | 112,204    | 34,366     | 1005       | 114,171    | 23,353     | 1965       | 112,204    | 40,526     |
| 46   | 116,104    | 33,211     | 1006       | 106,073    | 26,379     | 1966       | 114,171    | 40,162     |
| 47   | 114,171    | 33,774     | 1007       | 121,709    | 21,907     | 1967       | 112,204    | 40,526     |
| 48   | 112,204    | 33,961     | 1008       | 106,073    | 26,379     | 1968       | 116,104    | 39,493     |
| 49   | 116,104    | 34,459     | 1009       | 121,709    | 21,907     | 1969       | 114,171    | 40,162     |
| 50   | 114,171    | 32,510     | 1010       | 106,073    | 26,379     | 1970       | 116,104    | 38,229     |
| 51   | 112,204    | 34,366     | 1011       | 114,171    | 24,508     | 1971       | 112,204    | 40,526     |
| 52   | 116,104    | 33,211     | 1012       | 121,709    | 22,990     | 1972       | 116,104    | 38,229     |
| 53   | 114,171    | 32,510     | 1013       | 106,073    | 25,136     | 1973       | 116,104    | 38,229     |
| 54   | 112,204    | 33,080     | 1014       | 121,709    | 22,990     | 1974       | 114,171    | 40,162     |
| 55   | 116,104    | 33,211     | 1015       | 114,171    | 28,757     | 1975       | 116,104    | 36,969     |
| 56   | 114,171    | 32,510     | 1016       | 114,171    | 32,972     | 1976       | 112,204    | 39,558     |
| 57   | 116,104    | 31,969     | 1017       | 114,171    | 33,774     | 1977       | 116,104    | 36,969     |
| 58   | 112,204    | 33,080     | 1018       | 121,709    | 31,308     | 1978       | 116,104    | 37,363     |
| 59   | 116,104    | 31,969     | 1019       | 106,073    | 34,992     | 1979       | 114,171    | 37,594     |
| 60   | 114,171    | 32,510     | 1020       | 121,709    | 31,308     | 1980       | 116,104    | 36,969     |
| 61   | 116,104    | 32,424     | 1021       | 114,171    | 32,510     | 1981       | 116,104    | 35,712     |
| 62   | 112,204    | 31,362     | 1022       | 106,073    | 34,992     | 1982       | 116,104    | 36,120     |
| 63   | 116,104    | 31,205     | 1023       | 121,709    | 30,496     | 1983       | 112,204    | 36,094     |

|     |         |        |      |         |        |      |         |        |
|-----|---------|--------|------|---------|--------|------|---------|--------|
| 64  | 114,171 | 32,510 | 1024 | 121,709 | 30,496 | 1984 | 116,104 | 36,120 |
| 65  | 116,104 | 31,969 | 1025 | 106,073 | 34,546 | 1985 | 116,104 | 34,459 |
| 66  | 112,204 | 31,800 | 1026 | 114,171 | 32,096 | 1986 | 116,104 | 36,120 |
| 67  | 116,104 | 31,969 | 1027 | 121,709 | 31,682 | 1987 | 114,171 | 36,731 |
| 68  | 116,104 | 31,969 | 1028 | 106,073 | 35,924 | 1988 | 116,104 | 35,712 |
| 69  | 112,204 | 33,080 | 1029 | 121,709 | 31,308 | 1989 | 116,104 | 36,120 |
| 70  | 116,104 | 31,969 | 1030 | 114,171 | 32,510 | 1990 | 116,104 | 35,712 |
| 71  | 114,171 | 32,510 | 1031 | 121,709 | 31,308 | 1991 | 112,204 | 37,375 |
| 72  | 116,104 | 33,211 | 1032 | 106,073 | 37,718 | 1992 | 116,104 | 37,363 |
| 73  | 112,204 | 34,366 | 1033 | 121,709 | 32,872 | 1993 | 116,104 | 36,120 |
| 74  | 116,104 | 33,650 | 1034 | 114,171 | 34,659 | 1994 | 116,104 | 36,120 |
| 75  | 114,171 | 35,043 | 1035 | 106,073 | 39,089 | 1995 | 116,104 | 36,969 |
| 76  | 116,104 | 35,712 | 1036 | 121,709 | 34,931 | 1996 | 112,204 | 39,952 |
| 77  | 112,204 | 37,890 | 1037 | 121,709 | 35,266 | 1997 | 116,104 | 38,229 |
| 78  | 116,104 | 40,442 | 1038 | 106,073 | 43,962 | 1998 | 116,104 | 39,493 |
| 79  | 114,171 | 44,378 | 1039 | 114,171 | 43,465 | 1999 | 116,104 | 40,760 |
| 80  | 112,204 | 48,027 | 1040 | 106,073 | 47,960 | 2000 | 114,171 | 45,036 |
| 81  | 114,171 | 48,522 | 1041 | 121,709 | 43,037 | 2001 | 112,204 | 48,027 |
| 82  | 112,204 | 49,373 | 1042 | 106,073 | 49,381 | 2002 | 116,104 | 46,858 |
| 83  | 114,171 | 47,200 | 1043 | 121,709 | 43,037 | 2003 | 114,171 | 47,407 |
| 84  | 112,204 | 48,027 | 1044 | 106,073 | 48,196 | 2004 | 116,104 | 46,618 |
| 85  | 114,171 | 46,092 | 1045 | 121,709 | 40,773 | 2005 | 112,204 | 47,155 |
| 86  | 112,204 | 46,683 | 1046 | 106,073 | 46,783 | 2006 | 116,104 | 44,033 |
| 87  | 112,204 | 45,563 | 1047 | 114,171 | 44,778 | 2007 | 114,171 | 47,651 |
| 88  | 116,104 | 42,742 | 1048 | 121,709 | 40,773 | 2008 | 116,104 | 44,286 |
| 89  | 114,171 | 43,465 | 1049 | 106,073 | 46,783 | 2009 | 112,204 | 48,238 |
| 90  | 116,104 | 41,452 | 1050 | 121,709 | 40,773 | 2010 | 116,104 | 45,571 |
| 91  | 112,204 | 42,893 | 1051 | 106,073 | 45,372 | 2011 | 114,171 | 46,092 |
| 92  | 114,171 | 41,126 | 1052 | 114,171 | 40,844 | 2012 | 116,104 | 45,571 |
| 93  | 116,104 | 38,877 | 1053 | 121,709 | 37,361 | 2013 | 112,204 | 45,563 |
| 94  | 112,204 | 37,890 | 1054 | 106,073 | 40,080 | 2014 | 116,104 | 43,003 |
| 95  | 116,104 | 35,348 | 1055 | 121,709 | 32,513 | 2015 | 114,171 | 41,126 |
| 96  | 116,104 | 33,211 | 1056 | 106,073 | 36,352 | 2016 | 116,104 | 39,493 |
| 97  | 114,171 | 33,375 | 1057 | 114,171 | 32,510 | 2017 | 116,104 | 36,969 |
| 98  | 116,104 | 31,562 | 1058 | 121,709 | 30,108 | 2018 | 116,104 | 35,712 |
| 99  | 112,204 | 31,800 | 1059 | 106,073 | 32,291 | 2019 | 116,104 | 34,459 |
| 100 | 116,104 | 29,501 | 1060 | 121,709 | 28,613 | 2020 | 112,204 | 35,657 |
| 101 | 116,104 | 29,501 | 1061 | 114,171 | 30,001 | 2021 | 116,104 | 33,211 |
| 102 | 114,171 | 28,757 | 1062 | 114,171 | 28,757 | 2022 | 116,104 | 32,424 |
| 103 | 116,104 | 28,279 | 1063 | 114,171 | 28,757 | 2023 | 116,104 | 32,424 |
| 104 | 112,204 | 29,261 | 1064 | 121,709 | 25,818 | 2024 | 118,003 | 30,703 |
| 105 | 116,104 | 27,600 | 1065 | 106,073 | 30,210 | 2025 | 116,104 | 29,994 |
| 106 | 114,171 | 27,522 | 1066 | 121,709 | 25,203 | 2026 | 116,104 | 31,725 |
| 107 | 116,104 | 27,064 | 1067 | 114,171 | 27,522 | 2027 | 116,104 | 29,994 |
| 108 | 112,204 | 28,559 | 1068 | 106,073 | 28,918 | 2028 | 116,104 | 30,535 |
| 109 | 116,104 | 25,859 | 1069 | 121,709 | 26,329 | 2029 | 116,104 | 29,994 |
| 110 | 112,204 | 28,005 | 1070 | 121,709 | 25,203 | 2030 | 114,171 | 29,279 |
| 111 | 116,104 | 26,420 | 1071 | 106,073 | 30,210 | 2031 | 116,104 | 30,535 |
| 112 | 116,104 | 27,064 | 1072 | 114,171 | 28,067 | 2032 | 116,104 | 28,792 |
| 113 | 114,171 | 26,867 | 1073 | 121,709 | 25,203 | 2033 | 116,104 | 30,535 |
| 114 | 116,104 | 27,600 | 1074 | 106,073 | 30,210 | 2034 | 116,104 | 29,994 |
| 115 | 116,104 | 25,859 | 1075 | 121,709 | 25,818 | 2035 | 116,104 | 29,994 |
| 116 | 112,204 | 28,005 | 1076 | 114,171 | 28,757 | 2036 | 116,104 | 29,994 |
| 117 | 116,104 | 27,600 | 1077 | 106,073 | 32,830 | 2037 | 112,204 | 32,289 |
| 118 | 114,171 | 28,067 | 1078 | 121,709 | 28,143 | 2038 | 116,104 | 29,994 |
| 119 | 116,104 | 27,064 | 1079 | 106,073 | 32,291 | 2039 | 116,104 | 31,725 |
| 120 | 116,104 | 27,600 | 1080 | 121,709 | 29,768 | 2040 | 116,104 | 30,535 |
| 121 | 112,204 | 28,559 | 1081 | 114,171 | 31,733 | 2041 | 116,104 | 31,122 |
| 122 | 116,104 | 28,187 | 1082 | 106,073 | 35,490 | 2042 | 116,104 | 31,725 |
| 123 | 116,104 | 28,187 | 1083 | 121,709 | 32,872 | 2043 | 116,104 | 31,725 |
| 124 | 114,171 | 29,852 | 1084 | 106,073 | 37,718 | 2044 | 116,104 | 32,925 |
| 125 | 116,104 | 30,535 | 1085 | 121,709 | 34,067 | 2045 | 114,171 | 34,219 |
| 126 | 112,204 | 33,551 | 1086 | 106,073 | 39,089 | 2046 | 116,104 | 35,348 |
| 127 | 116,104 | 31,205 | 1087 | 121,709 | 35,266 | 2047 | 116,104 | 34,882 |
| 128 | 114,171 | 34,710 | 1088 | 106,073 | 38,691 | 2048 | 116,104 | 36,570 |
| 129 | 116,104 | 32,424 | 1089 | 114,171 | 34,659 | 2049 | 112,204 | 36,953 |
| 130 | 112,204 | 34,819 | 1090 | 106,073 | 38,691 | 2050 | 116,104 | 37,363 |
| 131 | 114,171 | 35,472 | 1091 | 121,709 | 32,513 | 2051 | 114,171 | 37,594 |

|     |         |        |      |         |        |      |         |        |
|-----|---------|--------|------|---------|--------|------|---------|--------|
| 132 | 116,104 | 34,459 | 1092 | 106,073 | 37,305 | 2052 | 116,104 | 37,363 |
| 133 | 112,204 | 36,094 | 1093 | 121,709 | 34,067 | 2053 | 112,204 | 39,206 |
| 134 | 112,204 | 36,953 | 1094 | 106,073 | 37,305 | 2054 | 114,171 | 38,876 |
| 135 | 114,171 | 37,995 | 1095 | 121,709 | 33,720 | 2055 | 116,104 | 38,229 |
| 136 | 112,204 | 39,558 | 1096 | 106,073 | 37,718 | 2056 | 112,204 | 41,248 |
| 137 | 114,171 | 38,876 | 1097 | 114,171 | 33,375 | 2057 | 112,204 | 39,558 |
| 138 | 116,104 | 38,229 | 1098 | 106,073 | 37,305 | 2058 | 116,104 | 39,164 |
| 139 | 112,204 | 41,248 | 1099 | 121,709 | 33,720 | 2059 | 114,171 | 41,450 |
| 140 | 114,171 | 38,876 | 1100 | 106,073 | 37,305 | 2060 | 112,204 | 40,866 |
| 141 | 112,204 | 41,847 | 1101 | 121,709 | 32,197 | 2061 | 116,104 | 39,493 |
| 142 | 114,171 | 38,876 | 1102 | 106,073 | 38,691 | 2062 | 114,171 | 41,450 |
| 143 | 112,204 | 39,558 | 1103 | 114,171 | 34,659 | 2063 | 112,204 | 41,847 |
| 144 | 114,171 | 37,995 | 1104 | 114,171 | 34,659 | 2064 | 114,171 | 42,741 |
| 145 | 112,204 | 36,953 | 1105 | 114,171 | 33,375 | 2065 | 116,104 | 40,442 |
| 146 | 116,104 | 33,650 | 1106 | 106,073 | 35,924 | 2066 | 112,204 | 41,847 |
| 147 | 114,171 | 35,472 | 1107 | 106,073 | 37,718 | 2067 | 114,171 | 41,450 |
| 148 | 112,204 | 33,551 | 1108 | 121,709 | 31,308 | 2068 | 116,104 | 40,442 |
| 149 | 114,171 | 32,972 | 1109 | 106,073 | 34,546 | 2069 | 112,204 | 40,866 |
| 150 | 116,104 | 32,424 | 1110 | 121,709 | 31,682 | 2070 | 114,171 | 41,450 |
| 151 | 112,204 | 32,289 | 1111 | 106,073 | 34,992 | 2071 | 116,104 | 39,493 |
| 152 | 112,204 | 32,289 | 1112 | 114,171 | 32,510 | 2072 | 112,204 | 40,866 |
| 153 | 116,104 | 29,994 | 1113 | 114,171 | 33,375 | 2073 | 116,104 | 38,229 |
| 154 | 114,171 | 29,279 | 1114 | 114,171 | 32,510 | 2074 | 114,171 | 37,594 |
| 155 | 112,204 | 31,036 | 1115 | 106,073 | 34,546 | 2075 | 116,104 | 38,611 |
| 156 | 116,104 | 27,600 | 1116 | 121,709 | 30,496 | 2076 | 112,204 | 36,953 |
| 157 | 114,171 | 29,279 | 1117 | 106,073 | 34,992 | 2077 | 116,104 | 35,712 |
| 158 | 116,104 | 27,600 | 1118 | 121,709 | 30,108 | 2078 | 116,104 | 36,120 |
| 159 | 112,204 | 29,167 | 1119 | 114,171 | 32,510 | 2079 | 112,204 | 36,953 |
| 160 | 116,104 | 27,600 | 1120 | 106,073 | 34,992 | 2080 | 116,104 | 35,712 |
| 161 | 116,104 | 27,600 | 1121 | 121,709 | 30,496 | 2081 | 114,171 | 36,731 |
| 162 | 114,171 | 28,067 | 1122 | 106,073 | 34,546 | 2082 | 116,104 | 34,459 |
| 163 | 116,104 | 27,032 | 1123 | 121,709 | 31,682 | 2083 | 112,204 | 36,953 |
| 164 | 112,204 | 28,559 | 1124 | 106,073 | 34,546 | 2084 | 116,104 | 36,120 |
| 165 | 116,104 | 28,187 | 1125 | 121,709 | 30,108 | 2085 | 116,104 | 35,712 |
| 166 | 114,171 | 29,279 | 1126 | 106,073 | 34,992 | 2086 | 114,171 | 36,316 |
| 167 | 116,104 | 27,600 | 1127 | 114,171 | 32,510 | 2087 | 116,104 | 35,712 |
| 168 | 112,204 | 28,559 | 1128 | 121,709 | 31,682 | 2088 | 116,104 | 36,969 |
| 169 | 116,104 | 28,792 | 1129 | 106,073 | 34,992 | 2089 | 112,204 | 38,661 |
| 170 | 114,171 | 29,279 | 1130 | 121,709 | 31,682 | 2090 | 116,104 | 38,611 |
| 171 | 116,104 | 28,792 | 1131 | 106,073 | 37,305 | 2091 | 116,104 | 38,229 |
| 172 | 112,204 | 32,289 | 1132 | 114,171 | 36,316 | 2092 | 114,171 | 40,162 |
| 173 | 116,104 | 31,205 | 1133 | 106,073 | 38,691 | 2093 | 116,104 | 40,442 |
| 174 | 112,204 | 34,366 | 1134 | 121,709 | 36,145 | 2094 | 112,204 | 43,491 |
| 175 | 114,171 | 38,229 | 1135 | 106,073 | 45,372 | 2095 | 116,104 | 43,003 |
| 176 | 112,204 | 41,560 | 1136 | 121,709 | 41,799 | 2096 | 114,171 | 47,200 |
| 177 | 114,171 | 42,154 | 1137 | 106,073 | 52,226 | 2097 | 116,104 | 47,714 |
| 178 | 112,204 | 42,893 | 1138 | 121,709 | 44,277 | 2098 | 112,204 | 50,918 |
| 179 | 114,171 | 42,154 | 1139 | 106,073 | 49,193 | 2099 | 114,171 | 49,845 |
| 180 | 112,204 | 41,847 | 1140 | 114,171 | 47,200 | 2100 | 116,104 | 49,015 |
| 181 | 114,171 | 42,154 | 1141 | 106,073 | 48,196 | 2101 | 112,204 | 49,578 |
| 182 | 112,204 | 40,526 | 1142 | 121,709 | 41,799 | 2102 | 116,104 | 47,913 |
| 183 | 114,171 | 41,126 | 1143 | 121,709 | 42,005 | 2103 | 112,204 | 48,238 |
| 184 | 112,204 | 40,229 | 1144 | 106,073 | 49,611 | 2104 | 116,104 | 45,571 |
| 185 | 116,104 | 40,442 | 1145 | 114,171 | 44,778 | 2105 | 116,104 | 45,325 |
| 186 | 114,171 | 39,535 | 1146 | 106,073 | 47,960 | 2106 | 114,171 | 47,407 |
| 187 | 112,204 | 39,206 | 1147 | 121,709 | 40,773 | 2107 | 116,104 | 44,286 |
| 188 | 114,171 | 38,531 | 1148 | 121,709 | 40,773 | 2108 | 116,104 | 44,286 |
| 189 | 112,204 | 37,890 | 1149 | 106,073 | 44,266 | 2109 | 116,104 | 41,721 |
| 190 | 116,104 | 34,082 | 1150 | 114,171 | 39,535 | 2110 | 112,204 | 42,177 |
| 191 | 112,204 | 34,366 | 1151 | 121,709 | 36,145 | 2111 | 116,104 | 39,164 |
| 192 | 116,104 | 31,562 | 1152 | 106,073 | 37,305 | 2112 | 116,104 | 36,969 |
| 193 | 114,171 | 30,001 | 1153 | 121,709 | 32,513 | 2113 | 116,104 | 35,712 |
| 194 | 116,104 | 29,501 | 1154 | 114,171 | 33,375 | 2114 | 116,104 | 34,459 |
| 195 | 112,204 | 29,261 | 1155 | 114,171 | 31,252 | 2115 | 116,104 | 33,650 |
| 196 | 116,104 | 27,064 | 1156 | 114,171 | 31,252 | 2116 | 116,104 | 32,424 |
| 197 | 116,104 | 28,279 | 1157 | 121,709 | 27,722 | 2117 | 116,104 | 31,969 |
| 198 | 114,171 | 26,297 | 1158 | 114,171 | 30,001 | 2118 | 116,104 | 31,205 |
| 199 | 116,104 | 27,064 | 1159 | 114,171 | 29,279 | 2119 | 116,104 | 29,994 |

|     |         |        |      |         |        |      |         |        |
|-----|---------|--------|------|---------|--------|------|---------|--------|
| 200 | 116,104 | 27,600 | 1160 | 114,171 | 28,067 | 2120 | 116,104 | 29,994 |
| 201 | 112,204 | 26,758 | 1161 | 121,709 | 26,329 | 2121 | 116,104 | 29,994 |
| 202 | 116,104 | 25,859 | 1162 | 106,073 | 30,210 | 2122 | 116,104 | 29,355 |
| 203 | 116,104 | 26,420 | 1163 | 121,709 | 25,203 | 2123 | 119,871 | 27,887 |
| 204 | 114,171 | 26,297 | 1164 | 114,171 | 27,522 | 2124 | 116,104 | 28,792 |
| 205 | 116,104 | 26,420 | 1165 | 121,709 | 26,329 | 2125 | 116,104 | 27,600 |
| 206 | 116,104 | 24,665 | 1166 | 114,171 | 28,067 | 2126 | 112,204 | 29,167 |
| 207 | 112,204 | 26,130 | 1167 | 114,171 | 26,867 | 2127 | 116,104 | 29,355 |
| 208 | 116,104 | 26,420 | 1168 | 114,171 | 27,522 | 2128 | 116,104 | 26,420 |
| 209 | 116,104 | 25,859 | 1169 | 121,709 | 26,329 | 2129 | 116,104 | 29,355 |
| 210 | 116,104 | 25,252 | 1170 | 114,171 | 28,067 | 2130 | 116,104 | 27,600 |
| 211 | 114,171 | 26,867 | 1171 | 114,171 | 27,522 | 2131 | 116,104 | 28,187 |
| 212 | 116,104 | 25,859 | 1172 | 114,171 | 29,279 | 2132 | 116,104 | 27,600 |
| 213 | 116,104 | 27,600 | 1173 | 121,709 | 27,466 | 2133 | 116,104 | 28,792 |
| 214 | 112,204 | 29,793 | 1174 | 114,171 | 30,001 | 2134 | 116,104 | 28,187 |
| 215 | 116,104 | 28,279 | 1175 | 114,171 | 30,502 | 2135 | 116,104 | 30,535 |
| 216 | 114,171 | 31,252 | 1176 | 114,171 | 30,001 | 2136 | 119,871 | 27,301 |
| 217 | 116,104 | 31,969 | 1177 | 121,709 | 29,768 | 2137 | 116,104 | 28,187 |
| 218 | 112,204 | 33,080 | 1178 | 106,073 | 34,156 | 2138 | 116,104 | 28,822 |
| 219 | 112,204 | 34,819 | 1179 | 114,171 | 34,219 | 2139 | 116,104 | 28,822 |
| 220 | 116,104 | 33,211 | 1180 | 121,709 | 31,682 | 2140 | 116,104 | 28,822 |
| 221 | 114,171 | 43,465 | 1181 | 106,073 | 37,718 | 2141 | 116,104 | 30,535 |
| 222 | 112,204 | 46,505 | 1182 | 121,709 | 32,513 | 2142 | 116,104 | 31,122 |
| 223 | 114,171 | 45,704 | 1183 | 114,171 | 36,316 | 2143 | 116,104 | 32,925 |
| 224 | 112,204 | 46,505 | 1184 | 114,171 | 35,946 | 2144 | 112,204 | 34,633 |
| 225 | 114,171 | 44,378 | 1185 | 114,171 | 37,237 | 2145 | 116,104 | 34,133 |
| 226 | 110,200 | 45,977 | 1186 | 121,709 | 35,266 | 2146 | 116,104 | 34,133 |
| 227 | 112,204 | 45,013 | 1187 | 106,073 | 38,691 | 2147 | 116,104 | 35,348 |
| 228 | 114,171 | 44,237 | 1188 | 121,709 | 33,416 | 2148 | 114,171 | 37,189 |
| 229 | 112,204 | 43,808 | 1189 | 106,073 | 37,305 | 2149 | 116,104 | 37,363 |
| 230 | 114,171 | 42,908 | 1190 | 114,171 | 36,316 | 2150 | 112,204 | 40,389 |
| 231 | 112,204 | 42,460 | 1191 | 106,073 | 38,691 | 2151 | 116,104 | 39,862 |
| 232 | 114,171 | 41,729 | 1192 | 121,709 | 34,067 | 2152 | 112,204 | 41,248 |
| 233 | 114,171 | 41,579 | 1193 | 121,709 | 32,513 | 2153 | 116,104 | 41,118 |
| 234 | 114,171 | 43,053 | 1194 | 106,073 | 38,691 | 2154 | 114,171 | 41,814 |
| 235 | 116,104 | 40,887 | 1195 | 114,171 | 35,946 | 2155 | 116,104 | 41,118 |
| 236 | 112,204 | 43,660 | 1196 | 114,171 | 36,316 | 2156 | 112,204 | 42,547 |
| 237 | 116,104 | 40,887 | 1197 | 114,171 | 34,659 | 2157 | 116,104 | 40,271 |
| 238 | 114,171 | 41,579 | 1198 | 106,073 | 40,080 | 2158 | 114,171 | 41,814 |
| 239 | 112,204 | 42,308 | 1199 | 121,709 | 33,416 | 2159 | 116,104 | 39,862 |
| 240 | 116,104 | 44,809 | 1200 | 121,709 | 33,720 | 2160 | 112,204 | 39,952 |
| 241 | 114,171 | 48,135 | 1201 | 106,073 | 39,089 | 2161 | 116,104 | 39,032 |
| 242 | 112,204 | 47,719 | 1202 | 114,171 | 34,659 | 2162 | 116,104 | 37,363 |
| 243 | 116,104 | 46,116 | 1203 | 106,073 | 38,691 | 2163 | 114,171 | 37,189 |
| 244 | 114,171 | 46,802 | 1204 | 121,709 | 32,513 | 2164 | 116,104 | 35,348 |
| 245 | 116,104 | 46,116 | 1205 | 106,073 | 37,305 | 2165 | 116,104 | 34,133 |
| 246 | 112,204 | 43,808 | 1206 | 121,709 | 33,720 | 2166 | 112,204 | 35,319 |
| 247 | 114,171 | 30,821 | 1207 | 114,171 | 33,375 | 2167 | 116,104 | 32,925 |
| 248 | 116,104 | 30,732 | 1208 | 106,073 | 35,924 | 2168 | 116,104 | 32,925 |
| 249 | 112,204 | 30,527 | 1209 | 121,709 | 32,513 | 2169 | 116,104 | 32,925 |
| 250 | 116,104 | 29,501 | 1210 | 106,073 | 37,305 | 2170 | 116,104 | 31,725 |
| 251 | 114,171 | 30,821 | 1211 | 121,709 | 31,308 | 2171 | 116,104 | 31,725 |
| 252 | 116,104 | 30,732 | 1212 | 114,171 | 33,375 | 2172 | 116,104 | 30,535 |
| 253 | 116,104 | 30,308 | 1213 | 114,171 | 33,375 | 2173 | 116,104 | 31,122 |
| 254 | 112,204 | 31,800 | 1214 | 114,171 | 33,026 | 2174 | 116,104 | 30,535 |
| 255 | 116,104 | 30,308 | 1215 | 121,709 | 32,513 | 2175 | 116,104 | 29,355 |
| 256 | 112,204 | 30,527 | 1216 | 106,073 | 35,924 | 2176 | 116,104 | 30,535 |
| 257 | 116,104 | 30,308 | 1217 | 121,709 | 32,872 | 2177 | 116,104 | 31,122 |
| 258 | 116,104 | 31,562 | 1218 | 106,073 | 35,924 | 2178 | 116,104 | 29,355 |
| 259 | 116,104 | 30,308 | 1219 | 114,171 | 34,659 | 2179 | 116,104 | 29,355 |
| 260 | 114,171 | 30,821 | 1220 | 121,709 | 31,308 | 2180 | 116,104 | 29,965 |
| 261 | 116,104 | 30,308 | 1221 | 106,073 | 37,718 | 2181 | 116,104 | 30,535 |
| 262 | 116,104 | 31,562 | 1222 | 121,709 | 32,513 | 2182 | 116,104 | 30,535 |
| 263 | 116,104 | 30,732 | 1223 | 114,171 | 34,659 | 2183 | 116,104 | 32,291 |
| 264 | 112,204 | 33,961 | 1224 | 106,073 | 38,691 | 2184 | 116,104 | 30,535 |
| 265 | 116,104 | 31,969 | 1225 | 121,709 | 34,067 | 2185 | 116,104 | 31,725 |
| 266 | 116,104 | 31,562 | 1226 | 106,073 | 37,305 | 2186 | 116,104 | 30,535 |
| 267 | 116,104 | 32,820 | 1227 | 121,709 | 33,720 | 2187 | 116,104 | 33,470 |

|     |         |        |      |         |        |      |         |        |
|-----|---------|--------|------|---------|--------|------|---------|--------|
| 268 | 116,104 | 32,820 | 1228 | 114,171 | 35,946 | 2188 | 116,104 | 31,725 |
| 269 | 114,171 | 36,316 | 1229 | 106,073 | 38,691 | 2189 | 112,204 | 34,069 |
| 270 | 116,104 | 37,593 | 1230 | 121,709 | 36,145 | 2190 | 116,104 | 33,650 |
| 271 | 112,204 | 43,997 | 1231 | 121,709 | 38,088 | 2191 | 116,104 | 35,348 |
| 272 | 116,104 | 43,817 | 1232 | 106,073 | 47,960 | 2192 | 114,171 | 38,876 |
| 273 | 114,171 | 45,704 | 1233 | 114,171 | 45,879 | 2193 | 116,104 | 40,442 |
| 274 | 112,204 | 48,027 | 1234 | 114,171 | 47,030 | 2194 | 112,204 | 43,491 |
| 275 | 116,104 | 43,817 | 1235 | 114,171 | 45,879 | 2195 | 114,171 | 43,731 |
| 276 | 116,104 | 43,817 | 1236 | 121,709 | 43,037 | 2196 | 116,104 | 42,030 |
| 277 | 114,171 | 43,239 | 1237 | 106,073 | 49,381 | 2197 | 112,204 | 41,847 |
| 278 | 116,104 | 42,742 | 1238 | 121,709 | 41,799 | 2198 | 116,104 | 42,030 |
| 279 | 112,204 | 45,340 | 1239 | 106,073 | 48,196 | 2199 | 114,171 | 42,427 |
| 280 | 116,104 | 41,452 | 1240 | 114,171 | 44,778 | 2200 | 116,104 | 42,030 |
| 281 | 116,104 | 41,452 | 1241 | 121,709 | 41,799 | 2201 | 112,204 | 43,171 |
| 282 | 116,104 | 42,742 | 1242 | 106,073 | 48,196 | 2202 | 114,171 | 42,741 |
| 283 | 116,104 | 41,223 | 1243 | 121,709 | 41,799 | 2203 | 116,104 | 40,442 |
| 284 | 116,104 | 40,164 | 1244 | 114,171 | 42,154 | 2204 | 112,204 | 42,177 |
| 285 | 112,204 | 39,206 | 1245 | 106,073 | 44,266 | 2205 | 116,104 | 39,493 |
| 286 | 116,104 | 35,030 | 1246 | 121,709 | 37,087 | 2206 | 116,104 | 38,229 |
| 287 | 116,104 | 34,082 | 1247 | 121,709 | 34,931 | 2207 | 114,171 | 37,594 |
| 288 | 116,104 | 31,562 | 1248 | 106,073 | 38,691 | 2208 | 116,104 | 34,459 |
| 289 | 116,104 | 31,562 | 1249 | 114,171 | 34,659 | 2209 | 116,104 | 33,650 |
| 290 | 119,871 | 28,574 | 1250 | 121,709 | 30,108 | 2210 | 116,104 | 32,424 |
| 291 | 116,104 | 29,501 | 1251 | 121,709 | 30,496 | 2211 | 116,104 | 31,205 |
| 292 | 112,204 | 29,261 | 1252 | 106,073 | 33,174 | 2212 | 116,104 | 31,205 |
| 293 | 116,104 | 27,818 | 1253 | 114,171 | 30,001 | 2213 | 116,104 | 29,994 |
| 294 | 116,104 | 28,279 | 1254 | 121,709 | 26,976 | 2214 | 116,104 | 28,792 |
| 295 | 119,871 | 26,213 | 1255 | 121,709 | 27,722 | 2215 | 116,104 | 28,792 |
| 296 | 116,104 | 27,600 | 1256 | 114,171 | 28,757 | 2216 | 114,171 | 29,852 |
| 297 | 116,104 | 25,859 | 1257 | 106,073 | 29,623 | 2217 | 116,104 | 27,600 |
| 298 | 116,104 | 27,064 | 1258 | 121,709 | 26,329 | 2218 | 116,104 | 29,355 |
| 299 | 116,104 | 26,420 | 1259 | 121,709 | 25,818 | 2219 | 116,104 | 26,420 |
| 300 | 116,104 | 25,859 | 1260 | 106,073 | 30,210 | 2220 | 116,104 | 28,187 |
| 301 | 116,104 | 27,064 | 1261 | 114,171 | 26,297 | 2221 | 116,104 | 28,187 |
| 302 | 116,104 | 27,064 | 1262 | 121,709 | 25,203 | 2222 | 116,104 | 28,187 |
| 303 | 116,104 | 27,064 | 1263 | 121,709 | 25,203 | 2223 | 116,104 | 27,600 |
| 304 | 118,003 | 25,443 | 1264 | 106,073 | 28,918 | 2224 | 116,104 | 27,032 |
| 305 | 116,104 | 27,600 | 1265 | 114,171 | 26,867 | 2225 | 116,104 | 27,600 |
| 306 | 116,104 | 27,064 | 1266 | 121,709 | 25,203 | 2226 | 116,104 | 28,187 |
| 307 | 116,104 | 27,064 | 1267 | 121,709 | 25,203 | 2227 | 116,104 | 28,792 |
| 308 | 116,104 | 27,064 | 1268 | 106,073 | 28,918 | 2228 | 116,104 | 28,187 |
| 309 | 116,104 | 28,792 | 1269 | 114,171 | 26,867 | 2229 | 116,104 | 28,792 |
| 310 | 116,104 | 28,279 | 1270 | 121,709 | 25,203 | 2230 | 116,104 | 29,355 |
| 311 | 116,104 | 29,501 | 1271 | 121,709 | 27,466 | 2231 | 116,104 | 29,355 |
| 312 | 116,104 | 31,969 | 1272 | 106,073 | 31,515 | 2232 | 116,104 | 30,535 |
| 313 | 116,104 | 30,732 | 1273 | 114,171 | 29,279 | 2233 | 116,104 | 32,925 |
| 314 | 116,104 | 33,211 | 1274 | 121,709 | 28,613 | 2234 | 116,104 | 32,424 |
| 315 | 116,104 | 31,969 | 1275 | 106,073 | 31,515 | 2235 | 116,104 | 34,882 |
| 316 | 116,104 | 33,211 | 1276 | 121,709 | 30,264 | 2236 | 114,171 | 35,472 |
| 317 | 114,171 | 36,316 | 1277 | 114,171 | 31,733 | 2237 | 116,104 | 36,120 |
| 318 | 116,104 | 33,211 | 1278 | 106,073 | 36,832 | 2238 | 112,204 | 38,661 |
| 319 | 112,204 | 35,657 | 1279 | 121,709 | 30,930 | 2239 | 116,104 | 35,712 |
| 320 | 116,104 | 35,712 | 1280 | 121,709 | 32,872 | 2240 | 114,171 | 37,594 |
| 321 | 114,171 | 34,659 | 1281 | 106,073 | 37,718 | 2241 | 116,104 | 36,617 |
| 322 | 116,104 | 34,082 | 1282 | 114,171 | 36,731 | 2242 | 112,204 | 38,254 |
| 323 | 112,204 | 35,267 | 1283 | 106,073 | 37,718 | 2243 | 116,104 | 36,617 |
| 324 | 116,104 | 32,820 | 1284 | 121,709 | 35,266 | 2244 | 114,171 | 37,237 |
| 325 | 114,171 | 34,323 | 1285 | 121,709 | 34,067 | 2245 | 112,204 | 36,577 |
| 326 | 112,204 | 35,267 | 1286 | 106,073 | 39,089 | 2246 | 116,104 | 36,969 |
| 327 | 116,104 | 32,820 | 1287 | 114,171 | 35,043 | 2247 | 114,171 | 35,946 |
| 328 | 114,171 | 33,375 | 1288 | 114,171 | 36,316 | 2248 | 112,204 | 35,657 |
| 329 | 114,171 | 33,375 | 1289 | 114,171 | 36,731 | 2249 | 116,104 | 35,348 |
| 330 | 114,171 | 33,375 | 1290 | 121,709 | 32,872 | 2250 | 116,104 | 34,082 |
| 331 | 112,204 | 35,267 | 1291 | 106,073 | 39,535 | 2251 | 112,204 | 36,577 |
| 332 | 116,104 | 32,820 | 1292 | 121,709 | 32,872 | 2252 | 114,171 | 34,659 |
| 333 | 114,171 | 34,659 | 1293 | 106,073 | 39,089 | 2253 | 116,104 | 34,082 |
| 334 | 112,204 | 33,961 | 1294 | 114,171 | 36,316 | 2254 | 112,204 | 36,577 |
| 335 | 114,171 | 33,026 | 1295 | 121,709 | 32,872 | 2255 | 116,104 | 34,082 |

|     |         |        |      |         |        |      |         |        |
|-----|---------|--------|------|---------|--------|------|---------|--------|
| 336 | 112,204 | 33,961 | 1296 | 106,073 | 39,089 | 2256 | 114,171 | 33,774 |
| 337 | 114,171 | 33,375 | 1297 | 121,709 | 34,067 | 2257 | 116,104 | 35,348 |
| 338 | 116,104 | 32,820 | 1298 | 106,073 | 37,718 | 2258 | 112,204 | 33,961 |
| 339 | 112,204 | 35,267 | 1299 | 114,171 | 35,043 | 2259 | 116,104 | 34,459 |
| 340 | 114,171 | 32,510 | 1300 | 121,709 | 31,682 | 2260 | 114,171 | 33,375 |
| 341 | 112,204 | 34,366 | 1301 | 106,073 | 36,352 | 2261 | 116,104 | 33,211 |
| 342 | 116,104 | 31,562 | 1302 | 121,709 | 32,872 | 2262 | 112,204 | 33,961 |
| 343 | 114,171 | 32,510 | 1303 | 114,171 | 33,774 | 2263 | 116,104 | 33,211 |
| 344 | 112,204 | 32,289 | 1304 | 114,171 | 33,774 | 2264 | 116,104 | 32,424 |
| 345 | 116,104 | 31,562 | 1305 | 114,171 | 34,219 | 2265 | 114,171 | 32,510 |
| 346 | 114,171 | 32,510 | 1306 | 106,073 | 36,352 | 2266 | 116,104 | 30,732 |
| 347 | 112,204 | 31,362 | 1307 | 121,709 | 30,496 | 2267 | 116,104 | 32,424 |
| 348 | 116,104 | 31,969 | 1308 | 121,709 | 32,100 | 2268 | 112,204 | 32,289 |
| 349 | 112,204 | 33,080 | 1309 | 106,073 | 34,546 | 2269 | 116,104 | 31,969 |
| 350 | 114,171 | 31,252 | 1310 | 114,171 | 34,219 | 2270 | 116,104 | 31,205 |
| 351 | 116,104 | 31,969 | 1311 | 121,709 | 31,308 | 2271 | 116,104 | 31,205 |
| 352 | 112,204 | 33,080 | 1312 | 106,073 | 36,352 | 2272 | 116,104 | 30,732 |
| 353 | 114,171 | 32,096 | 1313 | 121,709 | 31,682 | 2273 | 116,104 | 31,205 |
| 354 | 116,104 | 31,969 | 1314 | 114,171 | 33,774 | 2274 | 114,171 | 31,252 |
| 355 | 112,204 | 33,080 | 1315 | 106,073 | 37,718 | 2275 | 116,104 | 31,205 |
| 356 | 114,171 | 33,375 | 1316 | 121,709 | 31,682 | 2276 | 116,104 | 31,205 |
| 357 | 116,104 | 31,969 | 1317 | 121,709 | 32,872 | 2277 | 116,104 | 32,424 |
| 358 | 112,204 | 34,366 | 1318 | 106,073 | 37,718 | 2278 | 116,104 | 31,969 |
| 359 | 114,171 | 32,510 | 1319 | 114,171 | 34,659 | 2279 | 116,104 | 32,424 |
| 360 | 116,104 | 31,969 | 1320 | 121,709 | 34,067 | 2280 | 112,204 | 33,551 |
| 361 | 112,204 | 34,366 | 1321 | 106,073 | 37,718 | 2281 | 116,104 | 32,424 |
| 362 | 116,104 | 33,211 | 1322 | 121,709 | 34,067 | 2282 | 116,104 | 33,211 |
| 363 | 114,171 | 34,659 | 1323 | 114,171 | 34,659 | 2283 | 112,204 | 36,094 |
| 364 | 116,104 | 34,082 | 1324 | 106,073 | 39,089 | 2284 | 116,104 | 34,459 |
| 365 | 112,204 | 38,254 | 1325 | 121,709 | 34,067 | 2285 | 116,104 | 36,969 |
| 366 | 114,171 | 39,535 | 1326 | 121,709 | 34,931 | 2286 | 114,171 | 37,594 |
| 367 | 116,104 | 42,742 | 1327 | 106,073 | 42,868 | 2287 | 116,104 | 40,442 |
| 368 | 112,204 | 46,683 | 1328 | 114,171 | 41,920 | 2288 | 116,104 | 41,721 |
| 369 | 112,204 | 46,683 | 1329 | 121,709 | 43,237 | 2289 | 112,204 | 46,683 |
| 370 | 114,171 | 45,879 | 1330 | 106,073 | 47,960 | 2290 | 114,171 | 47,407 |
| 371 | 116,104 | 43,817 | 1331 | 121,709 | 42,005 | 2291 | 116,104 | 45,325 |
| 372 | 112,204 | 45,340 | 1332 | 106,073 | 48,196 | 2292 | 112,204 | 45,563 |
| 373 | 114,171 | 43,465 | 1333 | 121,709 | 40,561 | 2293 | 116,104 | 45,325 |
| 374 | 116,104 | 40,164 | 1334 | 114,171 | 43,465 | 2294 | 114,171 | 45,036 |
| 375 | 112,204 | 44,227 | 1335 | 106,073 | 48,474 | 2295 | 116,104 | 44,033 |
| 376 | 116,104 | 40,442 | 1336 | 121,709 | 40,773 | 2296 | 116,104 | 43,003 |
| 377 | 114,171 | 41,126 | 1337 | 106,073 | 46,783 | 2297 | 112,204 | 45,563 |
| 378 | 116,104 | 41,452 | 1338 | 121,709 | 42,005 | 2298 | 116,104 | 44,286 |
| 379 | 112,204 | 41,560 | 1339 | 106,073 | 47,960 | 2299 | 114,171 | 45,036 |
| 380 | 116,104 | 39,164 | 1340 | 114,171 | 43,731 | 2300 | 116,104 | 42,742 |
| 381 | 114,171 | 37,237 | 1341 | 121,709 | 38,314 | 2301 | 116,104 | 40,442 |
| 382 | 116,104 | 35,348 | 1342 | 106,073 | 43,962 | 2302 | 116,104 | 39,493 |
| 383 | 112,204 | 35,267 | 1343 | 121,709 | 34,931 | 2303 | 116,104 | 36,617 |
| 384 | 116,104 | 31,562 | 1344 | 114,171 | 35,946 | 2304 | 112,204 | 36,953 |
| 385 | 114,171 | 32,510 | 1345 | 106,073 | 37,305 | 2305 | 116,104 | 33,211 |
| 386 | 116,104 | 30,308 | 1346 | 121,709 | 31,308 | 2306 | 116,104 | 33,650 |
| 387 | 112,204 | 30,527 | 1347 | 121,709 | 29,316 | 2307 | 116,104 | 31,969 |
| 388 | 116,104 | 28,279 | 1348 | 114,171 | 30,001 | 2308 | 116,104 | 31,205 |
| 389 | 116,104 | 29,501 | 1349 | 106,073 | 32,291 | 2309 | 116,104 | 29,501 |
| 390 | 112,204 | 28,005 | 1350 | 121,709 | 26,976 | 2310 | 116,104 | 29,994 |
| 391 | 116,104 | 27,064 | 1351 | 121,709 | 26,976 | 2311 | 119,871 | 29,575 |
| 392 | 114,171 | 28,067 | 1352 | 114,171 | 28,067 | 2312 | 114,171 | 29,279 |
| 393 | 116,104 | 25,859 | 1353 | 106,073 | 29,623 | 2313 | 116,104 | 27,600 |
| 394 | 116,104 | 26,420 | 1354 | 121,709 | 24,668 | 2314 | 116,104 | 29,355 |
| 395 | 112,204 | 27,338 | 1355 | 121,709 | 26,329 | 2315 | 116,104 | 27,600 |
| 396 | 116,104 | 25,859 | 1356 | 114,171 | 26,297 | 2316 | 116,104 | 27,600 |
| 397 | 114,171 | 26,867 | 1357 | 121,709 | 26,329 | 2317 | 116,104 | 27,600 |
| 398 | 116,104 | 27,064 | 1358 | 106,073 | 26,998 | 2318 | 116,104 | 27,600 |
| 399 | 116,104 | 25,859 | 1359 | 121,709 | 25,203 | 2319 | 116,104 | 28,792 |
| 400 | 112,204 | 28,005 | 1360 | 114,171 | 26,867 | 2320 | 116,104 | 28,792 |
| 401 | 116,104 | 27,064 | 1361 | 121,709 | 24,668 | 2321 | 119,871 | 27,301 |
| 402 | 114,171 | 26,867 | 1362 | 106,073 | 27,640 | 2322 | 116,104 | 27,600 |
| 403 | 116,104 | 27,064 | 1363 | 121,709 | 25,203 | 2323 | 116,104 | 28,792 |



|     |         |        |      |         |        |      |         |        |
|-----|---------|--------|------|---------|--------|------|---------|--------|
| 404 | 116,104 | 27,064 | 1364 | 114,171 | 26,867 | 2324 | 116,104 | 28,792 |
| 405 | 112,204 | 30,527 | 1365 | 106,073 | 28,304 | 2325 | 116,104 | 29,994 |
| 406 | 116,104 | 28,279 | 1366 | 121,709 | 26,329 | 2326 | 116,104 | 29,994 |
| 407 | 114,171 | 30,001 | 1367 | 121,709 | 25,818 | 2327 | 116,104 | 29,994 |
| 408 | 116,104 | 31,205 | 1368 | 114,171 | 28,664 | 2328 | 118,003 | 30,043 |
| 409 | 112,204 | 33,080 | 1369 | 106,073 | 30,210 | 2329 | 114,171 | 32,262 |
| 410 | 114,171 | 32,972 | 1370 | 121,709 | 26,329 | 2330 | 116,104 | 32,424 |
| 411 | 116,104 | 31,969 | 1371 | 121,709 | 29,129 | 2331 | 116,104 | 32,424 |
| 412 | 112,204 | 34,819 | 1372 | 114,171 | 30,001 | 2332 | 116,104 | 34,882 |
| 413 | 114,171 | 33,774 | 1373 | 106,073 | 35,490 | 2333 | 112,204 | 35,657 |
| 414 | 112,204 | 38,899 | 1374 | 121,709 | 33,275 | 2334 | 116,104 | 35,712 |
| 415 | 112,204 | 42,655 | 1375 | 121,709 | 31,682 | 2335 | 114,171 | 36,316 |
| 416 | 114,171 | 43,239 | 1376 | 114,171 | 34,219 | 2336 | 116,104 | 35,348 |
| 417 | 112,204 | 38,638 | 1377 | 106,073 | 39,089 | 2337 | 112,204 | 36,577 |
| 418 | 116,104 | 38,633 | 1378 | 121,709 | 35,266 | 2338 | 114,171 | 35,946 |
| 419 | 114,171 | 40,603 | 1379 | 121,709 | 35,266 | 2339 | 116,104 | 34,082 |
| 420 | 112,204 | 38,422 | 1380 | 106,073 | 41,844 | 2340 | 112,204 | 35,267 |
| 421 | 114,171 | 37,972 | 1381 | 114,171 | 39,827 | 2341 | 114,171 | 34,659 |
| 422 | 112,204 | 39,975 | 1382 | 121,709 | 36,469 | 2342 | 116,104 | 32,820 |
| 423 | 116,104 | 37,340 | 1383 | 106,073 | 44,266 | 2343 | 112,204 | 34,366 |
| 424 | 114,171 | 36,658 | 1384 | 121,709 | 37,361 | 2344 | 114,171 | 33,774 |
| 425 | 112,204 | 38,638 | 1385 | 114,171 | 40,162 | 2345 | 116,104 | 32,820 |
| 426 | 114,171 | 37,972 | 1386 | 106,073 | 44,266 | 2346 | 112,204 | 34,366 |
| 427 | 116,104 | 38,432 | 1387 | 121,709 | 39,800 | 2347 | 112,204 | 33,606 |
| 428 | 112,204 | 39,975 | 1388 | 121,709 | 38,579 | 2348 | 114,171 | 33,375 |
| 429 | 114,171 | 39,082 | 1389 | 106,073 | 45,667 | 2349 | 116,104 | 32,820 |
| 430 | 112,204 | 41,315 | 1390 | 114,171 | 42,427 | 2350 | 112,204 | 35,267 |
| 431 | 112,204 | 41,113 | 1391 | 114,171 | 42,427 | 2351 | 114,171 | 34,323 |
| 432 | 116,104 | 38,432 | 1392 | 114,171 | 41,126 | 2352 | 112,204 | 33,961 |
| 433 | 114,171 | 40,603 | 1393 | 121,709 | 38,579 | 2353 | 114,171 | 34,659 |
| 434 | 112,204 | 41,113 | 1394 | 106,073 | 44,266 | 2354 | 116,104 | 32,820 |
| 435 | 114,171 | 39,287 | 1395 | 121,709 | 38,579 | 2355 | 112,204 | 34,366 |
| 436 | 116,104 | 38,432 | 1396 | 114,171 | 40,162 | 2356 | 114,171 | 34,659 |
| 437 | 112,204 | 38,638 | 1397 | 106,073 | 42,868 | 2357 | 112,204 | 35,267 |
| 438 | 114,171 | 37,760 | 1398 | 121,709 | 36,145 | 2358 | 116,104 | 33,211 |
| 439 | 112,204 | 35,267 | 1399 | 121,709 | 36,469 | 2359 | 114,171 | 35,043 |
| 440 | 116,104 | 31,969 | 1400 | 106,073 | 41,473 | 2360 | 112,204 | 33,080 |
| 441 | 114,171 | 32,096 | 1401 | 114,171 | 38,531 | 2361 | 116,104 | 31,969 |
| 442 | 116,104 | 31,969 | 1402 | 121,709 | 36,469 | 2362 | 114,171 | 32,510 |
| 443 | 112,204 | 33,961 | 1403 | 121,709 | 34,931 | 2363 | 116,104 | 31,969 |
| 444 | 114,171 | 32,510 | 1404 | 106,073 | 41,473 | 2364 | 112,204 | 33,080 |
| 445 | 116,104 | 31,562 | 1405 | 114,171 | 38,876 | 2365 | 116,104 | 30,732 |
| 446 | 112,204 | 34,366 | 1406 | 121,709 | 34,931 | 2366 | 112,204 | 33,080 |
| 447 | 116,104 | 31,969 | 1407 | 106,073 | 40,465 | 2367 | 116,104 | 30,732 |
| 448 | 114,171 | 33,375 | 1408 | 121,709 | 33,720 | 2368 | 116,104 | 30,732 |
| 449 | 116,104 | 31,969 | 1409 | 114,171 | 36,316 | 2369 | 114,171 | 32,510 |
| 450 | 112,204 | 33,961 | 1410 | 121,709 | 34,067 | 2370 | 116,104 | 30,732 |
| 451 | 116,104 | 33,211 | 1411 | 106,073 | 40,465 | 2371 | 112,204 | 33,080 |
| 452 | 116,104 | 32,820 | 1412 | 121,709 | 33,720 | 2372 | 116,104 | 31,205 |
| 453 | 112,204 | 33,961 | 1413 | 114,171 | 37,594 | 2373 | 114,171 | 32,510 |
| 454 | 116,104 | 34,459 | 1414 | 121,709 | 35,266 | 2374 | 116,104 | 31,969 |
| 455 | 114,171 | 33,774 | 1415 | 106,073 | 41,473 | 2375 | 112,204 | 31,800 |
| 456 | 116,104 | 33,211 | 1416 | 121,709 | 36,145 | 2376 | 116,104 | 32,424 |
| 457 | 112,204 | 35,657 | 1417 | 114,171 | 40,162 | 2377 | 114,171 | 31,733 |
| 458 | 114,171 | 35,946 | 1418 | 106,073 | 44,266 | 2378 | 116,104 | 31,969 |
| 459 | 116,104 | 36,617 | 1419 | 121,709 | 38,579 | 2379 | 112,204 | 34,366 |
| 460 | 112,204 | 40,229 | 1420 | 121,709 | 38,579 | 2380 | 116,104 | 33,211 |
| 461 | 114,171 | 40,844 | 1421 | 106,073 | 45,667 | 2381 | 114,171 | 35,043 |
| 462 | 112,204 | 44,227 | 1422 | 114,171 | 45,036 | 2382 | 112,204 | 38,254 |
| 463 | 114,171 | 45,879 | 1423 | 121,709 | 44,471 | 2383 | 116,104 | 36,617 |
| 464 | 112,204 | 46,683 | 1424 | 106,073 | 52,048 | 2384 | 114,171 | 41,126 |
| 465 | 114,171 | 47,200 | 1425 | 121,709 | 47,999 | 2385 | 112,204 | 43,997 |
| 466 | 116,104 | 45,325 | 1426 | 114,171 | 49,683 | 2386 | 114,171 | 44,558 |
| 467 | 112,204 | 46,683 | 1427 | 106,073 | 55,074 | 2387 | 112,204 | 46,900 |
| 468 | 116,104 | 42,519 | 1428 | 121,709 | 47,999 | 2388 | 116,104 | 44,033 |
| 469 | 114,171 | 43,465 | 1429 | 106,073 | 52,226 | 2389 | 112,204 | 44,227 |
| 470 | 116,104 | 42,742 | 1430 | 121,709 | 45,517 | 2390 | 114,171 | 44,778 |
| 471 | 112,204 | 44,227 | 1431 | 114,171 | 48,522 | 2391 | 112,204 | 44,227 |

|     |         |        |      |         |        |      |         |        |
|-----|---------|--------|------|---------|--------|------|---------|--------|
| 472 | 116,104 | 41,452 | 1432 | 114,171 | 47,200 | 2392 | 116,104 | 43,003 |
| 473 | 116,104 | 41,721 | 1433 | 114,171 | 46,092 | 2393 | 114,171 | 42,154 |
| 474 | 112,204 | 42,893 | 1434 | 121,709 | 44,277 | 2394 | 112,204 | 44,497 |
| 475 | 116,104 | 41,721 | 1435 | 106,073 | 49,611 | 2395 | 114,171 | 43,465 |
| 476 | 116,104 | 38,877 | 1436 | 121,709 | 41,799 | 2396 | 112,204 | 43,171 |
| 477 | 116,104 | 37,593 | 1437 | 114,171 | 44,778 | 2397 | 116,104 | 39,164 |
| 478 | 114,171 | 37,237 | 1438 | 106,073 | 44,266 | 2398 | 114,171 | 39,827 |
| 479 | 116,104 | 35,348 | 1439 | 121,709 | 37,087 | 2399 | 112,204 | 37,890 |
| 480 | 116,104 | 32,820 | 1440 | 114,171 | 37,594 | 2400 | 116,104 | 34,082 |
| 481 | 116,104 | 31,969 | 1441 | 121,709 | 32,513 | 2401 | 114,171 | 35,043 |
| 482 | 116,104 | 31,562 | 1442 | 106,073 | 37,305 | 2402 | 116,104 | 31,969 |
| 483 | 116,104 | 29,501 | 1443 | 121,709 | 30,496 | 2403 | 112,204 | 32,659 |
| 484 | 116,104 | 29,501 | 1444 | 114,171 | 31,252 | 2404 | 116,104 | 31,205 |
| 485 | 116,104 | 29,501 | 1445 | 114,171 | 30,001 | 2405 | 114,171 | 30,001 |
| 486 | 116,104 | 29,501 | 1446 | 114,171 | 30,001 | 2406 | 116,104 | 29,501 |
| 487 | 116,104 | 27,064 | 1447 | 121,709 | 26,976 | 2407 | 116,104 | 28,279 |
| 488 | 116,104 | 28,792 | 1448 | 114,171 | 28,067 | 2408 | 112,204 | 29,793 |
| 489 | 116,104 | 27,064 | 1449 | 114,171 | 27,522 | 2409 | 116,104 | 27,600 |
| 490 | 116,104 | 26,420 | 1450 | 114,171 | 26,867 | 2410 | 112,204 | 28,559 |
| 491 | 116,104 | 27,600 | 1451 | 121,709 | 25,818 | 2411 | 114,171 | 27,522 |
| 492 | 116,104 | 27,064 | 1452 | 114,171 | 26,867 | 2412 | 116,104 | 27,600 |
| 493 | 116,104 | 27,064 | 1453 | 114,171 | 27,522 | 2413 | 112,204 | 28,559 |
| 494 | 116,104 | 27,600 | 1454 | 114,171 | 26,867 | 2414 | 116,104 | 27,064 |
| 495 | 116,104 | 27,064 | 1455 | 121,709 | 25,203 | 2415 | 114,171 | 28,067 |
| 496 | 116,104 | 27,064 | 1456 | 114,171 | 26,297 | 2416 | 116,104 | 27,600 |
| 497 | 116,104 | 27,600 | 1457 | 114,171 | 26,867 | 2417 | 112,204 | 28,559 |
| 498 | 116,104 | 27,064 | 1458 | 114,171 | 26,867 | 2418 | 116,104 | 27,064 |
| 499 | 116,104 | 27,064 | 1459 | 121,709 | 24,668 | 2419 | 116,104 | 28,792 |
| 500 | 116,104 | 28,792 | 1460 | 114,171 | 26,867 | 2420 | 114,171 | 29,279 |
| 501 | 116,104 | 28,279 | 1461 | 114,171 | 26,297 | 2421 | 112,204 | 31,036 |
| 502 | 112,204 | 30,527 | 1462 | 114,171 | 26,867 | 2422 | 116,104 | 29,994 |
| 503 | 116,104 | 31,969 | 1463 | 121,709 | 26,329 | 2423 | 114,171 | 30,502 |
| 504 | 116,104 | 31,969 | 1464 | 114,171 | 26,867 | 2424 | 116,104 | 29,994 |
| 505 | 116,104 | 32,820 | 1465 | 114,171 | 28,664 | 2425 | 112,204 | 31,596 |
| 506 | 116,104 | 34,459 | 1466 | 114,171 | 27,490 | 2426 | 114,171 | 32,972 |
| 507 | 116,104 | 34,459 | 1467 | 121,709 | 28,003 | 2427 | 116,104 | 33,211 |
| 508 | 114,171 | 35,946 | 1468 | 114,171 | 29,279 | 2428 | 112,204 | 34,819 |
| 509 | 116,104 | 36,617 | 1469 | 114,171 | 31,052 | 2429 | 112,204 | 36,953 |
| 510 | 112,204 | 38,254 | 1470 | 114,171 | 32,262 | 2430 | 114,171 | 35,946 |
| 511 | 116,104 | 36,617 | 1471 | 121,709 | 30,930 | 2431 | 112,204 | 36,953 |
| 512 | 112,204 | 39,206 | 1472 | 114,171 | 33,482 | 2432 | 114,171 | 34,659 |
| 513 | 114,171 | 37,237 | 1473 | 114,171 | 34,219 | 2433 | 110,200 | 37,242 |
| 514 | 116,104 | 36,310 | 1474 | 114,171 | 35,472 | 2434 | 112,204 | 35,657 |
| 515 | 112,204 | 37,890 | 1475 | 121,709 | 34,456 | 2435 | 114,171 | 34,323 |
| 516 | 116,104 | 36,617 | 1476 | 106,073 | 39,535 | 2436 | 112,204 | 35,267 |
| 517 | 114,171 | 37,237 | 1477 | 121,709 | 34,456 | 2437 | 114,171 | 34,659 |
| 518 | 116,104 | 36,617 | 1478 | 114,171 | 39,264 | 2438 | 112,204 | 35,267 |
| 519 | 112,204 | 38,254 | 1479 | 106,073 | 41,844 | 2439 | 114,171 | 33,774 |
| 520 | 114,171 | 37,237 | 1480 | 121,709 | 36,832 | 2440 | 110,200 | 33,253 |
| 521 | 116,104 | 36,969 | 1481 | 121,709 | 36,469 | 2441 | 112,204 | 34,366 |
| 522 | 112,204 | 37,890 | 1482 | 106,073 | 43,632 | 2442 | 114,171 | 32,096 |
| 523 | 116,104 | 36,617 | 1483 | 114,171 | 39,264 | 2443 | 112,204 | 33,961 |
| 524 | 114,171 | 38,531 | 1484 | 121,709 | 36,469 | 2444 | 112,204 | 35,267 |
| 525 | 112,204 | 37,890 | 1485 | 106,073 | 42,262 | 2445 | 114,171 | 33,375 |
| 526 | 114,171 | 37,237 | 1486 | 121,709 | 35,642 | 2446 | 112,204 | 35,267 |
| 527 | 116,104 | 35,348 | 1487 | 114,171 | 37,995 | 2447 | 114,171 | 34,323 |
| 528 | 112,204 | 37,890 | 1488 | 106,073 | 40,896 | 2448 | 112,204 | 33,961 |
| 529 | 114,171 | 35,946 | 1489 | 121,709 | 34,456 | 2449 | 114,171 | 34,659 |
| 530 | 112,204 | 37,890 | 1490 | 106,073 | 38,180 | 2450 | 112,204 | 33,606 |
| 531 | 116,104 | 35,348 | 1491 | 121,709 | 32,100 | 2451 | 116,104 | 32,820 |
| 532 | 112,204 | 35,657 | 1492 | 114,171 | 34,219 | 2452 | 114,171 | 32,096 |
| 533 | 114,171 | 33,375 | 1493 | 106,073 | 36,038 | 2453 | 112,204 | 33,961 |
| 534 | 116,104 | 34,459 | 1494 | 121,709 | 30,264 | 2454 | 114,171 | 33,375 |
| 535 | 112,204 | 35,657 | 1495 | 121,709 | 29,768 | 2455 | 112,204 | 32,659 |
| 536 | 114,171 | 32,510 | 1496 | 114,171 | 32,262 | 2456 | 114,171 | 33,774 |
| 537 | 116,104 | 33,211 | 1497 | 106,073 | 34,725 | 2457 | 116,104 | 30,308 |
| 538 | 112,204 | 32,659 | 1498 | 121,709 | 29,768 | 2458 | 112,204 | 33,080 |
| 539 | 114,171 | 33,774 | 1499 | 121,709 | 29,129 | 2459 | 112,204 | 31,800 |

|     |         |        |      |         |        |      |         |        |
|-----|---------|--------|------|---------|--------|------|---------|--------|
| 540 | 116,104 | 31,969 | 1500 | 106,073 | 32,830 | 2460 | 116,104 | 30,732 |
| 541 | 112,204 | 33,080 | 1501 | 114,171 | 31,052 | 2461 | 114,171 | 31,252 |
| 542 | 116,104 | 32,820 | 1502 | 121,709 | 27,466 | 2462 | 112,204 | 31,800 |
| 543 | 114,171 | 33,774 | 1503 | 106,073 | 33,422 | 2463 | 116,104 | 29,501 |
| 544 | 112,204 | 33,080 | 1504 | 121,709 | 28,003 | 2464 | 114,171 | 31,252 |
| 545 | 116,104 | 33,211 | 1505 | 114,171 | 29,279 | 2465 | 112,204 | 31,800 |
| 546 | 116,104 | 33,211 | 1506 | 114,171 | 28,664 | 2466 | 116,104 | 30,732 |
| 547 | 114,171 | 33,375 | 1507 | 114,171 | 29,852 | 2467 | 114,171 | 32,510 |
| 548 | 116,104 | 33,211 | 1508 | 121,709 | 26,889 | 2468 | 116,104 | 30,308 |
| 549 | 112,204 | 35,657 | 1509 | 106,073 | 30,852 | 2469 | 112,204 | 34,366 |
| 550 | 116,104 | 34,459 | 1510 | 121,709 | 28,003 | 2470 | 116,104 | 31,969 |
| 551 | 114,171 | 36,316 | 1511 | 114,171 | 29,279 | 2471 | 114,171 | 32,510 |
| 552 | 116,104 | 34,459 | 1512 | 106,073 | 33,422 | 2472 | 116,104 | 30,732 |
| 553 | 112,204 | 35,657 | 1513 | 121,709 | 28,613 | 2473 | 112,204 | 33,080 |
| 554 | 112,204 | 35,657 | 1514 | 114,171 | 32,262 | 2474 | 114,171 | 32,510 |
| 555 | 116,104 | 35,348 | 1515 | 121,709 | 29,768 | 2475 | 116,104 | 33,211 |
| 556 | 114,171 | 37,594 | 1516 | 106,073 | 35,490 | 2476 | 112,204 | 35,657 |
| 557 | 112,204 | 37,890 | 1517 | 121,709 | 30,930 | 2477 | 116,104 | 35,348 |
| 558 | 116,104 | 40,442 | 1518 | 114,171 | 34,219 | 2478 | 114,171 | 37,594 |
| 559 | 114,171 | 44,558 | 1519 | 114,171 | 35,043 | 2479 | 112,204 | 40,526 |
| 560 | 110,200 | 48,901 | 1520 | 114,171 | 38,531 | 2480 | 112,204 | 41,560 |
| 561 | 112,204 | 47,854 | 1521 | 106,073 | 41,148 | 2481 | 114,171 | 44,558 |
| 562 | 114,171 | 46,092 | 1522 | 121,709 | 38,579 | 2482 | 112,204 | 46,683 |
| 563 | 112,204 | 46,683 | 1523 | 121,709 | 38,579 | 2483 | 114,171 | 47,407 |
| 564 | 114,171 | 45,879 | 1524 | 106,073 | 44,266 | 2484 | 112,204 | 45,340 |
| 565 | 112,204 | 44,227 | 1525 | 114,171 | 41,126 | 2485 | 114,171 | 46,092 |
| 566 | 114,171 | 43,465 | 1526 | 106,073 | 42,868 | 2486 | 112,204 | 44,227 |
| 567 | 116,104 | 43,003 | 1527 | 121,709 | 36,145 | 2487 | 114,171 | 44,778 |
| 568 | 112,204 | 44,227 | 1528 | 121,709 | 36,469 | 2488 | 112,204 | 44,227 |
| 569 | 114,171 | 45,036 | 1529 | 106,073 | 42,868 | 2489 | 114,171 | 42,154 |
| 570 | 112,204 | 44,227 | 1530 | 114,171 | 40,162 | 2490 | 112,204 | 44,497 |
| 571 | 112,204 | 44,227 | 1531 | 121,709 | 36,145 | 2491 | 114,171 | 42,154 |
| 572 | 116,104 | 41,452 | 1532 | 106,073 | 41,473 | 2492 | 112,204 | 43,171 |
| 573 | 114,171 | 39,827 | 1533 | 121,709 | 35,266 | 2493 | 116,104 | 38,877 |
| 574 | 116,104 | 37,890 | 1534 | 114,171 | 35,946 | 2494 | 116,104 | 36,617 |
| 575 | 112,204 | 37,890 | 1535 | 114,171 | 33,774 | 2495 | 114,171 | 37,237 |
| 576 | 116,104 | 35,348 | 1536 | 114,171 | 33,774 | 2496 | 114,171 | 34,659 |
| 577 | 114,171 | 33,375 | 1537 | 121,709 | 29,316 | 2497 | 116,104 | 34,459 |
| 578 | 116,104 | 33,211 | 1538 | 114,171 | 31,733 | 2498 | 116,104 | 31,562 |
| 579 | 112,204 | 33,080 | 1539 | 114,171 | 30,001 | 2499 | 114,171 | 31,252 |
| 580 | 116,104 | 29,501 | 1540 | 114,171 | 29,279 | 2500 | 116,104 | 29,501 |
| 581 | 116,104 | 30,732 | 1541 | 121,709 | 26,976 | 2501 | 116,104 | 29,501 |
| 582 | 114,171 | 28,757 | 1542 | 106,073 | 30,210 | 2502 | 116,104 | 28,279 |
| 583 | 116,104 | 29,501 | 1543 | 114,171 | 28,067 | 2503 | 116,104 | 28,279 |
| 584 | 116,104 | 28,792 | 1544 | 121,709 | 26,329 | 2504 | 116,104 | 27,064 |
| 585 | 112,204 | 29,793 | 1545 | 106,073 | 28,918 | 2505 | 116,104 | 27,600 |
| 586 | 116,104 | 27,600 | 1546 | 121,709 | 25,203 | 2506 | 116,104 | 27,064 |
| 587 | 116,104 | 27,064 | 1547 | 114,171 | 27,490 | 2507 | 116,104 | 25,859 |
| 588 | 114,171 | 28,067 | 1548 | 114,171 | 26,867 | 2508 | 116,104 | 27,600 |
| 589 | 116,104 | 28,792 | 1549 | 114,171 | 26,867 | 2509 | 116,104 | 27,064 |
| 590 | 116,104 | 27,064 | 1550 | 121,709 | 25,203 | 2510 | 116,104 | 27,600 |
| 591 | 112,204 | 29,793 | 1551 | 106,073 | 28,918 | 2511 | 116,104 | 25,859 |
| 592 | 116,104 | 27,600 | 1552 | 121,709 | 24,700 | 2512 | 116,104 | 27,600 |
| 593 | 116,104 | 27,600 | 1553 | 106,073 | 27,640 | 2513 | 116,104 | 27,600 |
| 594 | 114,171 | 29,279 | 1554 | 114,171 | 26,867 | 2514 | 116,104 | 27,600 |
| 595 | 116,104 | 28,279 | 1555 | 121,709 | 25,203 | 2515 | 116,104 | 26,420 |
| 596 | 116,104 | 29,501 | 1556 | 106,073 | 27,640 | 2516 | 116,104 | 27,064 |
| 597 | 112,204 | 30,527 | 1557 | 121,709 | 25,787 | 2517 | 116,104 | 28,792 |
| 598 | 116,104 | 30,732 | 1558 | 114,171 | 26,867 | 2518 | 116,104 | 29,994 |
| 599 | 116,104 | 31,205 | 1559 | 106,073 | 28,918 | 2519 | 116,104 | 27,600 |
| 600 | 112,204 | 34,366 | 1560 | 121,709 | 24,700 | 2520 | 116,104 | 28,187 |
| 601 | 116,104 | 31,969 | 1561 | 121,709 | 24,700 | 2521 | 116,104 | 29,994 |
| 602 | 114,171 | 35,472 | 1562 | 106,073 | 29,096 | 2522 | 116,104 | 31,205 |
| 603 | 116,104 | 33,211 | 1563 | 114,171 | 27,490 | 2523 | 112,204 | 33,080 |
| 604 | 112,204 | 36,953 | 1564 | 121,709 | 26,418 | 2524 | 116,104 | 33,211 |
| 605 | 114,171 | 37,594 | 1565 | 106,073 | 30,852 | 2525 | 114,171 | 35,043 |
| 606 | 112,204 | 36,953 | 1566 | 121,709 | 28,003 | 2526 | 116,104 | 38,877 |
| 607 | 114,171 | 37,594 | 1567 | 106,073 | 34,725 | 2527 | 112,204 | 41,315 |

|     |         |        |      |         |        |      |         |        |
|-----|---------|--------|------|---------|--------|------|---------|--------|
| 608 | 112,204 | 38,254 | 1568 | 114,171 | 31,052 | 2528 | 116,104 | 39,732 |
| 609 | 114,171 | 35,946 | 1569 | 121,709 | 30,930 | 2529 | 114,171 | 39,287 |
| 610 | 112,204 | 38,254 | 1570 | 106,073 | 36,038 | 2530 | 112,204 | 42,460 |
| 611 | 114,171 | 37,237 | 1571 | 121,709 | 31,408 | 2531 | 114,171 | 42,908 |
| 612 | 112,204 | 38,254 | 1572 | 106,073 | 35,490 | 2532 | 112,204 | 43,808 |
| 613 | 114,171 | 37,237 | 1573 | 121,709 | 32,561 | 2533 | 116,104 | 40,887 |
| 614 | 112,204 | 37,890 | 1574 | 106,073 | 36,832 | 2534 | 112,204 | 41,113 |
| 615 | 112,204 | 37,890 | 1575 | 114,171 | 34,710 | 2535 | 114,171 | 40,603 |
| 616 | 114,171 | 36,316 | 1576 | 106,073 | 38,180 | 2536 | 116,104 | 37,340 |
| 617 | 112,204 | 36,577 | 1577 | 121,709 | 32,561 | 2537 | 116,104 | 38,633 |
| 618 | 114,171 | 37,594 | 1578 | 106,073 | 36,832 | 2538 | 112,204 | 41,113 |
| 619 | 112,204 | 37,890 | 1579 | 121,709 | 32,561 | 2539 | 116,104 | 41,034 |
| 620 | 114,171 | 35,946 | 1580 | 114,171 | 34,219 | 2540 | 114,171 | 42,908 |
| 621 | 112,204 | 37,890 | 1581 | 114,171 | 34,219 | 2541 | 116,104 | 42,336 |
| 622 | 114,171 | 38,229 | 1582 | 114,171 | 34,710 | 2542 | 112,204 | 42,460 |
| 623 | 112,204 | 38,254 | 1583 | 106,073 | 36,832 | 2543 | 116,104 | 40,887 |
| 624 | 114,171 | 38,531 | 1584 | 121,709 | 30,930 | 2544 | 114,171 | 41,729 |
| 625 | 112,204 | 37,890 | 1585 | 106,073 | 37,360 | 2545 | 116,104 | 41,034 |
| 626 | 114,171 | 36,316 | 1586 | 121,709 | 30,930 | 2546 | 112,204 | 43,660 |
| 627 | 112,204 | 37,890 | 1587 | 106,073 | 35,490 | 2547 | 116,104 | 42,194 |
| 628 | 114,171 | 36,316 | 1588 | 114,171 | 33,482 | 2548 | 114,171 | 39,287 |
| 629 | 112,204 | 37,890 | 1589 | 121,709 | 29,768 | 2549 | 112,204 | 38,422 |
| 630 | 112,204 | 36,577 | 1590 | 106,073 | 33,422 | 2550 | 116,104 | 37,340 |
| 631 | 114,171 | 37,594 | 1591 | 121,709 | 29,129 | 2551 | 114,171 | 37,972 |
| 632 | 112,204 | 35,267 | 1592 | 106,073 | 32,830 | 2552 | 116,104 | 34,758 |
| 633 | 114,171 | 36,316 | 1593 | 114,171 | 29,852 | 2553 | 116,104 | 36,048 |
| 634 | 90,066  | 45,567 | 1594 | 121,709 | 28,003 | 2554 | 112,204 | 38,638 |
| 635 | 121,709 | 34,067 | 1595 | 106,073 | 30,210 | 2555 | 116,104 | 36,048 |
| 636 | 106,073 | 38,691 | 1596 | 121,709 | 28,003 | 2556 | 112,204 | 37,301 |
| 637 | 114,171 | 36,316 | 1597 | 106,073 | 29,588 | 2557 | 116,104 | 33,752 |
| 638 | 106,073 | 38,691 | 1598 | 121,709 | 26,889 | 2558 | 116,104 | 36,048 |
| 639 | 121,709 | 34,067 | 1599 | 106,073 | 30,210 | 2559 | 116,104 | 36,048 |
| 640 | 121,709 | 34,931 | 1600 | 114,171 | 29,852 | 2560 | 114,171 | 37,972 |
| 641 | 106,073 | 39,089 | 1601 | 121,709 | 26,889 | 2561 | 116,104 | 37,340 |
| 642 | 114,171 | 35,946 | 1602 | 106,073 | 29,588 | 2562 | 116,104 | 36,048 |
| 643 | 121,709 | 35,266 | 1603 | 121,709 | 26,889 | 2563 | 116,104 | 37,340 |
| 644 | 106,073 | 38,691 | 1604 | 106,073 | 31,515 | 2564 | 116,104 | 37,340 |
| 645 | 121,709 | 35,266 | 1605 | 114,171 | 29,852 | 2565 | 112,204 | 38,638 |
| 646 | 106,073 | 39,089 | 1606 | 121,709 | 26,889 | 2566 | 116,104 | 37,593 |
| 647 | 114,171 | 37,237 | 1607 | 106,073 | 32,131 | 2567 | 116,104 | 38,633 |
| 648 | 114,171 | 37,594 | 1608 | 121,709 | 26,329 | 2568 | 114,171 | 39,287 |
| 649 | 114,171 | 37,594 | 1609 | 106,073 | 33,422 | 2569 | 116,104 | 39,927 |
| 650 | 121,709 | 36,145 | 1610 | 114,171 | 29,852 | 2570 | 116,104 | 39,927 |
| 651 | 106,073 | 41,473 | 1611 | 114,171 | 31,733 | 2571 | 112,204 | 43,997 |
| 652 | 121,709 | 37,674 | 1612 | 114,171 | 31,052 | 2572 | 116,104 | 42,336 |
| 653 | 106,073 | 42,868 | 1613 | 121,709 | 30,930 | 2573 | 114,171 | 44,558 |
| 654 | 114,171 | 42,154 | 1614 | 106,073 | 36,832 | 2574 | 116,104 | 46,247 |
| 655 | 106,073 | 49,381 | 1615 | 121,709 | 32,872 | 2575 | 112,204 | 49,204 |
| 656 | 121,709 | 43,237 | 1616 | 106,073 | 41,473 | 2576 | 116,104 | 51,266 |
| 657 | 106,073 | 50,804 | 1617 | 114,171 | 39,827 | 2577 | 114,171 | 53,417 |
| 658 | 121,709 | 44,471 | 1618 | 106,073 | 44,266 | 2578 | 112,204 | 55,712 |
| 659 | 106,073 | 47,960 | 1619 | 121,709 | 38,579 | 2579 | 114,171 | 54,801 |
| 660 | 114,171 | 44,778 | 1620 | 106,073 | 43,228 | 2580 | 116,104 | 52,577 |
| 661 | 121,709 | 41,022 | 1621 | 121,709 | 37,361 | 2581 | 112,204 | 53,048 |
| 662 | 106,073 | 45,372 | 1622 | 106,073 | 42,868 | 2582 | 112,204 | 53,048 |
| 663 | 121,709 | 41,022 | 1623 | 114,171 | 41,126 | 2583 | 114,171 | 50,888 |
| 664 | 106,073 | 46,783 | 1624 | 121,709 | 37,361 | 2584 | 116,104 | 50,041 |
| 665 | 121,709 | 39,800 | 1625 | 106,073 | 43,962 | 2585 | 112,204 | 53,048 |
| 666 | 106,073 | 46,783 | 1626 | 121,709 | 38,579 | 2586 | 116,104 | 51,350 |
| 667 | 114,171 | 43,731 | 1627 | 106,073 | 44,266 | 2587 | 114,171 | 52,219 |
| 668 | 121,709 | 39,543 | 1628 | 121,709 | 37,361 | 2588 | 116,104 | 47,424 |
| 669 | 106,073 | 42,868 | 1629 | 106,073 | 41,473 | 2589 | 116,104 | 46,247 |
| 670 | 121,709 | 36,145 | 1630 | 114,171 | 35,946 | 2590 | 116,104 | 43,817 |
| 671 | 106,073 | 38,691 | 1631 | 106,073 | 39,089 | 2591 | 112,204 | 42,460 |
| 672 | 114,171 | 36,316 | 1632 | 121,709 | 31,682 | 2592 | 116,104 | 39,927 |
| 673 | 121,709 | 32,872 | 1633 | 106,073 | 34,546 | 2593 | 116,104 | 37,131 |
| 674 | 106,073 | 34,546 | 1634 | 121,709 | 29,768 | 2594 | 116,104 | 37,340 |
| 675 | 121,709 | 30,930 | 1635 | 114,171 | 30,001 | 2595 | 116,104 | 35,030 |

|     |         |        |      |         |        |      |         |        |
|-----|---------|--------|------|---------|--------|------|---------|--------|
| 676 | 114,171 | 32,510 | 1636 | 114,171 | 30,001 | 2596 | 116,104 | 32,184 |
| 677 | 114,171 | 30,001 | 1637 | 114,171 | 29,279 | 2597 | 116,104 | 32,477 |
| 678 | 114,171 | 30,502 | 1638 | 121,709 | 26,329 | 2598 | 116,104 | 32,820 |
| 679 | 121,709 | 28,613 | 1639 | 106,073 | 29,623 | 2599 | 116,104 | 29,936 |
| 680 | 106,073 | 32,291 | 1640 | 121,709 | 25,203 | 2600 | 116,104 | 30,308 |
| 681 | 121,709 | 27,466 | 1641 | 114,171 | 28,067 | 2601 | 116,104 | 28,672 |
| 682 | 114,171 | 29,279 | 1642 | 106,073 | 28,918 | 2602 | 116,104 | 29,060 |
| 683 | 106,073 | 30,210 | 1643 | 121,709 | 25,787 | 2603 | 116,104 | 29,060 |
| 684 | 121,709 | 26,329 | 1644 | 121,709 | 25,203 | 2604 | 116,104 | 27,818 |
| 685 | 106,073 | 30,953 | 1645 | 106,073 | 28,918 | 2605 | 116,104 | 29,060 |
| 686 | 121,709 | 26,329 | 1646 | 114,171 | 27,490 | 2606 | 114,171 | 29,552 |
| 687 | 114,171 | 28,757 | 1647 | 121,709 | 24,089 | 2607 | 116,104 | 29,060 |
| 688 | 106,073 | 31,515 | 1648 | 106,073 | 28,918 | 2608 | 116,104 | 27,818 |
| 689 | 121,709 | 26,329 | 1649 | 121,709 | 25,203 | 2609 | 116,104 | 29,060 |
| 690 | 121,709 | 26,329 | 1650 | 114,171 | 26,867 | 2610 | 116,104 | 29,060 |
| 691 | 106,073 | 31,515 | 1651 | 106,073 | 29,588 | 2611 | 116,104 | 29,060 |
| 692 | 114,171 | 28,757 | 1652 | 121,709 | 25,203 | 2612 | 116,104 | 29,936 |
| 693 | 121,709 | 27,466 | 1653 | 121,709 | 26,329 | 2613 | 116,104 | 30,308 |
| 694 | 106,073 | 30,953 | 1654 | 106,073 | 31,515 | 2614 | 116,104 | 32,477 |
| 695 | 121,709 | 27,466 | 1655 | 114,171 | 28,067 | 2615 | 116,104 | 30,732 |
| 696 | 114,171 | 30,502 | 1656 | 106,073 | 32,131 | 2616 | 116,104 | 31,562 |
| 697 | 106,073 | 32,131 | 1657 | 121,709 | 29,129 | 2617 | 116,104 | 32,820 |
| 698 | 121,709 | 28,003 | 1658 | 121,709 | 29,768 | 2618 | 116,104 | 36,617 |
| 699 | 106,073 | 33,422 | 1659 | 106,073 | 34,156 | 2619 | 116,104 | 36,310 |
| 700 | 121,709 | 30,264 | 1660 | 114,171 | 33,774 | 2620 | 116,104 | 37,593 |
| 701 | 114,171 | 32,972 | 1661 | 114,171 | 33,774 | 2621 | 112,204 | 42,655 |
| 702 | 114,171 | 34,219 | 1662 | 114,171 | 35,043 | 2622 | 116,104 | 39,927 |
| 703 | 114,171 | 34,219 | 1663 | 106,073 | 37,718 | 2623 | 112,204 | 42,460 |
| 704 | 106,073 | 38,180 | 1664 | 121,709 | 32,513 | 2624 | 116,104 | 39,927 |
| 705 | 121,709 | 31,682 | 1665 | 106,073 | 39,089 | 2625 | 114,171 | 40,603 |
| 706 | 106,073 | 37,718 | 1666 | 121,709 | 33,720 | 2626 | 116,104 | 39,732 |
| 707 | 121,709 | 34,067 | 1667 | 106,073 | 38,691 | 2627 | 112,204 | 41,113 |
| 708 | 106,073 | 38,180 | 1668 | 114,171 | 35,946 | 2628 | 114,171 | 41,729 |
| 709 | 114,171 | 36,316 | 1669 | 106,073 | 40,080 | 2629 | 116,104 | 41,034 |
| 710 | 106,073 | 40,465 | 1670 | 121,709 | 32,872 | 2630 | 112,204 | 41,113 |
| 711 | 121,709 | 34,931 | 1671 | 106,073 | 37,718 | 2631 | 116,104 | 38,633 |
| 712 | 106,073 | 40,465 | 1672 | 121,709 | 34,067 | 2632 | 114,171 | 40,405 |
| 713 | 121,709 | 35,266 | 1673 | 106,073 | 36,352 | 2633 | 116,104 | 39,927 |
| 714 | 106,073 | 40,465 | 1674 | 121,709 | 32,513 | 2634 | 112,204 | 41,113 |
| 715 | 121,709 | 35,266 | 1675 | 106,073 | 37,305 | 2635 | 116,104 | 41,034 |
| 716 | 106,073 | 39,089 | 1676 | 114,171 | 35,043 | 2636 | 114,171 | 41,729 |
| 717 | 114,171 | 37,237 | 1677 | 106,073 | 37,305 | 2637 | 112,204 | 41,315 |
| 718 | 106,073 | 40,465 | 1678 | 121,709 | 32,513 | 2638 | 116,104 | 41,034 |
| 719 | 121,709 | 35,266 | 1679 | 106,073 | 37,718 | 2639 | 114,171 | 41,729 |
| 720 | 106,073 | 40,465 | 1680 | 121,709 | 32,513 | 2640 | 112,204 | 41,315 |
| 721 | 121,709 | 33,720 | 1681 | 106,073 | 37,718 | 2641 | 116,104 | 41,034 |
| 722 | 106,073 | 40,465 | 1682 | 114,171 | 34,659 | 2642 | 114,171 | 41,729 |
| 723 | 114,171 | 36,316 | 1683 | 114,171 | 35,043 | 2643 | 112,204 | 39,975 |
| 724 | 114,171 | 36,731 | 1684 | 114,171 | 34,659 | 2644 | 116,104 | 38,633 |
| 725 | 114,171 | 35,946 | 1685 | 106,073 | 37,718 | 2645 | 112,204 | 38,638 |
| 726 | 106,073 | 39,089 | 1686 | 121,709 | 31,682 | 2646 | 114,171 | 36,658 |
| 727 | 121,709 | 34,067 | 1687 | 106,073 | 37,718 | 2647 | 116,104 | 36,048 |
| 728 | 121,709 | 32,872 | 1688 | 121,709 | 30,930 | 2648 | 112,204 | 37,301 |
| 729 | 106,073 | 37,718 | 1689 | 106,073 | 36,352 | 2649 | 116,104 | 35,030 |
| 730 | 114,171 | 35,472 | 1690 | 114,171 | 33,774 | 2650 | 114,171 | 36,658 |
| 731 | 106,073 | 37,718 | 1691 | 114,171 | 35,043 | 2651 | 116,104 | 36,310 |
| 732 | 121,709 | 32,872 | 1692 | 114,171 | 33,774 | 2652 | 112,204 | 37,301 |
| 733 | 106,073 | 36,832 | 1693 | 106,073 | 36,352 | 2653 | 114,171 | 36,925 |
| 734 | 121,709 | 31,682 | 1694 | 121,709 | 32,872 | 2654 | 116,104 | 37,340 |
| 735 | 106,073 | 38,180 | 1695 | 106,073 | 36,352 | 2655 | 112,204 | 37,572 |
| 736 | 114,171 | 33,774 | 1696 | 121,709 | 31,682 | 2656 | 116,104 | 37,340 |
| 737 | 121,709 | 33,275 | 1697 | 106,073 | 36,352 | 2657 | 114,171 | 36,925 |
| 738 | 106,073 | 36,352 | 1698 | 114,171 | 35,043 | 2658 | 116,104 | 37,340 |
| 739 | 121,709 | 33,275 | 1699 | 106,073 | 36,352 | 2659 | 112,204 | 38,899 |
| 740 | 106,073 | 37,718 | 1700 | 121,709 | 32,872 | 2660 | 114,171 | 39,287 |
| 741 | 121,709 | 33,275 | 1701 | 106,073 | 37,718 | 2661 | 116,104 | 38,633 |
| 742 | 106,073 | 38,180 | 1702 | 121,709 | 32,872 | 2662 | 112,204 | 41,315 |
| 743 | 114,171 | 36,316 | 1703 | 106,073 | 39,089 | 2663 | 114,171 | 39,535 |

|     |         |        |      |         |        |      |         |        |
|-----|---------|--------|------|---------|--------|------|---------|--------|
| 744 | 121,709 | 34,067 | 1704 | 121,709 | 34,067 | 2664 | 112,204 | 38,638 |
| 745 | 106,073 | 39,089 | 1705 | 114,171 | 37,594 | 2665 | 116,104 | 38,877 |
| 746 | 121,709 | 35,266 | 1706 | 106,073 | 40,465 | 2666 | 112,204 | 39,975 |
| 747 | 106,073 | 40,896 | 1707 | 121,709 | 36,469 | 2667 | 114,171 | 40,603 |
| 748 | 114,171 | 38,876 | 1708 | 106,073 | 41,473 | 2668 | 116,104 | 41,223 |
| 749 | 121,709 | 36,469 | 1709 | 121,709 | 37,674 | 2669 | 112,204 | 45,340 |
| 750 | 106,073 | 44,266 | 1710 | 106,073 | 45,372 | 2670 | 116,104 | 45,115 |
| 751 | 121,709 | 40,773 | 1711 | 114,171 | 44,778 | 2671 | 114,171 | 47,030 |
| 752 | 106,073 | 49,611 | 1712 | 106,073 | 49,611 | 2672 | 112,204 | 51,691 |
| 753 | 121,709 | 43,037 | 1713 | 121,709 | 43,037 | 2673 | 116,104 | 53,889 |
| 754 | 106,073 | 51,027 | 1714 | 106,073 | 49,611 | 2674 | 114,171 | 53,467 |
| 755 | 106,073 | 51,027 | 1715 | 121,709 | 43,237 | 2675 | 112,204 | 54,405 |
| 756 | 114,171 | 46,092 | 1716 | 106,073 | 48,196 | 2676 | 116,104 | 51,266 |
| 757 | 106,073 | 51,027 | 1717 | 121,709 | 40,773 | 2677 | 114,171 | 52,219 |
| 758 | 121,709 | 43,237 | 1718 | 106,073 | 46,783 | 2678 | 112,204 | 50,427 |
| 759 | 106,073 | 49,611 | 1719 | 114,171 | 44,778 | 2679 | 116,104 | 47,424 |
| 760 | 121,709 | 43,237 | 1720 | 106,073 | 47,069 | 2680 | 114,171 | 49,683 |
| 761 | 106,073 | 48,196 | 1721 | 121,709 | 40,773 | 2681 | 116,104 | 48,733 |
| 762 | 121,709 | 42,005 | 1722 | 106,073 | 48,196 | 2682 | 112,204 | 53,048 |
| 763 | 114,171 | 43,465 | 1723 | 121,709 | 40,773 | 2683 | 116,104 | 51,350 |
| 764 | 106,073 | 45,667 | 1724 | 106,073 | 45,667 | 2684 | 112,204 | 50,427 |
| 765 | 121,709 | 38,579 | 1725 | 114,171 | 39,535 | 2685 | 116,104 | 46,247 |
| 766 | 106,073 | 41,473 | 1726 | 121,709 | 36,145 | 2686 | 114,171 | 44,378 |
| 767 | 121,709 | 34,931 | 1727 | 106,073 | 40,080 | 2687 | 116,104 | 42,519 |
| 768 | 106,073 | 39,089 | 1728 | 121,709 | 33,720 | 2688 | 116,104 | 39,927 |
| 769 | 114,171 | 33,774 | 1729 | 106,073 | 37,718 | 2689 | 112,204 | 40,229 |
| 770 | 121,709 | 30,496 | 1730 | 121,709 | 31,682 | 2690 | 116,104 | 36,310 |
| 771 | 106,073 | 33,638 | 1731 | 114,171 | 30,821 | 2691 | 116,104 | 35,030 |
| 772 | 121,709 | 29,768 | 1732 | 106,073 | 34,992 | 2692 | 116,104 | 34,758 |
| 773 | 106,073 | 31,515 | 1733 | 121,709 | 29,316 | 2693 | 116,104 | 33,752 |
| 774 | 114,171 | 30,001 | 1734 | 121,709 | 28,143 | 2694 | 114,171 | 34,323 |
| 775 | 121,709 | 26,329 | 1735 | 106,073 | 32,291 | 2695 | 116,104 | 31,562 |
| 776 | 106,073 | 31,515 | 1736 | 114,171 | 29,279 | 2696 | 118,003 | 30,703 |
| 777 | 121,709 | 26,329 | 1737 | 121,709 | 27,466 | 2697 | 116,104 | 30,308 |
| 778 | 114,171 | 28,067 | 1738 | 106,073 | 31,515 | 2698 | 116,104 | 30,308 |
| 779 | 114,171 | 28,067 | 1739 | 121,709 | 26,976 | 2699 | 116,104 | 30,308 |
| 780 | 114,171 | 26,867 | 1740 | 114,171 | 29,279 | 2700 | 116,104 | 29,060 |
| 781 | 121,709 | 26,329 | 1741 | 106,073 | 30,953 | 2701 | 116,104 | 30,308 |
| 782 | 106,073 | 28,918 | 1742 | 121,709 | 26,329 | 2702 | 116,104 | 30,308 |
| 783 | 121,709 | 26,329 | 1743 | 106,073 | 31,515 | 2703 | 116,104 | 29,501 |
| 784 | 114,171 | 26,867 | 1744 | 121,709 | 25,818 | 2704 | 116,104 | 29,060 |
| 785 | 106,073 | 28,918 | 1745 | 114,171 | 29,279 | 2705 | 116,104 | 30,308 |
| 786 | 121,709 | 26,329 | 1746 | 114,171 | 29,279 | 2706 | 114,171 | 31,252 |
| 787 | 121,709 | 25,203 | 1747 | 114,171 | 28,757 | 2707 | 116,104 | 29,060 |
| 788 | 106,073 | 30,210 | 1748 | 121,709 | 28,143 | 2708 | 116,104 | 30,732 |
| 789 | 114,171 | 27,490 | 1749 | 106,073 | 32,830 | 2709 | 116,104 | 30,308 |
| 790 | 121,709 | 27,466 | 1750 | 121,709 | 28,143 | 2710 | 116,104 | 31,562 |
| 791 | 106,073 | 30,210 | 1751 | 114,171 | 31,252 | 2711 | 116,104 | 30,732 |
| 792 | 121,709 | 26,889 | 1752 | 106,073 | 35,490 | 2712 | 116,104 | 30,732 |
| 793 | 114,171 | 27,490 | 1753 | 121,709 | 29,768 | 2713 | 116,104 | 30,732 |
| 794 | 106,073 | 29,096 | 1754 | 114,171 | 34,219 | 2714 | 116,104 | 33,211 |
| 795 | 121,709 | 26,889 | 1755 | 114,171 | 34,219 | 2715 | 116,104 | 33,211 |
| 796 | 121,709 | 27,494 | 1756 | 114,171 | 33,774 | 2716 | 116,104 | 35,348 |
| 797 | 106,073 | 32,131 | 1757 | 106,073 | 38,180 | 2717 | 116,104 | 35,348 |
| 798 | 114,171 | 32,262 | 1758 | 121,709 | 34,456 | 2718 | 112,204 | 39,558 |
| 799 | 121,709 | 30,264 | 1759 | 106,073 | 40,080 | 2719 | 116,104 | 37,890 |
| 800 | 106,073 | 37,360 | 1760 | 121,709 | 35,266 | 2720 | 116,104 | 37,593 |
| 801 | 121,709 | 30,930 | 1761 | 106,073 | 41,844 | 2721 | 116,104 | 37,890 |
| 802 | 114,171 | 33,482 | 1762 | 114,171 | 38,531 | 2722 | 114,171 | 39,827 |
| 803 | 106,073 | 38,180 | 1763 | 114,171 | 41,450 | 2723 | 116,104 | 39,164 |
| 804 | 121,709 | 33,720 | 1764 | 114,171 | 40,162 | 2724 | 116,104 | 38,877 |
| 805 | 121,709 | 33,275 | 1765 | 106,073 | 44,266 | 2725 | 112,204 | 40,526 |
| 806 | 106,073 | 40,896 | 1766 | 121,709 | 38,883 | 2726 | 116,104 | 41,721 |
| 807 | 114,171 | 36,731 | 1767 | 106,073 | 44,615 | 2727 | 116,104 | 40,164 |
| 808 | 121,709 | 35,642 | 1768 | 121,709 | 38,579 | 2728 | 112,204 | 42,893 |
| 809 | 106,073 | 40,465 | 1769 | 106,073 | 43,228 | 2729 | 116,104 | 41,452 |
| 810 | 121,709 | 35,642 | 1770 | 114,171 | 41,450 | 2730 | 114,171 | 43,239 |
| 811 | 114,171 | 39,264 | 1771 | 106,073 | 44,266 | 2731 | 116,104 | 43,817 |

|     |         |        |      |         |        |      |         |        |
|-----|---------|--------|------|---------|--------|------|---------|--------|
| 812 | 114,171 | 37,594 | 1772 | 121,709 | 39,800 | 2732 | 112,204 | 46,505 |
| 813 | 114,171 | 39,264 | 1773 | 106,073 | 44,266 | 2733 | 116,104 | 45,115 |
| 814 | 121,709 | 35,642 | 1774 | 121,709 | 38,883 | 2734 | 114,171 | 45,879 |
| 815 | 106,073 | 40,896 | 1775 | 106,073 | 44,266 | 2735 | 116,104 | 43,817 |
| 816 | 121,709 | 34,456 | 1776 | 121,709 | 38,579 | 2736 | 112,204 | 46,683 |
| 817 | 114,171 | 36,731 | 1777 | 106,073 | 44,615 | 2737 | 116,104 | 45,115 |
| 818 | 106,073 | 37,360 | 1778 | 114,171 | 41,450 | 2738 | 114,171 | 45,879 |
| 819 | 121,709 | 32,100 | 1779 | 106,073 | 42,868 | 2739 | 116,104 | 45,115 |
| 820 | 121,709 | 31,408 | 1780 | 106,073 | 41,844 | 2740 | 112,204 | 46,683 |
| 821 | 106,073 | 35,490 | 1781 | 121,709 | 37,361 | 2741 | 116,104 | 43,817 |
| 822 | 114,171 | 32,262 | 1782 | 106,073 | 41,844 | 2742 | 116,104 | 44,033 |
| 823 | 121,709 | 29,768 | 1783 | 121,709 | 35,266 | 2743 | 114,171 | 43,239 |
| 824 | 106,073 | 33,422 | 1784 | 106,073 | 40,465 | 2744 | 116,104 | 40,442 |
| 825 | 121,709 | 29,129 | 1785 | 121,709 | 35,266 | 2745 | 116,104 | 40,164 |
| 826 | 114,171 | 28,664 | 1786 | 106,073 | 40,465 | 2746 | 112,204 | 41,560 |
| 827 | 106,073 | 32,131 | 1787 | 114,171 | 37,594 | 2747 | 116,104 | 40,164 |
| 828 | 121,709 | 26,889 | 1788 | 121,709 | 35,266 | 2748 | 116,104 | 40,164 |
| 829 | 121,709 | 26,329 | 1789 | 106,073 | 39,089 | 2749 | 114,171 | 40,844 |
| 830 | 114,171 | 28,664 | 1790 | 121,709 | 34,067 | 2750 | 116,104 | 39,164 |
| 831 | 106,073 | 30,852 | 1791 | 106,073 | 39,089 | 2751 | 116,104 | 40,164 |
| 832 | 121,709 | 25,787 | 1792 | 114,171 | 37,594 | 2752 | 116,104 | 40,164 |
| 833 | 121,709 | 25,787 | 1793 | 114,171 | 36,316 | 2753 | 112,204 | 43,171 |
| 834 | 114,171 | 28,664 | 1794 | 114,171 | 36,316 | 2754 | 116,104 | 40,164 |
| 835 | 106,073 | 29,588 | 1795 | 121,709 | 34,067 | 2755 | 116,104 | 40,442 |
| 836 | 121,709 | 26,889 | 1796 | 106,073 | 40,896 | 2756 | 116,104 | 41,452 |
| 837 | 121,709 | 26,889 | 1797 | 121,709 | 35,266 | 2757 | 112,204 | 43,171 |
| 838 | 114,171 | 28,067 | 1798 | 106,073 | 40,465 | 2758 | 116,104 | 41,452 |
| 839 | 106,073 | 30,852 | 1799 | 114,171 | 38,876 | 2759 | 116,104 | 41,452 |
| 840 | 121,709 | 28,003 | 1800 | 106,073 | 42,262 | 2760 | 116,104 | 41,452 |
| 841 | 121,709 | 26,889 | 1801 | 121,709 | 37,674 | 2761 | 114,171 | 43,465 |
| 842 | 114,171 | 29,852 | 1802 | 121,709 | 37,674 | 2762 | 116,104 | 42,742 |
| 843 | 106,073 | 32,830 | 1803 | 106,073 | 44,266 | 2763 | 116,104 | 42,742 |
| 844 | 121,709 | 29,129 | 1804 | 114,171 | 41,450 | 2764 | 116,104 | 44,033 |
| 845 | 121,709 | 28,613 | 1805 | 106,073 | 45,667 | 2765 | 116,104 | 43,817 |
| 846 | 106,073 | 36,832 | 1806 | 121,709 | 41,022 | 2766 | 112,204 | 46,900 |
| 847 | 114,171 | 36,316 | 1807 | 106,073 | 49,611 | 2767 | 116,104 | 46,414 |
| 848 | 121,709 | 37,087 | 1808 | 121,709 | 44,471 | 2768 | 114,171 | 48,522 |
| 849 | 106,073 | 45,667 | 1809 | 106,073 | 50,804 | 2769 | 112,204 | 51,905 |
| 850 | 121,709 | 38,314 | 1810 | 121,709 | 45,517 | 2770 | 114,171 | 50,888 |
| 851 | 106,073 | 45,667 | 1811 | 106,073 | 51,027 | 2771 | 112,204 | 53,256 |
| 852 | 114,171 | 41,126 | 1812 | 114,171 | 47,407 | 2772 | 114,171 | 52,219 |
| 853 | 121,709 | 38,579 | 1813 | 106,073 | 49,611 | 2773 | 112,204 | 50,554 |
| 854 | 106,073 | 44,266 | 1814 | 121,709 | 43,237 | 2774 | 114,171 | 49,683 |
| 855 | 121,709 | 37,361 | 1815 | 121,709 | 42,005 | 2775 | 112,204 | 50,718 |
| 856 | 114,171 | 41,126 | 1816 | 106,073 | 49,881 | 2776 | 116,104 | 47,552 |
| 857 | 114,171 | 40,844 | 1817 | 114,171 | 44,778 | 2777 | 112,204 | 53,256 |
| 858 | 114,171 | 41,126 | 1818 | 106,073 | 49,881 | 2778 | 114,171 | 51,011 |
| 859 | 106,073 | 44,266 | 1819 | 121,709 | 43,237 | 2779 | 112,204 | 51,905 |
| 860 | 121,709 | 37,361 | 1820 | 106,073 | 48,196 | 2780 | 114,171 | 49,683 |
| 861 | 121,709 | 34,931 | 1821 | 121,709 | 41,022 | 2781 | 116,104 | 47,714 |
| 862 | 106,073 | 40,080 | 1822 | 114,171 | 42,427 | 2782 | 112,204 | 46,683 |
| 863 | 114,171 | 35,043 | 1823 | 114,171 | 39,827 | 2783 | 116,104 | 41,452 |
| 864 | 121,709 | 30,496 | 1824 | 114,171 | 38,876 | 2784 | 114,171 | 42,154 |
| 865 | 121,709 | 30,496 | 1825 | 121,709 | 35,266 | 2785 | 116,104 | 38,877 |
| 866 | 106,073 | 32,291 | 1826 | 114,171 | 35,043 | 2786 | 112,204 | 40,229 |
| 867 | 114,171 | 30,001 | 1827 | 114,171 | 33,774 | 2787 | 116,104 | 37,593 |
| 868 | 121,709 | 27,466 | 1828 | 114,171 | 35,472 | 2788 | 114,171 | 35,946 |
| 869 | 106,073 | 30,210 | 1829 | 121,709 | 30,496 | 2789 | 116,104 | 34,082 |
| 870 | 121,709 | 25,818 | 1830 | 114,171 | 32,972 | 2790 | 116,104 | 32,820 |
| 871 | 114,171 | 26,867 | 1831 | 121,709 | 30,930 | 2791 | 112,204 | 34,366 |
| 872 | 121,709 | 25,203 | 1832 | 106,073 | 34,156 | 2792 | 116,104 | 31,562 |
| 873 | 114,171 | 26,867 | 1833 | 121,709 | 29,768 | 2793 | 114,171 | 31,252 |
| 874 | 114,171 | 26,867 | 1834 | 114,171 | 30,502 | 2794 | 116,104 | 30,732 |
| 875 | 114,171 | 26,867 | 1835 | 121,709 | 28,613 | 2795 | 112,204 | 31,362 |
| 876 | 121,709 | 25,203 | 1836 | 121,709 | 29,129 | 2796 | 116,104 | 29,501 |
| 877 | 114,171 | 25,680 | 1837 | 106,073 | 32,830 | 2797 | 116,104 | 30,308 |
| 878 | 114,171 | 26,867 | 1838 | 114,171 | 31,733 | 2798 | 114,171 | 30,001 |
| 879 | 114,171 | 26,867 | 1839 | 121,709 | 29,768 | 2799 | 116,104 | 29,501 |

|     |         |        |      |         |        |      |         |        |
|-----|---------|--------|------|---------|--------|------|---------|--------|
| 880 | 121,709 | 25,203 | 1840 | 121,709 | 28,613 | 2800 | 114,171 | 30,001 |
| 881 | 114,171 | 25,680 | 1841 | 114,171 | 31,733 | 2801 | 114,171 | 29,552 |
| 882 | 114,171 | 27,490 | 1842 | 106,073 | 32,830 | 2802 | 116,104 | 29,501 |
| 883 | 114,171 | 26,867 | 1843 | 121,709 | 29,316 | 2803 | 116,104 | 29,501 |
| 884 | 121,709 | 26,329 | 1844 | 121,709 | 29,768 | 2804 | 112,204 | 30,070 |
| 885 | 114,171 | 28,067 | 1845 | 114,171 | 32,972 | 2805 | 116,104 | 29,501 |
| 886 | 114,171 | 28,757 | 1846 | 121,709 | 29,768 | 2806 | 116,104 | 29,501 |
| 887 | 114,171 | 30,502 | 1847 | 106,073 | 36,832 | 2807 | 114,171 | 28,067 |
| 888 | 121,709 | 29,768 | 1848 | 121,709 | 30,930 | 2808 | 116,104 | 28,187 |
| 889 | 114,171 | 32,972 | 1849 | 114,171 | 34,710 | 2809 | 116,104 | 29,355 |
| 890 | 114,171 | 32,972 | 1850 | 121,709 | 33,275 | 2810 | 112,204 | 32,289 |
| 891 | 114,171 | 35,043 | 1851 | 106,073 | 36,832 | 2811 | 116,104 | 31,725 |
| 892 | 121,709 | 32,872 | 1852 | 121,709 | 34,456 | 2812 | 114,171 | 32,972 |
| 893 | 106,073 | 37,718 | 1853 | 114,171 | 37,594 | 2813 | 116,104 | 33,650 |
| 894 | 121,709 | 35,266 | 1854 | 106,073 | 40,896 | 2814 | 112,204 | 35,319 |
| 895 | 114,171 | 35,946 | 1855 | 140,289 | 32,685 | 2815 | 116,104 | 34,459 |
| 896 | 106,073 | 39,089 | 1856 | 112,204 | 40,866 | 2816 | 114,171 | 36,316 |
| 897 | 121,709 | 33,720 | 1857 | 116,104 | 39,493 | 2817 | 112,204 | 35,657 |
| 898 | 106,073 | 39,744 | 1858 | 114,171 | 41,450 | 2818 | 116,104 | 36,969 |
| 899 | 121,709 | 32,513 | 1859 | 116,104 | 39,164 | 2819 | 114,171 | 35,472 |
| 900 | 106,073 | 38,691 | 1860 | 112,204 | 42,177 | 2820 | 112,204 | 36,953 |
| 901 | 114,171 | 34,659 | 1861 | 116,104 | 41,721 | 2821 | 114,171 | 36,731 |
| 902 | 106,073 | 35,924 | 1862 | 114,171 | 41,126 | 2822 | 112,204 | 38,254 |
| 903 | 121,709 | 31,308 | 1863 | 116,104 | 42,030 | 2823 | 112,204 | 39,558 |
| 904 | 106,073 | 35,924 | 1864 | 112,204 | 41,847 | 2824 | 114,171 | 40,162 |
| 905 | 121,709 | 31,682 | 1865 | 114,171 | 42,741 | 2825 | 116,104 | 39,493 |
| 906 | 106,073 | 35,924 | 1866 | 116,104 | 41,721 | 2826 | 112,204 | 41,847 |
| 907 | 121,709 | 30,108 | 1867 | 112,204 | 43,171 | 2827 | 114,171 | 41,450 |
| 908 | 106,073 | 35,548 | 1868 | 116,104 | 43,003 | 2828 | 112,204 | 43,171 |
| 909 | 114,171 | 33,375 | 1869 | 112,204 | 43,171 | 2829 | 114,171 | 45,036 |
| 910 | 106,073 | 35,924 | 1870 | 114,171 | 42,427 | 2830 | 112,204 | 43,171 |
| 911 | 121,709 | 31,308 | 1871 | 116,104 | 43,003 | 2831 | 114,171 | 42,427 |
| 912 | 106,073 | 35,924 | 1872 | 112,204 | 43,171 | 2832 | 112,204 | 40,526 |
| 913 | 121,709 | 32,513 | 1873 | 116,104 | 43,302 | 2833 | 114,171 | 40,162 |
| 914 | 106,073 | 34,992 | 1874 | 114,171 | 42,427 | 2834 | 112,204 | 39,558 |
| 915 | 121,709 | 31,682 | 1875 | 116,104 | 41,721 | 2835 | 114,171 | 37,594 |
| 916 | 106,073 | 34,546 | 1876 | 112,204 | 43,491 | 2836 | 112,204 | 39,206 |
| 917 | 114,171 | 33,774 | 1877 | 116,104 | 40,442 | 2837 | 116,104 | 35,712 |
| 918 | 106,073 | 34,992 | 1878 | 116,104 | 42,030 | 2838 | 114,171 | 36,731 |
| 919 | 121,709 | 31,682 | 1879 | 114,171 | 41,450 | 2839 | 112,204 | 33,080 |
| 920 | 106,073 | 34,546 | 1880 | 116,104 | 40,760 | 2840 | 112,204 | 33,551 |
| 921 | 121,709 | 30,496 | 1881 | 116,104 | 39,493 | 2841 | 116,104 | 33,650 |
| 922 | 106,073 | 34,546 | 1882 | 112,204 | 39,558 | 2842 | 114,171 | 31,733 |
| 923 | 114,171 | 32,096 | 1883 | 116,104 | 39,493 | 2843 | 116,104 | 31,205 |
| 924 | 114,171 | 32,096 | 1884 | 116,104 | 39,493 | 2844 | 112,204 | 31,596 |
| 925 | 114,171 | 32,510 | 1885 | 114,171 | 39,264 | 2845 | 114,171 | 30,502 |
| 926 | 106,073 | 33,174 | 1886 | 116,104 | 38,229 | 2846 | 116,104 | 29,994 |
| 927 | 121,709 | 30,496 | 1887 | 116,104 | 38,611 | 2847 | 112,204 | 31,036 |
| 928 | 106,073 | 33,174 | 1888 | 116,104 | 39,493 | 2848 | 114,171 | 30,502 |
| 929 | 121,709 | 30,108 | 1889 | 116,104 | 38,229 | 2849 | 116,104 | 29,994 |
| 930 | 114,171 | 31,252 | 1890 | 116,104 | 38,229 | 2850 | 112,204 | 30,375 |
| 931 | 106,073 | 34,992 | 1891 | 116,104 | 38,611 | 2851 | 114,171 | 29,279 |
| 932 | 121,709 | 28,912 | 1892 | 116,104 | 39,493 | 2852 | 116,104 | 29,994 |
| 933 | 106,073 | 33,638 | 1893 | 116,104 | 39,493 | 2853 | 112,204 | 30,375 |
| 934 | 121,709 | 30,496 | 1894 | 116,104 | 39,493 | 2854 | 114,171 | 30,502 |
| 935 | 114,171 | 32,096 | 1895 | 116,104 | 39,862 | 2855 | 116,104 | 30,535 |
| 936 | 106,073 | 34,992 | 1896 | 112,204 | 41,248 | 2856 | 112,204 | 31,036 |
| 937 | 121,709 | 31,682 | 1897 | 116,104 | 40,760 | 2857 | 114,171 | 31,733 |
| 938 | 106,073 | 35,924 | 1898 | 116,104 | 39,862 | 2858 | 116,104 | 31,205 |
| 939 | 121,709 | 32,513 | 1899 | 116,104 | 42,030 | 2859 | 112,204 | 33,551 |
| 940 | 114,171 | 34,659 | 1900 | 112,204 | 43,491 | 2860 | 112,204 | 34,366 |
| 941 | 114,171 | 35,946 | 1901 | 116,104 | 43,003 | 2861 | 114,171 | 34,219 |
| 942 | 114,171 | 37,237 | 1902 | 116,104 | 44,577 | 2862 | 116,104 | 35,712 |
| 943 | 106,073 | 45,372 | 1903 | 114,171 | 47,407 | 2863 | 112,204 | 37,375 |
| 944 | 121,709 | 42,873 | 1904 | 116,104 | 47,913 | 2864 | 114,171 | 39,827 |
| 945 | 106,073 | 50,804 | 1905 | 112,204 | 50,718 | 2865 | 112,204 | 42,655 |
| 946 | 121,709 | 44,117 | 1906 | 116,104 | 47,913 | 2866 | 114,171 | 46,092 |
| 947 | 106,073 | 50,804 | 1907 | 114,171 | 47,407 | 2867 | 112,204 | 46,683 |



|            |         |        |             |         |        |             |         |        |
|------------|---------|--------|-------------|---------|--------|-------------|---------|--------|
| <b>948</b> | 114,171 | 47,407 | <b>1908</b> | 112,204 | 48,238 | <b>2868</b> | 114,171 | 47,200 |
| <b>949</b> | 106,073 | 47,960 | <b>1909</b> | 116,104 | 46,858 | <b>2869</b> | 112,204 | 46,683 |
| <b>950</b> | 121,709 | 43,037 | <b>1910</b> | 114,171 | 45,036 | <b>2870</b> | 116,104 | 45,325 |
| <b>951</b> | 106,073 | 48,196 | <b>1911</b> | 116,104 | 46,858 | <b>2871</b> | 114,171 | 43,465 |
| <b>952</b> | 121,709 | 42,005 | <b>1912</b> | 112,204 | 45,825 | <b>2872</b> | 116,104 | 44,033 |
| <b>953</b> | 106,073 | 46,783 | <b>1913</b> | 116,104 | 45,571 | <b>2873</b> | 112,204 | 45,340 |
| <b>954</b> | 121,709 | 41,799 | <b>1914</b> | 116,104 | 46,858 | <b>2874</b> | 116,104 | 45,325 |
| <b>955</b> | 106,073 | 47,069 | <b>1915</b> | 114,171 | 44,778 | <b>2875</b> | 116,104 | 44,033 |
| <b>956</b> | 114,171 | 42,154 | <b>1916</b> | 116,104 | 44,286 | <b>2876</b> | 114,171 | 43,239 |
| <b>957</b> | 121,709 | 37,087 | <b>1917</b> | 116,104 | 43,003 | <b>2877</b> | 116,104 | 42,742 |
| <b>958</b> | 106,073 | 41,473 | <b>1918</b> | 116,104 | 41,721 | <b>2878</b> | 112,204 | 42,655 |
| <b>959</b> | 121,709 | 33,720 | <b>1919</b> | 112,204 | 40,866 | <b>2879</b> | 116,104 | 40,164 |
| <b>960</b> | 114,171 | 34,659 | <b>1920</b> | 116,104 | 37,890 | <b>2880</b> | 116,104 | 38,877 |

Tablica P.12. Izmjerene vrijednosti energija na stranama A i B za cijeli mjesec

| <b>Izmjerene energije na strani A i strani B za cijeli mjesec</b> |                                   |                                   |                   |                                   |                                   |                   |                             |                             |
|---|-----------------------------------|-----------------------------------|-------------------|-----------------------------------|-----------------------------------|-------------------|-----------------------------|-----------------------------|
| <b>Redni broj</b>   | <b>Energija na strani A [kWh]</b> | <b>Energija na strani B [kWh]</b> | <b>Redni broj</b> | <b>Energija na strani A [kWh]</b> | <b>Energija na strani B [kWh]</b> | <b>Redni broj</b> | <b>Energija na strani A</b> | <b>Energija na strani B</b> |
| 1   | 1650                              | 1650                              | 961               | 1584                              | 1584                              | 1921              | 1716                        | 1716                        |
| 2   | 1518                              | 1518                              | 962               | 1518                              | 1518                              | 1922              | 1716                        | 1716                        |
| 3   | 1452                              | 1452                              | 963               | 1452                              | 1452                              | 1923              | 1650                        | 1650                        |
| 4   | 1452                              | 1452                              | 964               | 1386                              | 1452                              | 1924              | 1650                        | 1650                        |
| 5   | 1386                              | 1386                              | 965               | 1386                              | 1320                              | 1925              | 1584                        | 1584                        |
| 6   | 1386                              | 1386                              | 966               | 1320                              | 1320                              | 1926              | 1518                        | 1584                        |
| 7   | 1320                              | 1320                              | 967               | 1320                              | 1386                              | 1927              | 1518                        | 1452                        |
| 8   | 1320                              | 1320                              | 968               | 1254                              | 1254                              | 1928              | 1452                        | 1518                        |
| 9   | 1254                              | 1320                              | 969               | 1254                              | 1254                              | 1929              | 1452                        | 1452                        |
| 10  | 1254                              | 1254                              | 970               | 1254                              | 1254                              | 1930              | 1386                        | 1386                        |
| 11  | 1254                              | 1254                              | 971               | 1188                              | 1188                              | 1931              | 1386                        | 1386                        |
| 12  | 1254                              | 1188                              | 972               | 1254                              | 1254                              | 1932              | 1320                        | 1320                        |
| 13  | 1254                              | 1320                              | 973               | 1254                              | 1254                              | 1933              | 1386                        | 1386                        |
| 14  | 1254                              | 1254                              | 974               | 1254                              | 1254                              | 1934              | 1386                        | 1386                        |
| 15  | 1254                              | 1254                              | 975               | 1254                              | 1254                              | 1935              | 1320                        | 1320                        |
| 16  | 1254                              | 1254                              | 976               | 1254                              | 1254                              | 1936              | 1386                        | 1386                        |
| 17  | 1254                              | 1254                              | 977               | 1254                              | 1254                              | 1937              | 1320                        | 1386                        |
| 18  | 1254                              | 1320                              | 978               | 1188                              | 1254                              | 1938              | 1386                        | 1320                        |
| 19  | 1320                              | 1254                              | 979               | 1320                              | 1254                              | 1939              | 1320                        | 1386                        |
| 20  | 1320                              | 1320                              | 980               | 1254                              | 1320                              | 1940              | 1452                        | 1386                        |
| 21  | 1254                              | 1320                              | 981               | 1386                              | 1320                              | 1941              | 1452                        | 1518                        |
| 22  | 1386                              | 1320                              | 982               | 1386                              | 1386                              | 1942              | 1518                        | 1452                        |
| 23  | 1386                              | 1386                              | 983               | 1452                              | 1452                              | 1943              | 1452                        | 1518                        |
| 24  | 1320                              | 1386                              | 984               | 1452                              | 1452                              | 1944              | 1518                        | 1518                        |
| 25  | 1386                              | 1386                              | 985               | 1452                              | 1518                              | 1945              | 1452                        | 1452                        |
| 26  | 1320                              | 1320                              | 986               | 1518                              | 1518                              | 1946              | 1584                        | 1584                        |
| 27  | 1386                              | 1386                              | 987               | 1584                              | 1584                              | 1947              | 1584                        | 1584                        |
| 28  | 1452                              | 1452                              | 988               | 1650                              | 1650                              | 1948              | 1650                        | 1650                        |
| 29  | 1518                              | 1518                              | 989               | 1650                              | 1650                              | 1949              | 1716                        | 1716                        |
| 30  | 1518                              | 1518                              | 990               | 1452                              | 1518                              | 1950              | 1716                        | 1716                        |
| 31  | 1518                              | 1584                              | 991               | 1122                              | 1122                              | 1951              | 1782                        | 1782                        |
| 32  | 1584                              | 1518                              | 992               | 1122                              | 1056                              | 1952              | 1848                        | 1914                        |
| 33  | 1584                              | 1584                              | 993               | 1056                              | 1056                              | 1953              | 1914                        | 1848                        |
| 34  | 1584                              | 1650                              | 994               | 1056                              | 1056                              | 1954              | 1848                        | 1914                        |
| 35  | 1650                              | 1584                              | 995               | 990                               | 1056                              | 1955              | 1980                        | 1980                        |
| 36  | 1584                              | 1650                              | 996               | 1056                              | 1056                              | 1956              | 1848                        | 1848                        |
| 37  | 1650                              | 1650                              | 997               | 1056                              | 1056                              | 1957              | 1914                        | 1914                        |
| 38  | 1584                              | 1584                              | 998               | 1056                              | 1056                              | 1958              | 1914                        | 1914                        |
| 39  | 1650                              | 1650                              | 999               | 990                               | 990                               | 1959              | 1848                        | 1848                        |
| 40  | 1584                              | 1584                              | 1000              | 1056                              | 1056                              | 1960              | 1848                        | 1848                        |
| 41  | 1584                              | 1584                              | 1001              | 1056                              | 1056                              | 1961              | 1848                        | 1848                        |
| 42  | 1584                              | 1584                              | 1002              | 1056                              | 1056                              | 1962              | 1848                        | 1914                        |
| 43  | 1584                              | 1650                              | 1003              | 990                               | 990                               | 1963              | 1848                        | 1848                        |
| 44  | 1650                              | 1584                              | 1004              | 1056                              | 1056                              | 1964              | 1914                        | 1914                        |
| 45  | 1584                              | 1650                              | 1005              | 990                               | 1056                              | 1965              | 1914                        | 1914                        |
| 46  | 1584                              | 1584                              | 1006              | 1056                              | 990                               | 1966              | 1914                        | 1914                        |
| 47  | 1584                              | 1584                              | 1007              | 990                               | 1056                              | 1967              | 1914                        | 1914                        |
| 48  | 1584                              | 1584                              | 1008              | 1056                              | 1056                              | 1968              | 1914                        | 1914                        |
| 49  | 1650                              | 1584                              | 1009              | 990                               | 990                               | 1969              | 1914                        | 1914                        |
| 50  | 1518                              | 1584                              | 1010              | 1056                              | 990                               | 1970              | 1848                        | 1914                        |
| 51  | 1584                              | 1584                              | 1011              | 1056                              | 1056                              | 1971              | 1914                        | 1848                        |
| 52  | 1584                              | 1584                              | 1012              | 1056                              | 1056                              | 1972              | 1848                        | 1914                        |
| 53  | 1518                              | 1518                              | 1013              | 990                               | 1056                              | 1973              | 1848                        | 1848                        |
| 54  | 1518                              | 1584                              | 1014              | 1056                              | 990                               | 1974              | 1914                        | 1848                        |

|     |      |      |      |      |      |      |      |      |
|-----|------|------|------|------|------|------|------|------|
| 55  | 1584 | 1518 | 1015 | 1320 | 1386 | 1975 | 1782 | 1848 |
| 56  | 1518 | 1584 | 1016 | 1518 | 1518 | 1976 | 1848 | 1848 |
| 57  | 1518 | 1518 | 1017 | 1584 | 1584 | 1977 | 1782 | 1782 |
| 58  | 1518 | 1518 | 1018 | 1584 | 1584 | 1978 | 1782 | 1848 |
| 59  | 1518 | 1518 | 1019 | 1518 | 1584 | 1979 | 1782 | 1782 |
| 60  | 1518 | 1518 | 1020 | 1584 | 1518 | 1980 | 1782 | 1782 |
| 61  | 1518 | 1452 | 1021 | 1518 | 1518 | 1981 | 1716 | 1716 |
| 62  | 1452 | 1518 | 1022 | 1518 | 1518 | 1982 | 1716 | 1650 |
| 63  | 1452 | 1452 | 1023 | 1518 | 1518 | 1983 | 1650 | 1716 |
| 64  | 1518 | 1518 | 1024 | 1518 | 1518 | 1984 | 1716 | 1650 |
| 65  | 1518 | 1518 | 1025 | 1518 | 1518 | 1985 | 1650 | 1716 |
| 66  | 1452 | 1518 | 1026 | 1518 | 1584 | 1986 | 1716 | 1716 |
| 67  | 1518 | 1518 | 1027 | 1584 | 1584 | 1987 | 1716 | 1716 |
| 68  | 1518 | 1452 | 1028 | 1584 | 1584 | 1988 | 1716 | 1716 |
| 69  | 1518 | 1518 | 1029 | 1584 | 1584 | 1989 | 1716 | 1716 |
| 70  | 1518 | 1518 | 1030 | 1518 | 1518 | 1990 | 1716 | 1782 |
| 71  | 1518 | 1584 | 1031 | 1584 | 1584 | 1991 | 1716 | 1716 |
| 72  | 1584 | 1518 | 1032 | 1650 | 1650 | 1992 | 1782 | 1716 |
| 73  | 1584 | 1584 | 1033 | 1650 | 1650 | 1993 | 1716 | 1716 |
| 74  | 1584 | 1650 | 1034 | 1650 | 1716 | 1994 | 1716 | 1716 |
| 75  | 1650 | 1650 | 1035 | 1716 | 1716 | 1995 | 1782 | 1782 |
| 76  | 1716 | 1716 | 1036 | 1782 | 1716 | 1996 | 1848 | 1848 |
| 77  | 1782 | 1782 | 1037 | 1782 | 1848 | 1997 | 1848 | 1914 |
| 78  | 1980 | 1980 | 1038 | 1980 | 1980 | 1998 | 1914 | 1914 |
| 79  | 2178 | 2178 | 1039 | 2112 | 2046 | 1999 | 1980 | 1980 |
| 80  | 2310 | 2376 | 1040 | 2178 | 2244 | 2000 | 2178 | 2178 |
| 81  | 2376 | 2376 | 1041 | 2244 | 2244 | 2001 | 2310 | 2310 |
| 82  | 2376 | 2376 | 1042 | 2244 | 2310 | 2002 | 2310 | 2376 |
| 83  | 2310 | 2310 | 1043 | 2244 | 2178 | 2003 | 2310 | 2310 |
| 84  | 2310 | 2310 | 1044 | 2178 | 2244 | 2004 | 2310 | 2244 |
| 85  | 2244 | 2244 | 1045 | 2112 | 2112 | 2005 | 2244 | 2310 |
| 86  | 2244 | 2244 | 1046 | 2112 | 2112 | 2006 | 2178 | 2178 |
| 87  | 2178 | 2244 | 1047 | 2178 | 2112 | 2007 | 2310 | 2310 |
| 88  | 2112 | 2112 | 1048 | 2112 | 2178 | 2008 | 2178 | 2244 |
| 89  | 2112 | 2046 | 1049 | 2112 | 2112 | 2009 | 2310 | 2244 |
| 90  | 2046 | 2112 | 1050 | 2112 | 2112 | 2010 | 2244 | 2310 |
| 91  | 2046 | 2046 | 1051 | 2046 | 2046 | 2011 | 2244 | 2244 |
| 92  | 1980 | 1980 | 1052 | 1980 | 2046 | 2012 | 2244 | 2244 |
| 93  | 1914 | 1914 | 1053 | 1914 | 1848 | 2013 | 2178 | 2178 |
| 94  | 1782 | 1782 | 1054 | 1782 | 1782 | 2014 | 2112 | 2046 |
| 95  | 1716 | 1716 | 1055 | 1650 | 1716 | 2015 | 1980 | 2046 |
| 96  | 1584 | 1650 | 1056 | 1584 | 1584 | 2016 | 1914 | 1914 |
| 97  | 1584 | 1518 | 1057 | 1518 | 1518 | 2017 | 1782 | 1782 |
| 98  | 1518 | 1518 | 1058 | 1518 | 1452 | 2018 | 1716 | 1716 |
| 99  | 1452 | 1518 | 1059 | 1386 | 1452 | 2019 | 1650 | 1716 |
| 100 | 1386 | 1386 | 1060 | 1386 | 1386 | 2020 | 1650 | 1584 |
| 101 | 1386 | 1386 | 1061 | 1386 | 1386 | 2021 | 1584 | 1584 |
| 102 | 1320 | 1320 | 1062 | 1320 | 1320 | 2022 | 1518 | 1584 |
| 103 | 1320 | 1320 | 1063 | 1320 | 1320 | 2023 | 1518 | 1518 |
| 104 | 1320 | 1320 | 1064 | 1254 | 1254 | 2024 | 1452 | 1452 |
| 105 | 1254 | 1254 | 1065 | 1254 | 1254 | 2025 | 1386 | 1386 |
| 106 | 1254 | 1254 | 1066 | 1188 | 1188 | 2026 | 1452 | 1452 |
| 107 | 1254 | 1254 | 1067 | 1254 | 1254 | 2027 | 1386 | 1386 |
| 108 | 1254 | 1254 | 1068 | 1188 | 1254 | 2028 | 1386 | 1386 |
| 109 | 1188 | 1188 | 1069 | 1254 | 1188 | 2029 | 1386 | 1386 |
| 110 | 1254 | 1254 | 1070 | 1188 | 1254 | 2030 | 1320 | 1320 |
| 111 | 1188 | 1254 | 1071 | 1254 | 1254 | 2031 | 1386 | 1386 |
| 112 | 1254 | 1188 | 1072 | 1254 | 1188 | 2032 | 1320 | 1320 |
| 113 | 1188 | 1254 | 1073 | 1188 | 1254 | 2033 | 1386 | 1386 |

|     |      |      |      |      |      |      |      |      |
|-----|------|------|------|------|------|------|------|------|
| 114 | 1254 | 1188 | 1074 | 1254 | 1254 | 2034 | 1386 | 1386 |
| 115 | 1188 | 1254 | 1075 | 1254 | 1254 | 2035 | 1386 | 1386 |
| 116 | 1254 | 1254 | 1076 | 1320 | 1320 | 2036 | 1386 | 1452 |
| 117 | 1254 | 1254 | 1077 | 1386 | 1320 | 2037 | 1452 | 1386 |
| 118 | 1254 | 1254 | 1078 | 1386 | 1452 | 2038 | 1386 | 1452 |
| 119 | 1254 | 1254 | 1079 | 1386 | 1386 | 2039 | 1452 | 1452 |
| 120 | 1254 | 1254 | 1080 | 1452 | 1452 | 2040 | 1386 | 1386 |
| 121 | 1254 | 1254 | 1081 | 1452 | 1452 | 2041 | 1386 | 1386 |
| 122 | 1254 | 1254 | 1082 | 1518 | 1584 | 2042 | 1452 | 1386 |
| 123 | 1254 | 1254 | 1083 | 1650 | 1584 | 2043 | 1452 | 1518 |
| 124 | 1320 | 1320 | 1084 | 1650 | 1650 | 2044 | 1518 | 1518 |
| 125 | 1386 | 1386 | 1085 | 1716 | 1716 | 2045 | 1584 | 1584 |
| 126 | 1518 | 1518 | 1086 | 1716 | 1782 | 2046 | 1650 | 1650 |
| 127 | 1452 | 1518 | 1087 | 1782 | 1716 | 2047 | 1650 | 1650 |
| 128 | 1584 | 1518 | 1088 | 1716 | 1782 | 2048 | 1716 | 1782 |
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| 689 | 1254 | 1254 | 1649 | 1188 | 1188 | 2609 | 1386 | 1320 |
| 690 | 1254 | 1254 | 1650 | 1188 | 1188 | 2610 | 1386 | 1386 |
| 691 | 1320 | 1320 | 1651 | 1188 | 1188 | 2611 | 1386 | 1452 |
| 692 | 1320 | 1320 | 1652 | 1188 | 1188 | 2612 | 1452 | 1386 |
| 693 | 1320 | 1320 | 1653 | 1254 | 1254 | 2613 | 1452 | 1518 |
| 694 | 1320 | 1386 | 1654 | 1320 | 1320 | 2614 | 1584 | 1518 |
| 695 | 1320 | 1320 | 1655 | 1254 | 1254 | 2615 | 1452 | 1518 |
| 696 | 1386 | 1320 | 1656 | 1320 | 1386 | 2616 | 1518 | 1518 |
| 697 | 1320 | 1320 | 1657 | 1386 | 1320 | 2617 | 1584 | 1584 |
| 698 | 1320 | 1386 | 1658 | 1452 | 1452 | 2618 | 1782 | 1782 |
| 699 | 1386 | 1386 | 1659 | 1452 | 1518 | 2619 | 1782 | 1782 |
| 700 | 1452 | 1452 | 1660 | 1584 | 1518 | 2620 | 1848 | 1848 |
| 701 | 1518 | 1518 | 1661 | 1584 | 1650 | 2621 | 2046 | 2046 |
| 702 | 1584 | 1584 | 1662 | 1650 | 1650 | 2622 | 1980 | 2046 |
| 703 | 1584 | 1584 | 1663 | 1650 | 1650 | 2623 | 2046 | 1980 |

|     |      |      |      |      |      |      |      |      |
|-----|------|------|------|------|------|------|------|------|
| 704 | 1650 | 1650 | 1664 | 1650 | 1650 | 2624 | 1980 | 2046 |
| 705 | 1584 | 1650 | 1665 | 1716 | 1716 | 2625 | 1980 | 1914 |
| 706 | 1650 | 1650 | 1666 | 1716 | 1716 | 2626 | 1980 | 2046 |
| 707 | 1716 | 1650 | 1667 | 1716 | 1716 | 2627 | 1980 | 1980 |
| 708 | 1650 | 1716 | 1668 | 1716 | 1716 | 2628 | 2046 | 2046 |
| 709 | 1716 | 1716 | 1669 | 1782 | 1782 | 2629 | 2046 | 2046 |
| 710 | 1782 | 1782 | 1670 | 1650 | 1650 | 2630 | 1980 | 1980 |
| 711 | 1782 | 1782 | 1671 | 1650 | 1716 | 2631 | 1914 | 1980 |
| 712 | 1782 | 1782 | 1672 | 1716 | 1650 | 2632 | 1980 | 1914 |
| 713 | 1782 | 1782 | 1673 | 1584 | 1650 | 2633 | 1980 | 1980 |
| 714 | 1782 | 1782 | 1674 | 1650 | 1584 | 2634 | 1980 | 1980 |
| 715 | 1782 | 1782 | 1675 | 1650 | 1650 | 2635 | 2046 | 2112 |
| 716 | 1716 | 1782 | 1676 | 1650 | 1716 | 2636 | 2046 | 2046 |
| 717 | 1782 | 1716 | 1677 | 1650 | 1650 | 2637 | 1980 | 1980 |
| 718 | 1782 | 1782 | 1678 | 1650 | 1650 | 2638 | 2046 | 2046 |
| 719 | 1782 | 1782 | 1679 | 1650 | 1650 | 2639 | 2046 | 2046 |
| 720 | 1782 | 1782 | 1680 | 1650 | 1650 | 2640 | 1980 | 1980 |
| 721 | 1716 | 1782 | 1681 | 1650 | 1650 | 2641 | 2046 | 2046 |
| 722 | 1782 | 1782 | 1682 | 1650 | 1650 | 2642 | 2046 | 2046 |
| 723 | 1716 | 1716 | 1683 | 1650 | 1650 | 2643 | 1914 | 1980 |
| 724 | 1716 | 1716 | 1684 | 1650 | 1650 | 2644 | 1914 | 1914 |
| 725 | 1716 | 1716 | 1685 | 1650 | 1650 | 2645 | 1848 | 1848 |
| 726 | 1716 | 1782 | 1686 | 1584 | 1650 | 2646 | 1782 | 1782 |
| 727 | 1716 | 1650 | 1687 | 1650 | 1584 | 2647 | 1782 | 1782 |
| 728 | 1650 | 1716 | 1688 | 1518 | 1584 | 2648 | 1782 | 1716 |
| 729 | 1650 | 1650 | 1689 | 1584 | 1584 | 2649 | 1716 | 1782 |
| 730 | 1650 | 1650 | 1690 | 1584 | 1584 | 2650 | 1782 | 1782 |
| 731 | 1650 | 1650 | 1691 | 1650 | 1650 | 2651 | 1782 | 1782 |
| 732 | 1650 | 1584 | 1692 | 1584 | 1584 | 2652 | 1782 | 1782 |
| 733 | 1584 | 1650 | 1693 | 1584 | 1650 | 2653 | 1782 | 1848 |
| 734 | 1584 | 1584 | 1694 | 1650 | 1584 | 2654 | 1848 | 1782 |
| 735 | 1650 | 1650 | 1695 | 1584 | 1584 | 2655 | 1782 | 1848 |
| 736 | 1584 | 1584 | 1696 | 1584 | 1584 | 2656 | 1848 | 1782 |
| 737 | 1650 | 1650 | 1697 | 1584 | 1650 | 2657 | 1782 | 1848 |
| 738 | 1584 | 1584 | 1698 | 1650 | 1584 | 2658 | 1848 | 1848 |
| 739 | 1650 | 1650 | 1699 | 1584 | 1650 | 2659 | 1848 | 1848 |
| 740 | 1650 | 1650 | 1700 | 1650 | 1584 | 2660 | 1914 | 1914 |
| 741 | 1650 | 1650 | 1701 | 1650 | 1650 | 2661 | 1914 | 1914 |
| 742 | 1650 | 1716 | 1702 | 1650 | 1716 | 2662 | 1980 | 1980 |
| 743 | 1716 | 1650 | 1703 | 1716 | 1716 | 2663 | 1914 | 1914 |
| 744 | 1716 | 1716 | 1704 | 1716 | 1716 | 2664 | 1848 | 1914 |
| 745 | 1716 | 1782 | 1705 | 1782 | 1782 | 2665 | 1914 | 1848 |
| 746 | 1782 | 1782 | 1706 | 1782 | 1782 | 2666 | 1914 | 1980 |
| 747 | 1782 | 1782 | 1707 | 1848 | 1848 | 2667 | 1980 | 1914 |
| 748 | 1848 | 1848 | 1708 | 1848 | 1848 | 2668 | 2046 | 2112 |
| 749 | 1848 | 1848 | 1709 | 1914 | 1980 | 2669 | 2178 | 2178 |
| 750 | 1980 | 1980 | 1710 | 2046 | 2046 | 2670 | 2244 | 2244 |
| 751 | 2112 | 2112 | 1711 | 2178 | 2178 | 2671 | 2310 | 2310 |
| 752 | 2244 | 2244 | 1712 | 2244 | 2244 | 2672 | 2508 | 2574 |
| 753 | 2244 | 2310 | 1713 | 2244 | 2244 | 2673 | 2706 | 2640 |
| 754 | 2310 | 2310 | 1714 | 2244 | 2244 | 2674 | 2640 | 2706 |
| 755 | 2310 | 2310 | 1715 | 2244 | 2244 | 2675 | 2640 | 2640 |
| 756 | 2244 | 2310 | 1716 | 2178 | 2178 | 2676 | 2574 | 2574 |
| 757 | 2310 | 2244 | 1717 | 2112 | 2178 | 2677 | 2574 | 2574 |
| 758 | 2244 | 2244 | 1718 | 2112 | 2112 | 2678 | 2442 | 2442 |
| 759 | 2244 | 2244 | 1719 | 2178 | 2178 | 2679 | 2376 | 2442 |
| 760 | 2244 | 2244 | 1720 | 2112 | 2112 | 2680 | 2442 | 2376 |
| 761 | 2178 | 2244 | 1721 | 2112 | 2112 | 2681 | 2442 | 2508 |
| 762 | 2178 | 2178 | 1722 | 2178 | 2178 | 2682 | 2574 | 2574 |

|     |      |      |      |      |      |      |      |      |
|-----|------|------|------|------|------|------|------|------|
| 763 | 2112 | 2112 | 1723 | 2112 | 2112 | 2683 | 2574 | 2574 |
| 764 | 2046 | 2046 | 1724 | 2046 | 2112 | 2684 | 2442 | 2442 |
| 765 | 1980 | 1980 | 1725 | 1914 | 1914 | 2685 | 2310 | 2310 |
| 766 | 1848 | 1848 | 1726 | 1848 | 1848 | 2686 | 2178 | 2244 |
| 767 | 1782 | 1848 | 1727 | 1782 | 1782 | 2687 | 2112 | 2112 |
| 768 | 1716 | 1650 | 1728 | 1716 | 1716 | 2688 | 1980 | 1980 |
| 769 | 1584 | 1584 | 1729 | 1650 | 1650 | 2689 | 1914 | 1914 |
| 770 | 1518 | 1584 | 1730 | 1584 | 1584 | 2690 | 1782 | 1782 |
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| 772 | 1452 | 1452 | 1732 | 1518 | 1452 | 2692 | 1716 | 1716 |
| 773 | 1320 | 1320 | 1733 | 1452 | 1452 | 2693 | 1650 | 1716 |
| 774 | 1386 | 1386 | 1734 | 1386 | 1452 | 2694 | 1650 | 1584 |
| 775 | 1254 | 1320 | 1735 | 1386 | 1386 | 2695 | 1518 | 1584 |
| 776 | 1320 | 1254 | 1736 | 1320 | 1320 | 2696 | 1518 | 1518 |
| 777 | 1254 | 1254 | 1737 | 1320 | 1320 | 2697 | 1452 | 1452 |
| 778 | 1254 | 1320 | 1738 | 1320 | 1320 | 2698 | 1452 | 1452 |
| 779 | 1254 | 1188 | 1739 | 1320 | 1320 | 2699 | 1452 | 1452 |
| 780 | 1188 | 1254 | 1740 | 1320 | 1320 | 2700 | 1386 | 1386 |
| 781 | 1254 | 1188 | 1741 | 1320 | 1320 | 2701 | 1452 | 1452 |
| 782 | 1188 | 1254 | 1742 | 1254 | 1320 | 2702 | 1452 | 1452 |
| 783 | 1254 | 1188 | 1743 | 1320 | 1254 | 2703 | 1386 | 1386 |
| 784 | 1188 | 1254 | 1744 | 1254 | 1320 | 2704 | 1386 | 1452 |
| 785 | 1188 | 1188 | 1745 | 1320 | 1320 | 2705 | 1452 | 1386 |
| 786 | 1254 | 1254 | 1746 | 1320 | 1320 | 2706 | 1452 | 1452 |
| 787 | 1188 | 1188 | 1747 | 1320 | 1320 | 2707 | 1386 | 1452 |
| 788 | 1254 | 1254 | 1748 | 1386 | 1386 | 2708 | 1452 | 1452 |
| 789 | 1188 | 1254 | 1749 | 1386 | 1386 | 2709 | 1452 | 1452 |
| 790 | 1320 | 1254 | 1750 | 1386 | 1386 | 2710 | 1518 | 1518 |
| 791 | 1254 | 1254 | 1751 | 1452 | 1518 | 2711 | 1452 | 1452 |
| 792 | 1254 | 1254 | 1752 | 1518 | 1452 | 2712 | 1452 | 1452 |
| 793 | 1188 | 1188 | 1753 | 1452 | 1518 | 2713 | 1452 | 1452 |
| 794 | 1122 | 1188 | 1754 | 1584 | 1518 | 2714 | 1584 | 1584 |
| 795 | 1254 | 1188 | 1755 | 1584 | 1584 | 2715 | 1584 | 1584 |
| 796 | 1254 | 1320 | 1756 | 1584 | 1650 | 2716 | 1716 | 1716 |
| 797 | 1320 | 1320 | 1757 | 1650 | 1650 | 2717 | 1716 | 1782 |
| 798 | 1452 | 1452 | 1758 | 1716 | 1716 | 2718 | 1848 | 1782 |
| 799 | 1452 | 1452 | 1759 | 1782 | 1782 | 2719 | 1848 | 1848 |
| 800 | 1584 | 1584 | 1760 | 1782 | 1782 | 2720 | 1848 | 1914 |
| 801 | 1518 | 1518 | 1761 | 1848 | 1848 | 2721 | 1848 | 1848 |
| 802 | 1518 | 1584 | 1762 | 1848 | 1914 | 2722 | 1914 | 1914 |
| 803 | 1650 | 1584 | 1763 | 1980 | 1914 | 2723 | 1914 | 1914 |
| 804 | 1650 | 1650 | 1764 | 1914 | 1980 | 2724 | 1914 | 1914 |
| 805 | 1650 | 1716 | 1765 | 1980 | 1980 | 2725 | 1914 | 1980 |
| 806 | 1782 | 1716 | 1766 | 1980 | 1980 | 2726 | 2046 | 1980 |
| 807 | 1716 | 1782 | 1767 | 1980 | 1980 | 2727 | 1980 | 1980 |
| 808 | 1782 | 1782 | 1768 | 1980 | 1914 | 2728 | 2046 | 2046 |
| 809 | 1782 | 1782 | 1769 | 1914 | 1980 | 2729 | 2046 | 2112 |
| 810 | 1782 | 1782 | 1770 | 1980 | 1980 | 2730 | 2112 | 2112 |
| 811 | 1848 | 1848 | 1771 | 1980 | 2046 | 2731 | 2178 | 2178 |
| 812 | 1782 | 1782 | 1772 | 2046 | 1980 | 2732 | 2244 | 2244 |
| 813 | 1848 | 1848 | 1773 | 1980 | 2046 | 2733 | 2244 | 2244 |
| 814 | 1782 | 1782 | 1774 | 1980 | 1980 | 2734 | 2244 | 2244 |
| 815 | 1782 | 1848 | 1775 | 1980 | 1980 | 2735 | 2178 | 2244 |
| 816 | 1716 | 1716 | 1776 | 1980 | 1980 | 2736 | 2244 | 2244 |
| 817 | 1716 | 1650 | 1777 | 1980 | 1980 | 2737 | 2244 | 2244 |
| 818 | 1584 | 1650 | 1778 | 1980 | 1980 | 2738 | 2244 | 2244 |
| 819 | 1584 | 1584 | 1779 | 1914 | 1914 | 2739 | 2244 | 2244 |
| 820 | 1518 | 1518 | 1780 | 1848 | 1914 | 2740 | 2244 | 2244 |
| 821 | 1518 | 1518 | 1781 | 1914 | 1848 | 2741 | 2178 | 2178 |

|     |      |      |      |      |      |      |      |      |
|-----|------|------|------|------|------|------|------|------|
| 822 | 1452 | 1452 | 1782 | 1848 | 1848 | 2742 | 2178 | 2178 |
| 823 | 1452 | 1452 | 1783 | 1782 | 1848 | 2743 | 2112 | 2112 |
| 824 | 1386 | 1386 | 1784 | 1782 | 1782 | 2744 | 1980 | 1980 |
| 825 | 1386 | 1386 | 1785 | 1782 | 1782 | 2745 | 1980 | 1980 |
| 826 | 1254 | 1320 | 1786 | 1782 | 1782 | 2746 | 1980 | 1980 |
| 827 | 1320 | 1254 | 1787 | 1782 | 1782 | 2747 | 1980 | 2046 |
| 828 | 1254 | 1254 | 1788 | 1782 | 1782 | 2748 | 1980 | 1980 |
| 829 | 1254 | 1320 | 1789 | 1716 | 1716 | 2749 | 1980 | 1980 |
| 830 | 1254 | 1254 | 1790 | 1716 | 1782 | 2750 | 1914 | 1980 |
| 831 | 1254 | 1254 | 1791 | 1716 | 1716 | 2751 | 1980 | 1980 |
| 832 | 1188 | 1188 | 1792 | 1782 | 1716 | 2752 | 1980 | 1980 |
| 833 | 1188 | 1188 | 1793 | 1716 | 1716 | 2753 | 2046 | 1980 |
| 834 | 1254 | 1254 | 1794 | 1716 | 1716 | 2754 | 1980 | 1980 |
| 835 | 1188 | 1254 | 1795 | 1716 | 1782 | 2755 | 1980 | 2046 |
| 836 | 1254 | 1254 | 1796 | 1782 | 1716 | 2756 | 2046 | 2046 |
| 837 | 1254 | 1254 | 1797 | 1782 | 1848 | 2757 | 2046 | 2046 |
| 838 | 1254 | 1254 | 1798 | 1782 | 1782 | 2758 | 2046 | 2046 |
| 839 | 1254 | 1254 | 1799 | 1848 | 1848 | 2759 | 2046 | 2046 |
| 840 | 1320 | 1254 | 1800 | 1848 | 1914 | 2760 | 2046 | 2112 |
| 841 | 1254 | 1320 | 1801 | 1914 | 1848 | 2761 | 2112 | 2046 |
| 842 | 1320 | 1320 | 1802 | 1914 | 1914 | 2762 | 2112 | 2112 |
| 843 | 1386 | 1320 | 1803 | 1980 | 1980 | 2763 | 2112 | 2178 |
| 844 | 1386 | 1386 | 1804 | 1980 | 2046 | 2764 | 2178 | 2178 |
| 845 | 1386 | 1452 | 1805 | 2046 | 2046 | 2765 | 2178 | 2178 |
| 846 | 1584 | 1584 | 1806 | 2112 | 2112 | 2766 | 2244 | 2244 |
| 847 | 1716 | 1716 | 1807 | 2244 | 2244 | 2767 | 2310 | 2310 |
| 848 | 1914 | 1914 | 1808 | 2310 | 2310 | 2768 | 2376 | 2376 |
| 849 | 2046 | 2046 | 1809 | 2310 | 2376 | 2769 | 2508 | 2508 |
| 850 | 1980 | 2046 | 1810 | 2376 | 2376 | 2770 | 2508 | 2574 |
| 851 | 2046 | 1980 | 1811 | 2310 | 2310 | 2771 | 2574 | 2574 |
| 852 | 1980 | 2046 | 1812 | 2310 | 2310 | 2772 | 2574 | 2574 |
| 853 | 1980 | 1980 | 1813 | 2244 | 2244 | 2773 | 2442 | 2442 |
| 854 | 1980 | 1980 | 1814 | 2244 | 2178 | 2774 | 2442 | 2508 |
| 855 | 1914 | 1914 | 1815 | 2178 | 2244 | 2775 | 2442 | 2376 |
| 856 | 1980 | 1980 | 1816 | 2244 | 2244 | 2776 | 2376 | 2442 |
| 857 | 1980 | 1980 | 1817 | 2178 | 2178 | 2777 | 2574 | 2508 |
| 858 | 1980 | 1980 | 1818 | 2244 | 2310 | 2778 | 2508 | 2574 |
| 859 | 1980 | 1980 | 1819 | 2244 | 2244 | 2779 | 2508 | 2508 |
| 860 | 1914 | 1914 | 1820 | 2178 | 2178 | 2780 | 2442 | 2442 |
| 861 | 1782 | 1848 | 1821 | 2112 | 2112 | 2781 | 2376 | 2376 |
| 862 | 1782 | 1716 | 1822 | 2046 | 2046 | 2782 | 2244 | 2244 |
| 863 | 1650 | 1716 | 1823 | 1914 | 1914 | 2783 | 2046 | 2112 |
| 864 | 1518 | 1518 | 1824 | 1848 | 1848 | 2784 | 2046 | 1980 |
| 865 | 1518 | 1518 | 1825 | 1782 | 1782 | 2785 | 1914 | 1980 |
| 866 | 1386 | 1386 | 1826 | 1650 | 1650 | 2786 | 1914 | 1914 |
| 867 | 1386 | 1386 | 1827 | 1584 | 1650 | 2787 | 1848 | 1848 |
| 868 | 1320 | 1320 | 1828 | 1650 | 1584 | 2788 | 1716 | 1716 |
| 869 | 1254 | 1254 | 1829 | 1518 | 1518 | 2789 | 1650 | 1650 |
| 870 | 1254 | 1254 | 1830 | 1518 | 1584 | 2790 | 1584 | 1650 |
| 871 | 1188 | 1188 | 1831 | 1518 | 1452 | 2791 | 1584 | 1518 |
| 872 | 1188 | 1254 | 1832 | 1452 | 1518 | 2792 | 1518 | 1518 |
| 873 | 1188 | 1188 | 1833 | 1452 | 1452 | 2793 | 1452 | 1452 |
| 874 | 1188 | 1188 | 1834 | 1386 | 1386 | 2794 | 1452 | 1518 |
| 875 | 1188 | 1188 | 1835 | 1386 | 1386 | 2795 | 1452 | 1386 |
| 876 | 1188 | 1122 | 1836 | 1386 | 1386 | 2796 | 1386 | 1452 |
| 877 | 1122 | 1188 | 1837 | 1386 | 1452 | 2797 | 1452 | 1386 |
| 878 | 1188 | 1188 | 1838 | 1452 | 1386 | 2798 | 1386 | 1452 |
| 879 | 1188 | 1188 | 1839 | 1452 | 1452 | 2799 | 1386 | 1386 |
| 880 | 1188 | 1188 | 1840 | 1386 | 1452 | 2800 | 1386 | 1386 |



|     |      |      |      |      |      |      |      |      |
|-----|------|------|------|------|------|------|------|------|
| 881 | 1122 | 1122 | 1841 | 1452 | 1386 | 2801 | 1386 | 1386 |
| 882 | 1188 | 1188 | 1842 | 1386 | 1452 | 2802 | 1386 | 1386 |
| 883 | 1188 | 1188 | 1843 | 1452 | 1452 | 2803 | 1386 | 1386 |
| 884 | 1254 | 1254 | 1844 | 1452 | 1452 | 2804 | 1386 | 1386 |
| 885 | 1254 | 1254 | 1845 | 1518 | 1452 | 2805 | 1386 | 1452 |
| 886 | 1320 | 1386 | 1846 | 1452 | 1584 | 2806 | 1386 | 1320 |
| 887 | 1386 | 1386 | 1847 | 1584 | 1518 | 2807 | 1254 | 1320 |
| 888 | 1452 | 1452 | 1848 | 1518 | 1518 | 2808 | 1254 | 1254 |
| 889 | 1518 | 1452 | 1849 | 1584 | 1584 | 2809 | 1320 | 1320 |
| 890 | 1518 | 1584 | 1850 | 1650 | 1650 | 2810 | 1452 | 1452 |
| 891 | 1650 | 1584 | 1851 | 1584 | 1650 | 2811 | 1452 | 1452 |
| 892 | 1650 | 1716 | 1852 | 1716 | 1716 | 2812 | 1518 | 1518 |
| 893 | 1650 | 1650 | 1853 | 1782 | 1716 | 2813 | 1584 | 1584 |
| 894 | 1782 | 1782 | 1854 | 1782 | 1848 | 2814 | 1584 | 1584 |
| 895 | 1716 | 1716 | 1855 | 1914 | 1914 | 2815 | 1650 | 1716 |
| 896 | 1716 | 1716 | 1856 | 1914 | 1914 | 2816 | 1716 | 1650 |
| 897 | 1716 | 1782 | 1857 | 1914 | 1914 | 2817 | 1650 | 1716 |
| 898 | 1782 | 1716 | 1858 | 1980 | 1980 | 2818 | 1782 | 1716 |
| 899 | 1650 | 1716 | 1859 | 1914 | 1980 | 2819 | 1650 | 1650 |
| 900 | 1716 | 1650 | 1860 | 1980 | 1980 | 2820 | 1716 | 1716 |
| 901 | 1650 | 1650 | 1861 | 2046 | 1980 | 2821 | 1716 | 1782 |
| 902 | 1584 | 1650 | 1862 | 1980 | 2046 | 2822 | 1782 | 1782 |
| 903 | 1584 | 1584 | 1863 | 2046 | 1980 | 2823 | 1848 | 1848 |
| 904 | 1584 | 1584 | 1864 | 1980 | 2046 | 2824 | 1914 | 1914 |
| 905 | 1584 | 1584 | 1865 | 2046 | 2046 | 2825 | 1914 | 1914 |
| 906 | 1584 | 1584 | 1866 | 2046 | 2046 | 2826 | 1980 | 1980 |
| 907 | 1518 | 1584 | 1867 | 2046 | 2112 | 2827 | 1980 | 1980 |
| 908 | 1584 | 1518 | 1868 | 2112 | 2046 | 2828 | 2046 | 2112 |
| 909 | 1584 | 1650 | 1869 | 2046 | 2046 | 2829 | 2178 | 2112 |
| 910 | 1584 | 1584 | 1870 | 2046 | 2112 | 2830 | 2046 | 2112 |
| 911 | 1584 | 1584 | 1871 | 2112 | 2046 | 2831 | 2046 | 2046 |
| 912 | 1584 | 1584 | 1872 | 2046 | 2112 | 2832 | 1914 | 1914 |
| 913 | 1650 | 1584 | 1873 | 2112 | 2046 | 2833 | 1914 | 1914 |
| 914 | 1518 | 1584 | 1874 | 2046 | 2112 | 2834 | 1848 | 1848 |
| 915 | 1584 | 1584 | 1875 | 2046 | 2046 | 2835 | 1782 | 1848 |
| 916 | 1518 | 1518 | 1876 | 2046 | 2046 | 2836 | 1848 | 1782 |
| 917 | 1584 | 1584 | 1877 | 1980 | 1980 | 2837 | 1716 | 1782 |
| 918 | 1518 | 1518 | 1878 | 2046 | 2046 | 2838 | 1716 | 1650 |
| 919 | 1584 | 1584 | 1879 | 1980 | 1980 | 2839 | 1518 | 1518 |
| 920 | 1518 | 1518 | 1880 | 1980 | 1980 | 2840 | 1518 | 1584 |
| 921 | 1518 | 1518 | 1881 | 1914 | 1914 | 2841 | 1584 | 1518 |
| 922 | 1518 | 1584 | 1882 | 1848 | 1914 | 2842 | 1452 | 1518 |
| 923 | 1518 | 1518 | 1883 | 1914 | 1914 | 2843 | 1452 | 1452 |
| 924 | 1518 | 1518 | 1884 | 1914 | 1914 | 2844 | 1386 | 1386 |
| 925 | 1518 | 1452 | 1885 | 1848 | 1848 | 2845 | 1386 | 1386 |
| 926 | 1452 | 1518 | 1886 | 1848 | 1848 | 2846 | 1386 | 1386 |
| 927 | 1518 | 1518 | 1887 | 1848 | 1848 | 2847 | 1386 | 1386 |
| 928 | 1452 | 1452 | 1888 | 1914 | 1914 | 2848 | 1386 | 1386 |
| 929 | 1518 | 1518 | 1889 | 1848 | 1848 | 2849 | 1386 | 1386 |
| 930 | 1452 | 1452 | 1890 | 1848 | 1848 | 2850 | 1320 | 1320 |
| 931 | 1518 | 1518 | 1891 | 1848 | 1914 | 2851 | 1320 | 1386 |
| 932 | 1452 | 1452 | 1892 | 1914 | 1914 | 2852 | 1386 | 1320 |
| 933 | 1452 | 1518 | 1893 | 1914 | 1914 | 2853 | 1320 | 1386 |
| 934 | 1518 | 1452 | 1894 | 1914 | 1914 | 2854 | 1386 | 1386 |
| 935 | 1518 | 1518 | 1895 | 1914 | 1914 | 2855 | 1386 | 1386 |
| 936 | 1518 | 1584 | 1896 | 1914 | 1980 | 2856 | 1386 | 1386 |
| 937 | 1584 | 1518 | 1897 | 1980 | 1914 | 2857 | 1452 | 1452 |
| 938 | 1584 | 1650 | 1898 | 1914 | 1980 | 2858 | 1452 | 1452 |
| 939 | 1650 | 1584 | 1899 | 2046 | 1980 | 2859 | 1518 | 1518 |

|     |      |      |      |      |      |      |      |      |
|-----|------|------|------|------|------|------|------|------|
| 940 | 1650 | 1716 | 1900 | 2046 | 2046 | 2860 | 1584 | 1584 |
| 941 | 1716 | 1650 | 1901 | 2112 | 2178 | 2861 | 1584 | 1650 |
| 942 | 1782 | 1848 | 1902 | 2178 | 2178 | 2862 | 1716 | 1650 |
| 943 | 2046 | 2046 | 1903 | 2310 | 2310 | 2863 | 1716 | 1782 |
| 944 | 2244 | 2244 | 1904 | 2376 | 2376 | 2864 | 1914 | 1914 |
| 945 | 2310 | 2310 | 1905 | 2442 | 2442 | 2865 | 2046 | 2046 |
| 946 | 2310 | 2376 | 1906 | 2376 | 2442 | 2866 | 2244 | 2244 |
| 947 | 2310 | 2310 | 1907 | 2310 | 2310 | 2867 | 2244 | 2244 |
| 948 | 2310 | 2244 | 1908 | 2310 | 2310 | 2868 | 2310 | 2310 |
| 949 | 2178 | 2244 | 1909 | 2310 | 2244 | 2869 | 2244 | 2310 |
| 950 | 2244 | 2244 | 1910 | 2178 | 2244 | 2870 | 2244 | 2178 |
| 951 | 2178 | 2178 | 1911 | 2310 | 2310 | 2871 | 2112 | 2178 |
| 952 | 2178 | 2178 | 1912 | 2178 | 2244 | 2872 | 2178 | 2112 |
| 953 | 2112 | 2178 | 1913 | 2244 | 2244 | 2873 | 2178 | 2244 |
| 954 | 2178 | 2178 | 1914 | 2310 | 2244 | 2874 | 2244 | 2178 |
| 955 | 2112 | 2112 | 1915 | 2178 | 2244 | 2875 | 2178 | 2244 |
| 956 | 2046 | 1980 | 1916 | 2178 | 2178 | 2876 | 2112 | 2178 |
| 957 | 1914 | 1980 | 1917 | 2112 | 2112 | 2877 | 2112 | 2112 |
| 958 | 1848 | 1848 | 1918 | 2046 | 2046 | 2878 | 2046 | 2046 |
| 959 | 1716 | 1716 | 1919 | 1914 | 1914 | 2879 | 1980 | 1980 |
| 960 | 1650 | 1650 | 1920 | 1848 | 1848 | 2880 | 1914 | 1914 |

Tablica P.13. Ulazne veličine za proračun razmijenjene energije za cijeli mjesec srpanj 2015.

| Datum     | Vrijeme | Mjerna točka A, Radna energija [MWh] | Mjerna točka A, Jalova energija [Mvarh] | Mjerna točka A, Napon [kV] | Mjerna točka B, Radna energija [MWh] | Mjerna točka B, Jalova energija [Mvarh] | Mjerna točka B, Napon [kV] | Cijena [EUR/MWh] |
|-----------|---------|--------------------------------------|---|----------------------------|--------------------------------------|---|----------------------------|------------------|
| 1.7.2015. | 0:15    | 39,200                               | 21,600                                  | 418,000                    | 39,200                               | 8,8                                     | 416                        | 39,97            |
|           | 0:30    | 36,400                               | 22,400                                  | 410,000                    | 36,400                               | 9,2                                     | 408                        | 39,97            |
|           | 0:45    | 35,600                               | 22,000                                  | 410,000                    | 35,600                               | 8,8                                     | 408                        | 39,97            |
|           | 1:00    | 34,000                               | 21,600                                  | 418,000                    | 33,600                               | 8,4                                     | 416                        | 39,97            |
|           | 1:15    | 42,000                               | 22,800                                  | 410,000                    | 42,000                               | 9,6                                     | 408                        | 39,97            |
|           | 1:30    | 44,800                               | 21,200                                  | 425,000                    | 44,400                               | 8,4                                     | 423                        | 39,97            |
|           | 1:45    | 43,200                               | 20,400                                  | 418,000                    | 43,200                               | 7,6                                     | 416                        | 39,97            |
|           | 2:00    | 46,400                               | 20,400                                  | 410,000                    | 46,400                               | 8                                       | 408                        | 39,97            |
|           | 2:15    | 52,800                               | 20,800                                  | 425,000                    | 52,800                               | 8,4                                     | 423                        | 39,97            |
|           | 2:30    | 54,800                               | 20,400                                  | 410,000                    | 54,400                               | 8,4                                     | 408                        | 39,97            |
|           | 2:45    | 53,600                               | 20,400                                  | 418,000                    | 53,200                               | 8                                       | 416                        | 39,97            |
|           | 3:00    | 51,600                               | 20,400                                  | 410,000                    | 51,600                               | 8                                       | 408                        | 39,97            |
|           | 3:15    | 57,600                               | 20,400                                  | 418,000                    | 57,200                               | 8,4                                     | 416                        | 39,97            |
|           | 3:30    | 57,200                               | 20,000                                  | 410,000                    | 57,200                               | 8,4                                     | 408                        | 39,97            |
|           | 3:45    | 58,800                               | 20,000                                  | 425,000                    | 58,400                               | 8                                       | 423                        | 39,97            |
|           | 4:00    | 61,600                               | 20,000                                  | 418,000                    | 61,600                               | 8,4                                     | 416                        | 39,97            |
|           | 4:15    | 60,800                               | 19,600                                  | 410,000                    | 60,400                               | 8                                       | 408                        | 39,97            |
|           | 4:30    | 62,400                               | 20,000                                  | 425,000                    | 62,000                               | 8,4                                     | 423                        | 39,97            |
|           | 4:45    | 65,600                               | 20,000                                  | 410,000                    | 65,200                               | 8,8                                     | 408                        | 39,97            |
|           | 5:00    | 73,600                               | 19,600                                  | 418,000                    | 73,200                               | 9,6                                     | 416                        | 39,97            |
|           | 5:15    | 60,800                               | 20,000                                  | 410,000                    | 60,800                               | 8                                       | 408                        | 39,97            |
|           | 5:30    | 63,600                               | 19,600                                  | 425,000                    | 63,200                               | 8                                       | 423                        | 39,97            |
|           | 5:45    | 62,800                               | 19,600                                  | 418,000                    | 62,400                               | 8                                       | 416                        | 39,97            |
|           | 6:00    | 61,200                               | 19,200                                  | 425,000                    | 61,200                               | 7,6                                     | 423                        | 39,97            |
|           | 6:15    | 79,600                               | 19,200                                  | 402,000                    | 79,200                               | 9,2                                     | 400                        | 39,97            |
|           | 6:30    | 71,600                               | 19,600                                  | 425,000                    | 70,800                               | 8,8                                     | 423                        | 39,97            |
|           | 6:45    | 69,200                               | 20,000                                  | 418,000                    | 68,800                               | 9,6                                     | 416                        | 39,97            |
|           | 7:00    | 81,600                               | 22,400                                  | 410,000                    | 81,200                               | 12,8                                    | 408                        | 39,97            |
|           | 7:15    | 88,000                               | 23,200                                  | 425,000                    | 87,600                               | 14,8                                    | 423                        | 39,97            |
|           | 7:30    | 84,800                               | 23,600                                  | 410,000                    | 84,000                               | 14,8                                    | 408                        | 39,97            |
|           | 7:45    | 79,600                               | 23,600                                  | 410,000                    | 79,200                               | 14                                      | 408                        | 39,97            |
|           | 8:00    | 88,000                               | 23,600                                  | 418,000                    | 87,600                               | 15,6                                    | 416                        | 39,97            |
|           | 8:15    | 111,600                              | 20,400                                  | 410,000                    | 110,800                              | 15,6                                    | 408                        | 39,97            |
|           | 8:30    | 113,600                              | 20,400                                  | 410,000                    | 112,400                              | 16                                      | 408                        | 39,97            |
|           | 8:45    | 110,800                              | 20,800                                  | 410,000                    | 109,600                              | 16,4                                    | 408                        | 39,97            |
|           | 9:00    | 115,600                              | 20,800                                  | 410,000                    | 114,800                              | 16,8                                    | 408                        | 39,97            |
|           | 9:15    | 108,400                              | 21,200                                  | 410,000                    | 107,600                              | 16                                      | 408                        | 39,97            |
|           | 9:30    | 99,200                               | 21,200                                  | 418,000                    | 98,400                               | 14,8                                    | 416                        | 39,97            |
|           | 9:45    | 102,000                              | 21,600                                  | 410,000                    | 101,200                              | 15,2                                    | 408                        | 39,97            |
|           | 10:00   | 104,400                              | 21,600                                  | 410,000                    | 103,600                              | 15,6                                    | 408                        | 39,97            |
|           | 10:15   | 108,800                              | 21,600                                  | 410,000                    | 107,600                              | 16,8                                    | 408                        | 39,97            |
|           | 10:30   | 108,400                              | 22,000                                  | 410,000                    | 107,600                              | 16,8                                    | 408                        | 39,97            |
|           | 10:45   | 110,800                              | 21,600                                  | 410,000                    | 109,600                              | 17,2                                    | 408                        | 39,97            |
|           | 11:00   | 114,000                              | 20,800                                  | 410,000                    | 113,200                              | 16,8                                    | 408                        | 39,97            |
|           | 11:15   | 111,200                              | 21,200                                  | 410,000                    | 110,400                              | 16,4                                    | 408                        | 39,97            |
|           | 11:30   | 110,800                              | 20,800                                  | 410,000                    | 109,600                              | 16,4                                    | 408                        | 39,97            |
|           | 11:45   | 110,400                              | 20,800                                  | 410,000                    | 109,600                              | 16                                      | 408                        | 39,97            |
|           | 12:00   | 111,600                              | 20,800                                  | 410,000                    | 110,800                              | 16,8                                    | 408                        | 39,97            |
| 12:15     | 103,600 | 20,800                               | 410,000                                 | 102,800                    | 15,2                                 | 408                                     | 39,97                      |                  |
| 12:30     | 104,400 | 20,400                               | 410,000                                 | 103,200                    | 14,4                                 | 408                                     | 39,97                      |                  |
| 12:45     | 110,000 | 20,000                               | 410,000                                 | 109,200                    | 15,2                                 | 408                                     | 39,97                      |                  |
| 13:00     | 112,800 | 19,600                               | 402,000                                 | 112,000                    | 15,6                                 | 400                                     | 39,97                      |                  |
| 13:15     | 115,600 | 19,200                               | 410,000                                 | 114,400                    | 15,2                                 | 408                                     | 39,97                      |                  |
| 13:30     | 108,000 | 19,600                               | 402,000                                 | 106,800                    | 15,2                                 | 400                                     | 39,97                      |                  |
| 13:45     | 112,800 | 20,400                               | 410,000                                 | 112,000                    | 15,6                                 | 408                                     | 39,97                      |                  |
| 14:00     | 104,800 | 20,000                               | 410,000                                 | 104,000                    | 14,8                                 | 408                                     | 39,97                      |                  |
| 14:15     | 111,600 | 20,400                               | 410,000                                 | 110,800                    | 16,4                                 | 408                                     | 39,97                      |                  |
| 14:30     | 120,400 | 20,400                               | 410,000                                 | 119,200                    | 17,2                                 | 408                                     | 39,97                      |                  |
| 14:45     | 124,800 | 20,800                               | 410,000                                 | 123,200                    | 18,4                                 | 408                                     | 39,97                      |                  |
| 15:00     | 130,400 | 20,000                               | 402,000                                 | 129,200                    | 19,6                                 | 400                                     | 39,97                      |                  |
| 15:15     | 127,200 | 21,200                               | 410,000                                 | 126,000                    | 19,6                                 | 408                                     | 39,97                      |                  |
| 15:30     | 126,000 | 22,000                               | 410,000                                 | 124,800                    | 20                                   | 408                                     | 39,97                      |                  |
| 15:45     | 128,400 | 22,000                               | 410,000                                 | 126,800                    | 21,2                                 | 408                                     | 39,97                      |                  |
| 16:00     | 120,400 | 23,200                               | 410,000                                 | 119,200                    | 20                                   | 408                                     | 39,97                      |                  |
| 16:15     | 114,800 | 24,000                               | 410,000                                 | 114,000                    | 20                                   | 408                                     | 39,97                      |                  |
| 16:30     | 118,000 | 24,000                               | 410,000                                 | 116,800                    | 20,8                                 | 408                                     | 39,97                      |                  |
| 16:45     | 124,800 | 23,200                               | 410,000                                 | 123,600                    | 21,2                                 | 408                                     | 39,97                      |                  |
| 17:00     | 121,600 | 22,800                               | 410,000                                 | 120,800                    | 20,4                                 | 408                                     | 39,97                      |                  |
| 17:15     | 118,400 | 23,200                               | 410,000                                 | 117,200                    | 19,6                                 | 408                                     | 39,97                      |                  |
| 17:30     | 121,200 | 22,800                               | 410,000                                 | 120,000                    | 20,4                                 | 408                                     | 39,97                      |                  |
| 17:45     | 126,400 | 24,000                               | 410,000                                 | 125,200                    | 21,6                                 | 408                                     | 39,97                      |                  |
| 18:00     | 120,800 | 24,400                               | 410,000                                 | 119,600                    | 21,6                                 | 408                                     | 39,97                      |                  |
| 18:15     | 124,800 | 24,400                               | 418,000                                 | 123,600                    | 22,4                                 | 416                                     | 39,97                      |                  |

|           |         |         |         |         |         |      |       |       |
|-----------|---------|---------|---------|---------|---------|------|-------|-------|
|           | 18:30   | 131,600 | 24,800  | 410,000 | 130,400 | 23,6 | 408   | 39,97 |
|           | 18:45   | 131,600 | 24,400  | 410,000 | 130,400 | 23,6 | 408   | 39,97 |
|           | 19:00   | 124,400 | 24,800  | 410,000 | 123,200 | 22,8 | 408   | 39,97 |
|           | 19:15   | 119,200 | 24,800  | 410,000 | 118,000 | 21,6 | 408   | 39,97 |
|           | 19:30   | 121,200 | 25,600  | 410,000 | 120,000 | 22,8 | 408   | 39,97 |
|           | 19:45   | 116,400 | 25,600  | 418,000 | 115,200 | 21,6 | 416   | 39,97 |
|           | 20:00   | 108,400 | 24,800  | 410,000 | 108,000 | 20   | 408   | 39,97 |
|           | 20:15   | 78,000  | 22,000  | 410,000 | 77,600  | 12,4 | 408   | 39,97 |
|           | 20:30   | 70,400  | 22,400  | 410,000 | 69,600  | 12   | 408   | 39,97 |
|           | 20:45   | 73,200  | 24,400  | 425,000 | 72,800  | 14,4 | 423   | 39,97 |
|           | 21:00   | 65,600  | 24,000  | 410,000 | 65,600  | 12,8 | 408   | 39,97 |
|           | 21:15   | 64,800  | 24,000  | 418,000 | 64,400  | 13,2 | 416   | 39,97 |
|           | 21:30   | 68,000  | 24,000  | 410,000 | 67,600  | 13,6 | 408   | 39,97 |
|           | 21:45   | 71,200  | 26,800  | 410,000 | 70,800  | 16,8 | 408   | 39,97 |
|           | 22:00   | 63,600  | 27,200  | 410,000 | 63,600  | 16,4 | 408   | 39,97 |
|           | 22:15   | 56,000  | 26,800  | 418,000 | 55,600  | 14,8 | 416   | 39,97 |
|           | 22:30   | 58,000  | 26,400  | 410,000 | 57,600  | 15,2 | 408   | 39,97 |
|           | 22:45   | 60,000  | 26,400  | 410,000 | 59,600  | 15,6 | 408   | 39,97 |
|           | 23:00   | 53,600  | 26,000  | 425,000 | 53,600  | 14   | 423   | 39,97 |
|           | 23:15   | 45,200  | 25,600  | 410,000 | 44,800  | 12,8 | 408   | 39,97 |
|           | 23:30   | 43,200  | 24,800  | 410,000 | 43,200  | 12,4 | 408   | 39,97 |
|           | 23:45   | 48,800  | 24,800  | 418,000 | 48,800  | 12,8 | 416   | 39,97 |
|           | 0:00    | 46,800  | 23,200  | 410,000 | 46,400  | 10,4 | 408   | 39,97 |
| 2.7.2015. | 0:15    | 60,800  | 23,600  | 418,000 | 60,800  | 12,4 | 416   | 39,33 |
|           | 0:30    | 55,200  | 22,800  | 410,000 | 54,400  | 10,8 | 408   | 39,33 |
|           | 0:45    | 55,200  | 22,400  | 425,000 | 55,600  | 10,4 | 423   | 39,33 |
|           | 1:00    | 50,800  | 21,200  | 410,000 | 50,000  | 9,2  | 408   | 39,33 |
|           | 1:15    | 62,000  | 22,000  | 410,000 | 62,000  | 10,4 | 408   | 39,33 |
|           | 1:30    | 62,000  | 22,000  | 418,000 | 62,000  | 10,4 | 416   | 39,33 |
|           | 1:45    | 63,200  | 21,600  | 410,000 | 62,800  | 10,8 | 408   | 39,33 |
|           | 2:00    | 55,600  | 22,000  | 425,000 | 55,200  | 10   | 423   | 39,33 |
|           | 2:15    | 56,800  | 22,000  | 418,000 | 56,400  | 10   | 416   | 39,33 |
|           | 2:30    | 51,600  | 21,200  | 410,000 | 51,600  | 8,8  | 408   | 39,33 |
|           | 2:45    | 58,400  | 21,200  | 418,000 | 58,400  | 9,6  | 416   | 39,33 |
|           | 3:00    | 58,400  | 21,200  | 410,000 | 58,000  | 8,8  | 408   | 39,33 |
|           | 3:15    | 66,400  | 20,800  | 425,000 | 66,000  | 10   | 423   | 39,33 |
|           | 3:30    | 64,000  | 21,200  | 410,000 | 64,000  | 10   | 408   | 39,33 |
|           | 3:45    | 63,200  | 20,800  | 418,000 | 62,800  | 9,2  | 416   | 39,33 |
|           | 4:00    | 60,000  | 21,200  | 425,000 | 59,600  | 9,6  | 423   | 39,33 |
|           | 4:15    | 64,400  | 21,200  | 410,000 | 64,000  | 10   | 408   | 39,33 |
|           | 4:30    | 65,600  | 21,200  | 418,000 | 65,200  | 10   | 416   | 39,33 |
|           | 4:45    | 71,200  | 20,800  | 410,000 | 70,800  | 10   | 408   | 39,33 |
|           | 5:00    | 73,200  | 20,800  | 425,000 | 72,800  | 10,8 | 423   | 39,33 |
|           | 5:15    | 67,200  | 22,400  | 418,000 | 67,200  | 10,8 | 416   | 39,33 |
|           | 5:30    | 74,400  | 22,400  | 410,000 | 74,000  | 12,4 | 408   | 39,33 |
|           | 5:45    | 72,800  | 22,400  | 418,000 | 72,400  | 12   | 416   | 39,33 |
|           | 6:00    | 67,200  | 22,800  | 425,000 | 66,400  | 11,2 | 423   | 39,33 |
|           | 6:15    | 88,400  | 22,000  | 410,000 | 88,000  | 13,6 | 408   | 39,33 |
|           | 6:30    | 84,400  | 22,400  | 418,000 | 84,400  | 13,6 | 416   | 39,33 |
|           | 6:45    | 81,600  | 22,800  | 425,000 | 80,800  | 13,2 | 423   | 39,33 |
|           | 7:00    | 79,200  | 22,800  | 410,000 | 78,400  | 13,2 | 408   | 39,33 |
|           | 7:15    | 79,200  | 23,600  | 418,000 | 79,200  | 14   | 416   | 39,33 |
|           | 7:30    | 83,600  | 24,000  | 410,000 | 82,800  | 15,2 | 408   | 39,33 |
|           | 7:45    | 82,400  | 24,000  | 410,000 | 82,000  | 14,8 | 408   | 39,33 |
|           | 8:00    | 81,200  | 23,600  | 425,000 | 80,800  | 14,4 | 423   | 39,33 |
|           | 8:15    | 102,000 | 24,000  | 402,000 | 100,800 | 17,6 | 400   | 39,33 |
|           | 8:30    | 98,800  | 19,600  | 410,000 | 98,400  | 13,2 | 408   | 39,33 |
|           | 8:45    | 98,800  | 20,800  | 410,000 | 98,000  | 14   | 408   | 39,33 |
|           | 9:00    | 96,800  | 20,000  | 410,000 | 96,000  | 13,2 | 408   | 39,33 |
|           | 9:15    | 97,200  | 18,800  | 410,000 | 96,800  | 12   | 408   | 39,33 |
|           | 9:30    | 97,200  | 19,200  | 410,000 | 96,400  | 12,4 | 408   | 39,33 |
|           | 9:45    | 94,800  | 19,200  | 410,000 | 94,000  | 12,4 | 408   | 39,33 |
|           | 10:00   | 96,400  | 20,000  | 410,000 | 95,600  | 13,2 | 408   | 39,33 |
|           | 10:15   | 98,000  | 20,400  | 410,000 | 97,200  | 14   | 408   | 39,33 |
|           | 10:30   | 98,400  | 20,400  | 410,000 | 97,600  | 13,6 | 408   | 39,33 |
| 10:45     | 99,200  | 20,000  | 410,000 | 98,400  | 13,6    | 408  | 39,33 |       |
| 11:00     | 108,000 | 20,000  | 410,000 | 107,200 | 15,2    | 408  | 39,33 |       |
| 11:15     | 112,400 | 21,600  | 410,000 | 111,200 | 17,2    | 408  | 39,33 |       |
| 11:30     | 108,400 | 21,200  | 410,000 | 107,600 | 16,4    | 408  | 39,33 |       |
| 11:45     | 108,800 | 21,600  | 410,000 | 108,000 | 16,8    | 408  | 39,33 |       |
| 12:00     | 109,200 | 22,000  | 394,000 | 108,400 | 17,2    | 392  | 39,33 |       |
| 12:15     | 104,000 | 22,000  | 410,000 | 102,800 | 16,4    | 408  | 39,33 |       |
| 12:30     | 100,800 | 22,400  | 410,000 | 100,000 | 16,4    | 408  | 39,33 |       |
| 12:45     | 99,600  | 22,800  | 410,000 | 99,200  | 16,8    | 408  | 39,33 |       |
| 13:00     | 98,000  | 23,600  | 410,000 | 97,200  | 16,8    | 408  | 39,33 |       |
| 13:15     | 110,400 | 23,200  | 410,000 | 109,200 | 18,8    | 408  | 39,33 |       |
| 13:30     | 103,200 | 23,200  | 410,000 | 102,000 | 17,2    | 408  | 39,33 |       |
| 13:45     | 107,600 | 23,600  | 410,000 | 107,200 | 18,4    | 408  | 39,33 |       |
| 14:00     | 103,600 | 23,600  | 410,000 | 102,800 | 18,4    | 408  | 39,33 |       |
| 14:15     | 110,400 | 23,600  | 402,000 | 109,200 | 18,8    | 400  | 39,33 |       |

|           |         |         |         |         |         |      |       |       |
|-----------|---------|---------|---------|---------|---------|------|-------|-------|
|           | 14:30   | 111,200 | 30,400  | 425,000 | 110,000 | 26   | 423   | 39,33 |
|           | 14:45   | 112,800 | 30,000  | 410,000 | 112,000 | 25,6 | 408   | 39,33 |
|           | 15:00   | 112,000 | 30,400  | 410,000 | 110,800 | 26,4 | 408   | 39,33 |
|           | 15:15   | 130,800 | 30,800  | 410,000 | 130,000 | 30   | 408   | 39,33 |
|           | 15:30   | 113,200 | 31,600  | 418,000 | 111,600 | 27,6 | 416   | 39,33 |
|           | 15:45   | 122,400 | 31,600  | 410,000 | 121,600 | 29,6 | 408   | 39,33 |
|           | 16:00   | 168,400 | 30,800  | 410,000 | 166,000 | 38,8 | 408   | 39,33 |
|           | 16:15   | 178,000 | 30,000  | 410,000 | 175,600 | 40,4 | 408   | 39,33 |
|           | 16:30   | 173,600 | 30,800  | 425,000 | 171,200 | 40   | 423   | 39,33 |
|           | 16:45   | 164,000 | 32,000  | 402,000 | 162,000 | 38,8 | 400   | 39,33 |
|           | 17:00   | 164,800 | 32,400  | 410,000 | 162,400 | 39,2 | 408   | 39,33 |
|           | 17:15   | 154,400 | 32,000  | 410,000 | 152,400 | 36,8 | 408   | 39,33 |
|           | 17:30   | 170,000 | 30,800  | 410,000 | 168,000 | 38,8 | 408   | 39,33 |
|           | 17:45   | 168,800 | 31,200  | 425,000 | 166,400 | 39,6 | 423   | 39,33 |
|           | 18:00   | 165,200 | 32,000  | 410,000 | 162,800 | 38,8 | 408   | 39,33 |
|           | 18:15   | 163,600 | 31,600  | 410,000 | 162,000 | 38   | 408   | 39,33 |
|           | 18:30   | 170,000 | 30,400  | 418,000 | 167,600 | 38,8 | 416   | 39,33 |
|           | 18:45   | 142,000 | 30,800  | 410,000 | 140,400 | 32   | 408   | 39,33 |
|           | 19:00   | 116,000 | 31,200  | 410,000 | 115,200 | 27,6 | 408   | 39,33 |
|           | 19:15   | 118,400 | 30,400  | 418,000 | 117,200 | 27,2 | 416   | 39,33 |
|           | 19:30   | 117,600 | 30,800  | 410,000 | 116,400 | 27,2 | 408   | 39,33 |
|           | 19:45   | 115,600 | 31,200  | 425,000 | 114,800 | 26,8 | 423   | 39,33 |
|           | 20:00   | 113,600 | 30,800  | 410,000 | 112,800 | 26,8 | 408   | 39,33 |
|           | 20:15   | 107,600 | 30,800  | 410,000 | 106,400 | 26   | 408   | 39,33 |
|           | 20:30   | 88,800  | 31,200  | 418,000 | 88,000  | 22,8 | 416   | 39,33 |
|           | 20:45   | 98,000  | 30,800  | 410,000 | 97,600  | 24,4 | 408   | 39,33 |
|           | 21:00   | 84,800  | 30,400  | 425,000 | 84,000  | 22   | 423   | 39,33 |
|           | 21:15   | 86,800  | 30,400  | 410,000 | 86,400  | 22   | 408   | 39,33 |
|           | 21:30   | 81,600  | 30,000  | 418,000 | 81,200  | 20,8 | 416   | 39,33 |
|           | 21:45   | 86,400  | 30,400  | 410,000 | 86,000  | 22,4 | 408   | 39,33 |
|           | 22:00   | 86,400  | 30,800  | 410,000 | 85,600  | 22,4 | 408   | 39,33 |
|           | 22:15   | 70,400  | 31,200  | 418,000 | 70,400  | 21,2 | 416   | 39,33 |
|           | 22:30   | 80,000  | 32,000  | 410,000 | 79,200  | 23,2 | 408   | 39,33 |
|           | 22:45   | 81,600  | 32,000  | 425,000 | 81,200  | 23,2 | 423   | 39,33 |
|           | 23:00   | 80,400  | 30,800  | 410,000 | 80,000  | 22   | 408   | 39,33 |
|           | 23:15   | 70,000  | 30,400  | 410,000 | 69,600  | 20   | 408   | 39,33 |
|           | 23:30   | 67,200  | 29,600  | 418,000 | 66,800  | 19,2 | 416   | 39,33 |
|           | 23:45   | 72,400  | 29,600  | 410,000 | 72,000  | 19,6 | 408   | 39,33 |
|           | 0:00    | 69,200  | 29,600  | 425,000 | 68,800  | 19,2 | 423   | 39,33 |
| 3.7.2015. | 0:15    | 65,600  | 28,000  | 402,000 | 65,200  | 17,2 | 400   | 46,33 |
|           | 0:30    | 60,000  | 28,400  | 425,000 | 60,000  | 16,8 | 423   | 46,33 |
|           | 0:45    | 64,000  | 27,600  | 418,000 | 63,600  | 16,4 | 416   | 46,33 |
|           | 1:00    | 59,600  | 27,200  | 410,000 | 59,200  | 16   | 408   | 46,33 |
|           | 1:15    | 70,400  | 27,600  | 425,000 | 70,000  | 16,8 | 423   | 46,33 |
|           | 1:30    | 67,200  | 27,600  | 418,000 | 66,800  | 17,2 | 416   | 46,33 |
|           | 1:45    | 65,600  | 28,400  | 410,000 | 65,600  | 17,6 | 408   | 46,33 |
|           | 2:00    | 58,800  | 27,600  | 425,000 | 58,000  | 16   | 423   | 46,33 |
|           | 2:15    | 64,000  | 26,000  | 418,000 | 64,000  | 14,8 | 416   | 46,33 |
|           | 2:30    | 62,800  | 26,000  | 410,000 | 62,400  | 14,4 | 408   | 46,33 |
|           | 2:45    | 63,600  | 25,600  | 425,000 | 63,600  | 14,4 | 423   | 46,33 |
|           | 3:00    | 65,600  | 26,000  | 418,000 | 65,200  | 15,2 | 416   | 46,33 |
|           | 3:15    | 76,000  | 26,000  | 410,000 | 75,600  | 15,6 | 408   | 46,33 |
|           | 3:30    | 68,800  | 25,600  | 418,000 | 68,400  | 14,8 | 416   | 46,33 |
|           | 3:45    | 68,000  | 26,000  | 425,000 | 67,600  | 15,2 | 423   | 46,33 |
|           | 4:00    | 68,800  | 25,600  | 410,000 | 68,800  | 15,2 | 408   | 46,33 |
|           | 4:15    | 79,600  | 25,600  | 418,000 | 78,800  | 16   | 416   | 46,33 |
|           | 4:30    | 80,400  | 25,600  | 425,000 | 80,000  | 16   | 423   | 46,33 |
|           | 4:45    | 82,400  | 25,600  | 410,000 | 82,000  | 16,4 | 408   | 46,33 |
|           | 5:00    | 88,800  | 25,600  | 418,000 | 88,000  | 17,2 | 416   | 46,33 |
|           | 5:15    | 81,200  | 25,200  | 410,000 | 80,800  | 15,6 | 408   | 46,33 |
|           | 5:30    | 78,400  | 25,600  | 425,000 | 77,600  | 16   | 423   | 46,33 |
|           | 5:45    | 79,200  | 25,600  | 418,000 | 79,200  | 15,6 | 416   | 46,33 |
|           | 6:00    | 86,000  | 24,400  | 418,000 | 85,600  | 15,6 | 416   | 46,33 |
|           | 6:15    | 82,800  | 25,200  | 410,000 | 82,000  | 16   | 408   | 46,33 |
|           | 6:30    | 90,000  | 26,000  | 425,000 | 89,200  | 17,2 | 423   | 46,33 |
|           | 6:45    | 94,400  | 25,200  | 418,000 | 94,000  | 17,6 | 416   | 46,33 |
|           | 7:00    | 117,600 | 26,400  | 425,000 | 116,400 | 22,4 | 423   | 46,33 |
|           | 7:15    | 133,600 | 26,800  | 410,000 | 132,400 | 26   | 408   | 46,33 |
|           | 7:30    | 138,400 | 27,600  | 410,000 | 137,200 | 28   | 408   | 46,33 |
|           | 7:45    | 132,000 | 29,200  | 418,000 | 130,800 | 28,4 | 416   | 46,33 |
|           | 8:00    | 127,600 | 30,000  | 410,000 | 126,000 | 28,4 | 408   | 46,33 |
|           | 8:15    | 131,600 | 30,000  | 425,000 | 130,400 | 29,2 | 423   | 46,33 |
|           | 8:30    | 136,800 | 28,000  | 410,000 | 135,600 | 28,4 | 408   | 46,33 |
|           | 8:45    | 143,200 | 27,200  | 402,000 | 141,200 | 28,4 | 400   | 46,33 |
|           | 9:00    | 143,200 | 26,400  | 410,000 | 141,600 | 28,4 | 408   | 46,33 |
|           | 9:15    | 132,400 | 27,600  | 410,000 | 131,200 | 26,8 | 408   | 46,33 |
|           | 9:30    | 132,000 | 27,600  | 425,000 | 130,800 | 27,2 | 423   | 46,33 |
|           | 9:45    | 127,600 | 28,000  | 410,000 | 126,400 | 26,4 | 408   | 46,33 |
|           | 10:00   | 125,600 | 28,000  | 410,000 | 124,400 | 26   | 408   | 46,33 |
| 10:15     | 140,800 | 28,000  | 410,000 | 138,800 | 29,6    | 408  | 46,33 |       |

|           |       |         |        |         |         |      |     |       |
|-----------|-------|---------|--------|---------|---------|------|-----|-------|
|           | 10:30 | 134,400 | 29,600 | 410,000 | 133,600 | 29,6 | 408 | 46,33 |
|           | 10:45 | 133,200 | 29,200 | 418,000 | 131,600 | 28,8 | 416 | 46,33 |
|           | 11:00 | 139,200 | 27,600 | 410,000 | 137,600 | 29,2 | 408 | 46,33 |
|           | 11:15 | 142,800 | 28,400 | 410,000 | 141,200 | 30   | 408 | 46,33 |
|           | 11:30 | 145,600 | 29,600 | 410,000 | 144,000 | 32   | 408 | 46,33 |
|           | 11:45 | 146,000 | 29,200 | 410,000 | 144,800 | 32,4 | 408 | 46,33 |
|           | 12:00 | 147,600 | 31,600 | 410,000 | 145,600 | 34,4 | 408 | 46,33 |
|           | 12:15 | 138,800 | 32,400 | 410,000 | 137,200 | 33,6 | 408 | 46,33 |
|           | 12:30 | 141,600 | 32,400 | 410,000 | 140,000 | 34   | 408 | 46,33 |
|           | 12:45 | 151,600 | 30,800 | 410,000 | 150,000 | 34,8 | 408 | 46,33 |
|           | 13:00 | 142,400 | 30,800 | 402,000 | 140,400 | 32,8 | 400 | 46,33 |
|           | 13:15 | 158,000 | 30,800 | 425,000 | 156,000 | 36,4 | 423 | 46,33 |
|           | 13:30 | 152,800 | 31,600 | 410,000 | 151,200 | 35,6 | 408 | 46,33 |
|           | 13:45 | 156,800 | 31,200 | 410,000 | 154,800 | 36,8 | 408 | 46,33 |
|           | 14:00 | 154,400 | 32,000 | 410,000 | 152,400 | 36,4 | 408 | 46,33 |
|           | 14:15 | 144,400 | 31,600 | 410,000 | 143,200 | 34   | 408 | 46,33 |
|           | 14:30 | 142,000 | 31,200 | 410,000 | 140,400 | 32,4 | 408 | 46,33 |
|           | 14:45 | 136,000 | 31,200 | 418,000 | 134,400 | 31,6 | 416 | 46,33 |
|           | 15:00 | 143,600 | 31,200 | 410,000 | 142,000 | 33,2 | 408 | 46,33 |
|           | 15:15 | 136,000 | 31,600 | 410,000 | 134,800 | 32,4 | 408 | 46,33 |
|           | 15:30 | 138,400 | 31,600 | 410,000 | 136,800 | 32   | 408 | 46,33 |
|           | 15:45 | 136,000 | 31,600 | 410,000 | 134,400 | 32,4 | 408 | 46,33 |
|           | 16:00 | 135,600 | 32,000 | 418,000 | 134,400 | 32,4 | 416 | 46,33 |
|           | 16:15 | 122,400 | 34,400 | 410,000 | 121,200 | 32   | 408 | 46,33 |
|           | 16:30 | 128,400 | 34,800 | 410,000 | 127,200 | 33,6 | 408 | 46,33 |
|           | 16:45 | 127,200 | 34,800 | 425,000 | 126,000 | 33,2 | 423 | 46,33 |
|           | 17:00 | 128,800 | 34,800 | 410,000 | 127,200 | 33,6 | 408 | 46,33 |
|           | 17:15 | 129,200 | 34,400 | 418,000 | 128,000 | 33,2 | 416 | 46,33 |
|           | 17:30 | 127,600 | 34,800 | 410,000 | 126,400 | 33,6 | 408 | 46,33 |
|           | 17:45 | 125,600 | 34,800 | 410,000 | 124,400 | 32,8 | 408 | 46,33 |
|           | 18:00 | 130,000 | 34,400 | 418,000 | 128,800 | 33,6 | 416 | 46,33 |
|           | 18:15 | 136,000 | 34,800 | 410,000 | 134,800 | 35,2 | 408 | 46,33 |
|           | 18:30 | 146,000 | 34,800 | 425,000 | 144,000 | 36,8 | 423 | 46,33 |
|           | 18:45 | 148,800 | 34,000 | 410,000 | 147,200 | 37,6 | 408 | 46,33 |
|           | 19:00 | 153,200 | 34,000 | 410,000 | 151,600 | 37,6 | 408 | 46,33 |
|           | 19:15 | 150,400 | 34,000 | 418,000 | 148,400 | 37,6 | 416 | 46,33 |
|           | 19:30 | 115,600 | 34,000 | 410,000 | 114,400 | 30   | 408 | 46,33 |
|           | 19:45 | 114,800 | 33,600 | 425,000 | 114,000 | 29,6 | 423 | 46,33 |
|           | 20:00 | 113,200 | 33,600 | 410,000 | 112,000 | 29,6 | 408 | 46,33 |
|           | 20:15 | 108,400 | 34,400 | 418,000 | 107,600 | 29,2 | 416 | 46,33 |
|           | 20:30 | 102,000 | 34,000 | 418,000 | 101,200 | 27,6 | 416 | 46,33 |
|           | 20:45 | 103,200 | 33,600 | 410,000 | 102,800 | 28,4 | 408 | 46,33 |
|           | 21:00 | 103,200 | 34,400 | 425,000 | 102,000 | 28,4 | 423 | 46,33 |
|           | 21:15 | 96,400  | 33,200 | 410,000 | 95,600  | 26,4 | 408 | 46,33 |
|           | 21:30 | 101,200 | 34,000 | 410,000 | 100,800 | 28   | 408 | 46,33 |
|           | 21:45 | 105,200 | 35,600 | 418,000 | 104,000 | 30,8 | 416 | 46,33 |
|           | 22:00 | 107,200 | 36,000 | 410,000 | 106,400 | 30,8 | 408 | 46,33 |
|           | 22:15 | 90,800  | 36,000 | 425,000 | 90,400  | 28,8 | 423 | 46,33 |
|           | 22:30 | 89,600  | 36,800 | 410,000 | 88,800  | 29,6 | 408 | 46,33 |
|           | 22:45 | 96,800  | 36,800 | 410,000 | 96,000  | 30,4 | 408 | 46,33 |
|           | 23:00 | 93,600  | 37,200 | 418,000 | 93,200  | 30   | 416 | 46,33 |
|           | 23:15 | 74,400  | 36,400 | 410,000 | 73,600  | 27,2 | 408 | 46,33 |
|           | 23:30 | 65,600  | 35,600 | 418,000 | 65,600  | 25,2 | 416 | 46,33 |
|           | 23:45 | 70,400  | 34,400 | 410,000 | 70,000  | 24,4 | 408 | 46,33 |
|           | 0:00  | 69,600  | 33,200 | 425,000 | 69,200  | 23,2 | 423 | 46,33 |
| 4.7.2015. | 0:15  | 68,400  | 33,600 | 410,000 | 68,400  | 23,6 | 408 | 39,22 |
|           | 0:30  | 74,400  | 34,000 | 410,000 | 73,600  | 24,4 | 408 | 39,22 |
|           | 0:45  | 60,000  | 34,400 | 418,000 | 60,000  | 23,6 | 416 | 39,22 |
|           | 1:00  | 58,800  | 34,800 | 410,000 | 58,400  | 23,6 | 408 | 39,22 |
|           | 1:15  | 56,000  | 34,400 | 425,000 | 55,600  | 23,2 | 423 | 39,22 |
|           | 1:30  | 62,800  | 34,000 | 402,000 | 62,400  | 23,2 | 400 | 39,22 |
|           | 1:45  | 70,800  | 34,400 | 425,000 | 70,400  | 24,4 | 423 | 39,22 |
|           | 2:00  | 68,400  | 34,000 | 418,000 | 68,000  | 23,6 | 416 | 39,22 |
|           | 2:15  | 65,200  | 34,800 | 410,000 | 64,800  | 24,4 | 408 | 39,22 |
|           | 2:30  | 57,200  | 35,600 | 425,000 | 57,200  | 24   | 423 | 39,22 |
|           | 2:45  | 60,400  | 34,400 | 418,000 | 60,400  | 23,2 | 416 | 39,22 |
|           | 3:00  | 65,200  | 34,400 | 410,000 | 64,400  | 24   | 408 | 39,22 |
|           | 3:15  | 74,800  | 34,000 | 425,000 | 74,400  | 24,4 | 423 | 39,22 |
|           | 3:30  | 67,600  | 34,000 | 418,000 | 67,200  | 23,2 | 416 | 39,22 |
|           | 3:45  | 68,400  | 33,600 | 425,000 | 68,000  | 23,2 | 423 | 39,22 |
|           | 4:00  | 66,800  | 33,200 | 410,000 | 66,800  | 22,4 | 408 | 39,22 |
|           | 4:15  | 74,800  | 32,400 | 418,000 | 74,400  | 22,4 | 416 | 39,22 |
|           | 4:30  | 71,200  | 32,000 | 418,000 | 70,800  | 22   | 416 | 39,22 |
|           | 4:45  | 70,000  | 32,800 | 425,000 | 69,600  | 22   | 423 | 39,22 |
|           | 5:00  | 78,800  | 32,400 | 410,000 | 78,000  | 23,2 | 408 | 39,22 |
|           | 5:15  | 94,000  | 30,800 | 418,000 | 93,600  | 23,2 | 416 | 39,22 |
|           | 5:30  | 78,800  | 30,400 | 425,000 | 78,400  | 20,4 | 423 | 39,22 |
|           | 5:45  | 76,000  | 30,800 | 418,000 | 75,600  | 20,8 | 416 | 39,22 |
|           | 6:00  | 77,600  | 31,200 | 425,000 | 76,800  | 21,6 | 423 | 39,22 |
|           | 6:15  | 89,200  | 29,600 | 418,000 | 88,800  | 21,2 | 416 | 39,22 |

|           |       |         |        |         |         |      |     |       |
|-----------|-------|---------|--------|---------|---------|------|-----|-------|
|           | 6:30  | 82,400  | 29,600 | 425,000 | 81,600  | 20,4 | 423 | 39,22 |
|           | 6:45  | 100,000 | 30,400 | 418,000 | 99,200  | 23,6 | 416 | 39,22 |
|           | 7:00  | 109,600 | 30,400 | 410,000 | 108,800 | 25,2 | 408 | 39,22 |
|           | 7:15  | 96,800  | 30,400 | 425,000 | 96,000  | 23,2 | 423 | 39,22 |
|           | 7:30  | 87,200  | 31,600 | 418,000 | 86,800  | 23,2 | 416 | 39,22 |
|           | 7:45  | 84,400  | 32,000 | 410,000 | 83,600  | 23,2 | 408 | 39,22 |
|           | 8:00  | 93,600  | 29,200 | 418,000 | 92,800  | 22   | 416 | 39,22 |
|           | 8:15  | 93,600  | 29,200 | 425,000 | 93,600  | 21,6 | 423 | 39,22 |
|           | 8:30  | 95,200  | 28,800 | 410,000 | 94,400  | 21,6 | 408 | 39,22 |
|           | 8:45  | 86,800  | 30,000 | 418,000 | 86,000  | 21,6 | 416 | 39,22 |
|           | 9:00  | 80,000  | 30,000 | 410,000 | 79,200  | 20,8 | 408 | 39,22 |
|           | 9:15  | 87,200  | 29,600 | 425,000 | 86,800  | 21,2 | 423 | 39,22 |
|           | 9:30  | 89,200  | 29,200 | 410,000 | 88,400  | 21,2 | 408 | 39,22 |
|           | 9:45  | 84,000  | 29,600 | 418,000 | 83,600  | 20,8 | 416 | 39,22 |
|           | 10:00 | 86,000  | 29,600 | 410,000 | 85,200  | 21,2 | 408 | 39,22 |
|           | 10:15 | 86,400  | 30,000 | 425,000 | 86,000  | 21,6 | 423 | 39,22 |
|           | 10:30 | 86,800  | 30,400 | 402,000 | 86,000  | 22,4 | 400 | 39,22 |
|           | 10:45 | 84,800  | 30,400 | 425,000 | 84,400  | 21,6 | 423 | 39,22 |
|           | 11:00 | 82,800  | 30,000 | 410,000 | 82,400  | 21,2 | 408 | 39,22 |
|           | 11:15 | 87,600  | 29,600 | 418,000 | 86,800  | 21,6 | 416 | 39,22 |
|           | 11:30 | 84,000  | 30,400 | 410,000 | 83,600  | 21,6 | 408 | 39,22 |
|           | 11:45 | 89,600  | 30,000 | 410,000 | 88,800  | 22,4 | 408 | 39,22 |
|           | 12:00 | 86,800  | 30,000 | 425,000 | 86,400  | 21,6 | 423 | 39,22 |
|           | 12:15 | 78,400  | 29,200 | 410,000 | 77,600  | 20   | 408 | 39,22 |
|           | 12:30 | 74,000  | 30,400 | 418,000 | 74,000  | 20,4 | 416 | 39,22 |
|           | 12:45 | 70,400  | 28,800 | 410,000 | 70,000  | 18   | 408 | 39,22 |
|           | 13:00 | 72,000  | 28,400 | 418,000 | 71,600  | 18,8 | 416 | 39,22 |
|           | 13:15 | 78,800  | 29,600 | 410,000 | 78,000  | 20   | 408 | 39,22 |
|           | 13:30 | 81,200  | 29,200 | 425,000 | 80,800  | 20,4 | 423 | 39,22 |
|           | 13:45 | 85,600  | 30,000 | 410,000 | 85,200  | 21,2 | 408 | 39,22 |
|           | 14:00 | 84,000  | 29,600 | 418,000 | 83,200  | 20,8 | 416 | 39,22 |
|           | 14:15 | 80,400  | 29,600 | 410,000 | 80,000  | 20,4 | 408 | 39,22 |
|           | 14:30 | 71,600  | 29,200 | 425,000 | 71,200  | 19,2 | 423 | 39,22 |
|           | 14:45 | 74,800  | 30,000 | 418,000 | 74,400  | 19,6 | 416 | 39,22 |
|           | 15:00 | 76,000  | 29,600 | 410,000 | 75,200  | 20   | 408 | 39,22 |
|           | 15:15 | 73,200  | 29,600 | 425,000 | 73,200  | 19,6 | 423 | 39,22 |
|           | 15:30 | 77,600  | 29,200 | 410,000 | 76,800  | 19,6 | 408 | 39,22 |
|           | 15:45 | 77,600  | 30,000 | 418,000 | 77,200  | 20,4 | 416 | 39,22 |
|           | 16:00 | 76,000  | 29,600 | 410,000 | 75,600  | 20   | 408 | 39,22 |
|           | 16:15 | 75,600  | 30,000 | 418,000 | 75,600  | 20   | 416 | 39,22 |
|           | 16:30 | 74,800  | 29,600 | 425,000 | 74,400  | 20   | 423 | 39,22 |
|           | 16:45 | 76,400  | 30,000 | 410,000 | 75,600  | 20   | 408 | 39,22 |
|           | 17:00 | 75,200  | 30,400 | 418,000 | 74,800  | 20,4 | 416 | 39,22 |
|           | 17:15 | 67,200  | 29,600 | 425,000 | 66,800  | 18,4 | 423 | 39,22 |
|           | 17:30 | 73,200  | 29,200 | 410,000 | 72,800  | 19,2 | 408 | 39,22 |
|           | 17:45 | 74,000  | 29,200 | 418,000 | 73,600  | 19,2 | 416 | 39,22 |
|           | 18:00 | 76,400  | 29,600 | 425,000 | 75,600  | 19,6 | 423 | 39,22 |
|           | 18:15 | 72,000  | 29,200 | 410,000 | 72,000  | 19,2 | 408 | 39,22 |
|           | 18:30 | 77,200  | 28,800 | 418,000 | 76,800  | 19,2 | 416 | 39,22 |
|           | 18:45 | 82,400  | 28,800 | 418,000 | 81,600  | 19,6 | 416 | 39,22 |
|           | 19:00 | 80,400  | 29,200 | 410,000 | 80,000  | 19,6 | 408 | 39,22 |
|           | 19:15 | 75,200  | 29,200 | 425,000 | 74,800  | 19,2 | 423 | 39,22 |
|           | 19:30 | 82,000  | 29,200 | 410,000 | 81,600  | 20,4 | 408 | 39,22 |
|           | 19:45 | 58,000  | 27,600 | 418,000 | 57,600  | 15,6 | 416 | 39,22 |
|           | 20:00 | 57,600  | 27,600 | 425,000 | 57,600  | 15,6 | 423 | 39,22 |
|           | 20:15 | 58,400  | 27,200 | 418,000 | 58,400  | 15,6 | 416 | 39,22 |
|           | 20:30 | 54,400  | 27,200 | 410,000 | 54,000  | 15,2 | 408 | 39,22 |
|           | 20:45 | 57,600  | 27,200 | 425,000 | 57,200  | 15,6 | 423 | 39,22 |
|           | 21:00 | 52,400  | 27,200 | 418,000 | 52,000  | 14,8 | 416 | 39,22 |
|           | 21:15 | 54,800  | 26,400 | 410,000 | 54,800  | 14,4 | 408 | 39,22 |
|           | 21:30 | 67,200  | 27,200 | 418,000 | 66,800  | 16,8 | 416 | 39,22 |
|           | 21:45 | 64,000  | 28,400 | 410,000 | 63,600  | 17,2 | 408 | 39,22 |
|           | 22:00 | 61,600  | 30,400 | 425,000 | 61,600  | 19,2 | 423 | 39,22 |
|           | 22:15 | 56,400  | 30,000 | 410,000 | 56,000  | 18,8 | 408 | 39,22 |
|           | 22:30 | 63,600  | 30,800 | 418,000 | 63,200  | 19,6 | 416 | 39,22 |
|           | 22:45 | 66,400  | 31,200 | 410,000 | 66,400  | 20,4 | 408 | 39,22 |
|           | 23:00 | 66,800  | 31,600 | 425,000 | 66,000  | 21,2 | 423 | 39,22 |
|           | 23:15 | 55,600  | 30,800 | 410,000 | 55,600  | 19,2 | 408 | 39,22 |
|           | 23:30 | 54,400  | 31,200 | 418,000 | 54,400  | 19,6 | 416 | 39,22 |
|           | 23:45 | 57,200  | 32,000 | 425,000 | 56,800  | 20,4 | 423 | 39,22 |
|           | 0:00  | 55,600  | 31,600 | 418,000 | 55,200  | 19,6 | 416 | 39,22 |
| 5.7.2015. | 0:15  | 54,400  | 30,400 | 410,000 | 54,000  | 18,8 | 408 | 36,14 |
|           | 0:30  | 53,200  | 31,200 | 418,000 | 53,600  | 18,8 | 416 | 36,14 |
|           | 0:45  | 56,800  | 31,200 | 425,000 | 56,000  | 19,6 | 423 | 36,14 |
|           | 1:00  | 52,800  | 30,400 | 418,000 | 52,800  | 18,4 | 416 | 36,14 |
|           | 1:15  | 55,600  | 30,000 | 410,000 | 55,200  | 18   | 408 | 36,14 |
|           | 1:30  | 44,800  | 29,600 | 425,000 | 44,800  | 16,8 | 423 | 36,14 |
|           | 1:45  | 46,400  | 28,800 | 418,000 | 46,000  | 16   | 416 | 36,14 |
|           | 2:00  | 45,200  | 29,200 | 425,000 | 45,200  | 16,4 | 423 | 36,14 |
|           | 2:15  | 50,800  | 27,600 | 418,000 | 50,400  | 15,6 | 416 | 36,14 |

|       |        |        |         |        |      |     |       |
|-------|--------|--------|---------|--------|------|-----|-------|
| 2:30  | 50,400 | 27,600 | 410,000 | 50,400 | 15,2 | 408 | 36,14 |
| 2:45  | 50,400 | 28,400 | 425,000 | 50,400 | 16   | 423 | 36,14 |
| 3:00  | 51,200 | 28,000 | 418,000 | 50,800 | 16   | 416 | 36,14 |
| 3:15  | 50,000 | 27,600 | 425,000 | 50,000 | 14,8 | 423 | 36,14 |
| 3:30  | 44,400 | 27,200 | 418,000 | 44,400 | 14,4 | 416 | 36,14 |
| 3:45  | 45,600 | 28,400 | 418,000 | 44,800 | 15,6 | 416 | 36,14 |
| 4:00  | 46,400 | 28,000 | 425,000 | 46,400 | 14,8 | 423 | 36,14 |
| 4:15  | 54,000 | 28,000 | 418,000 | 53,600 | 16   | 416 | 36,14 |
| 4:30  | 53,200 | 28,000 | 425,000 | 53,200 | 15,6 | 423 | 36,14 |
| 4:45  | 60,400 | 28,400 | 418,000 | 60,400 | 16,4 | 416 | 36,14 |
| 5:00  | 54,800 | 27,600 | 425,000 | 54,400 | 15,2 | 423 | 36,14 |
| 5:15  | 59,200 | 23,200 | 418,000 | 58,800 | 11,6 | 416 | 36,14 |
| 5:30  | 54,000 | 21,600 | 425,000 | 53,600 | 8,8  | 423 | 36,14 |
| 5:45  | 52,800 | 21,600 | 418,000 | 52,800 | 8,8  | 416 | 36,14 |
| 6:00  | 56,400 | 21,200 | 425,000 | 56,000 | 9,2  | 423 | 36,14 |
| 6:15  | 58,000 | 21,600 | 410,000 | 58,000 | 9,2  | 408 | 36,14 |
| 6:30  | 58,800 | 20,800 | 418,000 | 58,400 | 8,8  | 416 | 36,14 |
| 6:45  | 58,800 | 20,800 | 425,000 | 58,400 | 8,8  | 423 | 36,14 |
| 7:00  | 70,800 | 21,600 | 418,000 | 70,800 | 10,8 | 416 | 36,14 |
| 7:15  | 67,600 | 22,000 | 418,000 | 67,200 | 10,4 | 416 | 36,14 |
| 7:30  | 66,400 | 22,000 | 425,000 | 66,000 | 11,2 | 423 | 36,14 |
| 7:45  | 58,000 | 21,600 | 410,000 | 58,000 | 9,6  | 408 | 36,14 |
| 8:00  | 56,400 | 21,200 | 418,000 | 56,000 | 8,8  | 416 | 36,14 |
| 8:15  | 53,200 | 22,800 | 425,000 | 53,200 | 10,4 | 423 | 36,14 |
| 8:30  | 48,000 | 22,000 | 418,000 | 47,600 | 9,6  | 416 | 36,14 |
| 8:45  | 50,000 | 22,400 | 410,000 | 49,600 | 9,2  | 408 | 36,14 |
| 9:00  | 47,600 | 21,600 | 425,000 | 47,600 | 9,2  | 423 | 36,14 |
| 9:15  | 53,600 | 21,600 | 418,000 | 53,600 | 9,2  | 416 | 36,14 |
| 9:30  | 58,000 | 22,800 | 410,000 | 57,600 | 10,8 | 408 | 36,14 |
| 9:45  | 54,800 | 21,600 | 425,000 | 54,800 | 9,6  | 423 | 36,14 |
| 10:00 | 54,400 | 21,600 | 418,000 | 54,000 | 9,6  | 416 | 36,14 |
| 10:15 | 61,200 | 22,400 | 410,000 | 60,800 | 10,8 | 408 | 36,14 |
| 10:30 | 55,600 | 22,400 | 418,000 | 55,600 | 10,4 | 416 | 36,14 |
| 10:45 | 56,800 | 22,400 | 410,000 | 56,400 | 10   | 408 | 36,14 |
| 11:00 | 58,400 | 21,600 | 425,000 | 58,000 | 10,4 | 423 | 36,14 |
| 11:15 | 61,600 | 23,200 | 418,000 | 61,600 | 11,2 | 416 | 36,14 |
| 11:30 | 64,800 | 23,200 | 410,000 | 64,400 | 12,4 | 408 | 36,14 |
| 11:45 | 58,800 | 22,400 | 425,000 | 58,000 | 10,8 | 423 | 36,14 |
| 12:00 | 59,600 | 22,800 | 410,000 | 59,600 | 10,8 | 408 | 36,14 |
| 12:15 | 63,600 | 22,800 | 418,000 | 63,200 | 12   | 416 | 36,14 |
| 12:30 | 63,600 | 22,800 | 410,000 | 63,600 | 11,2 | 408 | 36,14 |
| 12:45 | 62,400 | 22,800 | 418,000 | 62,000 | 11,6 | 416 | 36,14 |
| 13:00 | 62,400 | 23,200 | 410,000 | 62,000 | 12   | 408 | 36,14 |
| 13:15 | 59,600 | 23,200 | 425,000 | 59,600 | 11,2 | 423 | 36,14 |
| 13:30 | 60,400 | 22,800 | 410,000 | 60,000 | 11,2 | 408 | 36,14 |
| 13:45 | 67,200 | 24,000 | 418,000 | 66,800 | 13,2 | 416 | 36,14 |
| 14:00 | 63,200 | 23,200 | 410,000 | 63,200 | 11,6 | 408 | 36,14 |
| 14:15 | 74,000 | 23,600 | 425,000 | 73,200 | 13,6 | 423 | 36,14 |
| 14:30 | 70,400 | 23,600 | 418,000 | 70,400 | 12,4 | 416 | 36,14 |
| 14:45 | 64,000 | 22,800 | 410,000 | 63,200 | 11,6 | 408 | 36,14 |
| 15:00 | 65,600 | 23,600 | 425,000 | 65,600 | 12,8 | 423 | 36,14 |
| 15:15 | 60,000 | 23,600 | 410,000 | 59,600 | 11,6 | 408 | 36,14 |
| 15:30 | 53,600 | 23,200 | 418,000 | 53,200 | 10,8 | 416 | 36,14 |
| 15:45 | 52,800 | 22,800 | 418,000 | 52,800 | 10,8 | 416 | 36,14 |
| 16:00 | 54,000 | 23,200 | 410,000 | 53,600 | 10,8 | 408 | 36,14 |
| 16:15 | 57,600 | 23,600 | 425,000 | 57,200 | 11,6 | 423 | 36,14 |
| 16:30 | 52,400 | 22,800 | 418,000 | 52,400 | 10,8 | 416 | 36,14 |
| 16:45 | 53,600 | 22,800 | 410,000 | 53,600 | 10,4 | 408 | 36,14 |
| 17:00 | 52,000 | 23,200 | 425,000 | 51,600 | 10,8 | 423 | 36,14 |
| 17:15 | 41,600 | 22,000 | 418,000 | 41,600 | 8,8  | 416 | 36,14 |
| 17:30 | 42,400 | 22,000 | 410,000 | 42,400 | 8,8  | 408 | 36,14 |
| 17:45 | 43,200 | 22,000 | 425,000 | 42,800 | 9,2  | 423 | 36,14 |
| 18:00 | 47,600 | 22,400 | 418,000 | 47,600 | 10   | 416 | 36,14 |
| 18:15 | 49,200 | 22,000 | 410,000 | 49,200 | 9,2  | 408 | 36,14 |
| 18:30 | 48,800 | 22,000 | 418,000 | 48,000 | 9,2  | 416 | 36,14 |
| 18:45 | 47,200 | 21,200 | 410,000 | 47,200 | 8,8  | 408 | 36,14 |
| 19:00 | 54,000 | 22,000 | 425,000 | 53,600 | 9,6  | 423 | 36,14 |
| 19:15 | 53,200 | 22,400 | 418,000 | 53,200 | 10,4 | 416 | 36,14 |
| 19:30 | 61,200 | 22,800 | 410,000 | 61,200 | 11,2 | 408 | 36,14 |
| 19:45 | 62,000 | 22,400 | 425,000 | 61,600 | 10,8 | 423 | 36,14 |
| 20:00 | 58,400 | 22,000 | 410,000 | 58,000 | 10   | 408 | 36,14 |
| 20:15 | 38,800 | 20,400 | 418,000 | 38,800 | 7,2  | 416 | 36,14 |
| 20:30 | 42,400 | 20,800 | 425,000 | 42,400 | 7,6  | 423 | 36,14 |
| 20:45 | 43,600 | 20,800 | 410,000 | 43,200 | 8    | 408 | 36,14 |
| 21:00 | 36,400 | 20,400 | 418,000 | 36,400 | 6,8  | 416 | 36,14 |
| 21:15 | 39,600 | 22,000 | 410,000 | 39,600 | 9,2  | 408 | 36,14 |
| 21:30 | 50,000 | 24,000 | 410,000 | 50,000 | 12,4 | 408 | 36,14 |
| 21:45 | 51,200 | 24,400 | 418,000 | 50,800 | 12,4 | 416 | 36,14 |
| 22:00 | 48,400 | 24,400 | 410,000 | 48,400 | 12   | 408 | 36,14 |
| 22:15 | 40,400 | 22,800 | 410,000 | 40,400 | 10   | 408 | 36,14 |



|           |         |         |         |         |         |      |       |       |
|-----------|---------|---------|---------|---------|---------|------|-------|-------|
|           | 22:30   | 45,200  | 23,200  | 410,000 | 44,800  | 10,4 | 408   | 36,14 |
|           | 22:45   | 51,200  | 23,200  | 425,000 | 50,800  | 11,2 | 423   | 36,14 |
|           | 23:00   | 50,400  | 23,600  | 410,000 | 50,400  | 11,6 | 408   | 36,14 |
|           | 23:15   | 56,800  | 25,200  | 410,000 | 56,800  | 14   | 408   | 36,14 |
|           | 23:30   | 54,000  | 25,600  | 402,000 | 53,600  | 13,6 | 400   | 36,14 |
|           | 23:45   | 52,800  | 26,800  | 425,000 | 52,400  | 14,8 | 423   | 36,14 |
|           | 0:00    | 52,000  | 26,800  | 410,000 | 52,000  | 14,8 | 408   | 36,14 |
| 6.7.2015. | 0:15    | 53,200  | 26,800  | 418,000 | 52,800  | 15,2 | 416   | 50,22 |
|           | 0:30    | 49,200  | 25,600  | 410,000 | 49,200  | 13,2 | 408   | 50,22 |
|           | 0:45    | 44,400  | 24,800  | 425,000 | 44,000  | 12,4 | 423   | 50,22 |
|           | 1:00    | 46,400  | 24,400  | 410,000 | 46,800  | 11,6 | 408   | 50,22 |
|           | 1:15    | 55,200  | 24,400  | 410,000 | 54,800  | 12,4 | 408   | 50,22 |
|           | 1:30    | 52,400  | 22,800  | 418,000 | 52,000  | 11,2 | 416   | 50,22 |
|           | 1:45    | 60,400  | 22,400  | 410,000 | 60,400  | 10,8 | 408   | 50,22 |
|           | 2:00    | 53,600  | 22,800  | 425,000 | 53,200  | 10,8 | 423   | 50,22 |
|           | 2:15    | 54,800  | 22,400  | 402,000 | 54,400  | 10,4 | 400   | 50,22 |
|           | 2:30    | 47,600  | 21,600  | 425,000 | 47,600  | 8,8  | 423   | 50,22 |
|           | 2:45    | 50,400  | 21,200  | 410,000 | 50,400  | 8,8  | 408   | 50,22 |
|           | 3:00    | 49,600  | 20,800  | 418,000 | 49,200  | 8,4  | 416   | 50,22 |
|           | 3:15    | 57,200  | 20,800  | 410,000 | 57,200  | 9,2  | 408   | 50,22 |
|           | 3:30    | 52,800  | 21,200  | 425,000 | 52,400  | 8,4  | 423   | 50,22 |
|           | 3:45    | 54,000  | 21,200  | 418,000 | 53,600  | 9,2  | 416   | 50,22 |
|           | 4:00    | 54,000  | 20,800  | 410,000 | 53,600  | 8,8  | 408   | 50,22 |
|           | 4:15    | 56,400  | 21,200  | 425,000 | 56,400  | 9,2  | 423   | 50,22 |
|           | 4:30    | 54,000  | 20,400  | 410,000 | 54,000  | 8    | 408   | 50,22 |
|           | 4:45    | 55,200  | 20,000  | 418,000 | 54,800  | 8    | 416   | 50,22 |
|           | 5:00    | 58,800  | 20,400  | 410,000 | 58,400  | 8,4  | 408   | 50,22 |
|           | 5:15    | 60,000  | 20,000  | 418,000 | 60,000  | 8,4  | 416   | 50,22 |
|           | 5:30    | 56,800  | 20,000  | 425,000 | 56,400  | 7,6  | 423   | 50,22 |
|           | 5:45    | 50,000  | 19,600  | 410,000 | 49,600  | 7,2  | 408   | 50,22 |
|           | 6:00    | 50,400  | 18,800  | 418,000 | 50,400  | 6    | 416   | 50,22 |
|           | 6:15    | 65,600  | 19,200  | 425,000 | 65,200  | 8    | 423   | 50,22 |
|           | 6:30    | 65,200  | 19,600  | 410,000 | 64,800  | 8,4  | 408   | 50,22 |
|           | 6:45    | 70,000  | 20,400  | 418,000 | 70,000  | 9,6  | 416   | 50,22 |
|           | 7:00    | 82,000  | 20,800  | 410,000 | 81,600  | 12   | 408   | 50,22 |
|           | 7:15    | 96,000  | 21,200  | 410,000 | 95,200  | 13,6 | 408   | 50,22 |
|           | 7:30    | 97,600  | 22,800  | 418,000 | 96,400  | 15,6 | 416   | 50,22 |
|           | 7:45    | 100,800 | 23,600  | 410,000 | 100,400 | 17,6 | 408   | 50,22 |
|           | 8:00    | 98,000  | 25,200  | 410,000 | 97,200  | 18,4 | 408   | 50,22 |
|           | 8:15    | 101,200 | 24,000  | 410,000 | 100,400 | 18   | 408   | 50,22 |
|           | 8:30    | 101,200 | 24,400  | 425,000 | 100,400 | 18   | 423   | 50,22 |
|           | 8:45    | 92,000  | 26,000  | 410,000 | 91,200  | 18,4 | 408   | 50,22 |
|           | 9:00    | 101,200 | 28,000  | 410,000 | 100,400 | 22,4 | 408   | 50,22 |
|           | 9:15    | 110,000 | 28,800  | 410,000 | 109,200 | 23,6 | 408   | 50,22 |
|           | 9:30    | 107,600 | 28,400  | 410,000 | 106,800 | 23,6 | 408   | 50,22 |
|           | 9:45    | 104,000 | 32,000  | 418,000 | 103,200 | 26,4 | 416   | 50,22 |
|           | 10:00   | 106,000 | 32,800  | 410,000 | 105,200 | 27,6 | 408   | 50,22 |
|           | 10:15   | 108,000 | 33,200  | 410,000 | 106,800 | 28,4 | 408   | 50,22 |
|           | 10:30   | 106,400 | 33,200  | 410,000 | 105,600 | 28   | 408   | 50,22 |
| 10:45     | 103,200 | 32,400  | 418,000 | 102,400 | 26,8    | 416  | 50,22 |       |
| 11:00     | 108,400 | 32,000  | 410,000 | 107,200 | 27,6    | 408  | 50,22 |       |
| 11:15     | 108,400 | 32,400  | 410,000 | 107,600 | 27,6    | 408  | 50,22 |       |
| 11:30     | 109,600 | 32,800  | 410,000 | 108,400 | 28,4    | 408  | 50,22 |       |
| 11:45     | 112,400 | 32,400  | 410,000 | 111,600 | 28,8    | 408  | 50,22 |       |
| 12:00     | 112,800 | 32,800  | 410,000 | 111,600 | 28,8    | 408  | 50,22 |       |
| 12:15     | 113,600 | 31,200  | 410,000 | 112,800 | 28      | 408  | 50,22 |       |
| 12:30     | 114,000 | 34,800  | 410,000 | 112,800 | 31,6    | 408  | 50,22 |       |
| 12:45     | 114,800 | 37,200  | 410,000 | 113,600 | 33,6    | 408  | 50,22 |       |
| 13:00     | 114,800 | 37,600  | 418,000 | 114,000 | 34,8    | 416  | 50,22 |       |
| 13:15     | 125,600 | 37,200  | 410,000 | 124,400 | 36,4    | 408  | 50,22 |       |
| 13:30     | 124,000 | 38,000  | 402,000 | 122,400 | 36,8    | 400  | 50,22 |       |
| 13:45     | 126,800 | 38,000  | 410,000 | 125,600 | 37,6    | 408  | 50,22 |       |
| 14:00     | 128,000 | 38,800  | 410,000 | 126,400 | 38,4    | 408  | 50,22 |       |
| 14:15     | 103,600 | 38,000  | 402,000 | 102,800 | 32,8    | 400  | 50,22 |       |
| 14:30     | 98,800  | 36,000  | 425,000 | 98,000  | 30,8    | 423  | 50,22 |       |
| 14:45     | 96,400  | 36,000  | 410,000 | 95,600  | 29,6    | 408  | 50,22 |       |
| 15:00     | 96,400  | 36,400  | 410,000 | 96,000  | 30      | 408  | 50,22 |       |
| 15:15     | 98,400  | 36,800  | 410,000 | 97,200  | 30,4    | 408  | 50,22 |       |
| 15:30     | 98,000  | 36,000  | 410,000 | 97,200  | 30      | 408  | 50,22 |       |
| 15:45     | 100,400 | 36,000  | 410,000 | 99,600  | 30,8    | 408  | 50,22 |       |
| 16:00     | 100,000 | 36,400  | 418,000 | 99,200  | 30,4    | 416  | 50,22 |       |
| 16:15     | 100,400 | 36,400  | 410,000 | 99,600  | 30,8    | 408  | 50,22 |       |
| 16:30     | 103,600 | 36,400  | 410,000 | 102,400 | 31,2    | 408  | 50,22 |       |
| 16:45     | 104,000 | 36,800  | 410,000 | 103,600 | 31,6    | 408  | 50,22 |       |
| 17:00     | 99,600  | 36,000  | 418,000 | 98,400  | 30      | 416  | 50,22 |       |
| 17:15     | 98,400  | 35,600  | 410,000 | 97,600  | 29,2    | 408  | 50,22 |       |
| 17:30     | 96,800  | 35,200  | 410,000 | 96,000  | 28,8    | 408  | 50,22 |       |
| 17:45     | 98,400  | 35,600  | 410,000 | 98,000  | 29,6    | 408  | 50,22 |       |
| 18:00     | 101,200 | 35,200  | 425,000 | 100,400 | 29,6    | 423  | 50,22 |       |
| 18:15     | 94,400  | 36,000  | 410,000 | 93,200  | 28,8    | 408  | 50,22 |       |

|           |         |         |         |         |         |      |       |       |
|-----------|---------|---------|---------|---------|---------|------|-------|-------|
|           | 18:30   | 94,400  | 35,200  | 410,000 | 94,000  | 28,4 | 408   | 50,22 |
|           | 18:45   | 94,400  | 35,200  | 418,000 | 94,000  | 28   | 416   | 50,22 |
|           | 19:00   | 92,400  | 34,400  | 410,000 | 91,600  | 27,6 | 408   | 50,22 |
|           | 19:15   | 96,400  | 35,200  | 410,000 | 95,600  | 28,4 | 408   | 50,22 |
|           | 19:30   | 94,800  | 35,200  | 418,000 | 94,000  | 28,4 | 416   | 50,22 |
|           | 19:45   | 93,200  | 34,800  | 410,000 | 92,400  | 27,6 | 408   | 50,22 |
|           | 20:00   | 91,600  | 35,200  | 425,000 | 91,200  | 28   | 423   | 50,22 |
|           | 20:15   | 88,000  | 35,200  | 410,000 | 87,200  | 27,6 | 408   | 50,22 |
|           | 20:30   | 83,200  | 35,600  | 418,000 | 83,200  | 26,8 | 416   | 50,22 |
|           | 20:45   | 86,000  | 36,000  | 410,000 | 84,800  | 28   | 408   | 50,22 |
|           | 21:00   | 80,400  | 35,600  | 410,000 | 80,000  | 26,8 | 408   | 50,22 |
|           | 21:15   | 74,400  | 35,200  | 425,000 | 74,000  | 26   | 423   | 50,22 |
|           | 21:30   | 79,200  | 35,600  | 402,000 | 78,800  | 26,8 | 400   | 50,22 |
|           | 21:45   | 75,600  | 36,400  | 425,000 | 75,200  | 26,8 | 423   | 50,22 |
|           | 22:00   | 76,800  | 36,400  | 410,000 | 76,400  | 27,6 | 408   | 50,22 |
|           | 22:15   | 65,200  | 35,200  | 410,000 | 64,400  | 24,8 | 408   | 50,22 |
|           | 22:30   | 75,200  | 36,000  | 418,000 | 75,200  | 26,4 | 416   | 50,22 |
|           | 22:45   | 79,200  | 35,200  | 410,000 | 78,800  | 26,8 | 408   | 50,22 |
|           | 23:00   | 79,600  | 36,000  | 425,000 | 79,200  | 26,8 | 423   | 50,22 |
|           | 23:15   | 64,400  | 34,800  | 410,000 | 64,000  | 24   | 408   | 50,22 |
|           | 23:30   | 54,000  | 33,600  | 418,000 | 53,600  | 22   | 416   | 50,22 |
|           | 23:45   | 62,400  | 34,000  | 425,000 | 62,000  | 23,2 | 423   | 50,22 |
|           | 0:00    | 57,600  | 34,400  | 402,000 | 57,600  | 23,2 | 400   | 50,22 |
| 7.7.2015. | 0:15    | 51,600  | 34,000  | 425,000 | 51,200  | 22   | 423   | 68,72 |
|           | 0:30    | 52,400  | 34,400  | 418,000 | 52,400  | 22,4 | 416   | 68,72 |
|           | 0:45    | 50,800  | 34,000  | 425,000 | 50,400  | 21,6 | 423   | 68,72 |
|           | 1:00    | 50,800  | 33,600  | 410,000 | 50,800  | 22   | 408   | 68,72 |
|           | 1:15    | 60,000  | 33,600  | 418,000 | 59,600  | 22   | 416   | 68,72 |
|           | 1:30    | 54,800  | 32,800  | 425,000 | 54,400  | 21,2 | 423   | 68,72 |
|           | 1:45    | 45,600  | 32,800  | 418,000 | 45,600  | 20   | 416   | 68,72 |
|           | 2:00    | 49,200  | 32,400  | 410,000 | 48,800  | 20,4 | 408   | 68,72 |
|           | 2:15    | 55,600  | 33,200  | 425,000 | 55,600  | 21,2 | 423   | 68,72 |
|           | 2:30    | 48,800  | 32,000  | 418,000 | 48,400  | 19,6 | 416   | 68,72 |
|           | 2:45    | 51,600  | 31,600  | 425,000 | 51,600  | 19,6 | 423   | 68,72 |
|           | 3:00    | 46,000  | 31,600  | 418,000 | 46,000  | 18,8 | 416   | 68,72 |
|           | 3:15    | 49,600  | 32,000  | 418,000 | 49,200  | 20   | 416   | 68,72 |
|           | 3:30    | 51,600  | 32,000  | 425,000 | 51,200  | 20   | 423   | 68,72 |
|           | 3:45    | 56,800  | 32,000  | 410,000 | 56,400  | 19,6 | 408   | 68,72 |
|           | 4:00    | 56,400  | 32,000  | 418,000 | 56,400  | 20,4 | 416   | 68,72 |
|           | 4:15    | 52,800  | 31,200  | 425,000 | 52,400  | 19,2 | 423   | 68,72 |
|           | 4:30    | 55,600  | 31,600  | 418,000 | 55,600  | 19,6 | 416   | 68,72 |
|           | 4:45    | 56,000  | 30,800  | 425,000 | 55,600  | 19,2 | 423   | 68,72 |
|           | 5:00    | 56,400  | 31,600  | 418,000 | 56,000  | 19,2 | 416   | 68,72 |
|           | 5:15    | 45,600  | 30,000  | 425,000 | 45,600  | 17,6 | 423   | 68,72 |
|           | 5:30    | 50,800  | 30,000  | 418,000 | 50,400  | 17,6 | 416   | 68,72 |
|           | 5:45    | 43,200  | 29,200  | 425,000 | 43,200  | 16   | 423   | 68,72 |
|           | 6:00    | 47,600  | 30,000  | 418,000 | 47,600  | 17,2 | 416   | 68,72 |
|           | 6:15    | 67,600  | 30,000  | 425,000 | 67,200  | 19,2 | 423   | 68,72 |
|           | 6:30    | 60,800  | 30,000  | 402,000 | 60,400  | 18,4 | 400   | 68,72 |
|           | 6:45    | 65,200  | 29,200  | 425,000 | 64,800  | 18,4 | 423   | 68,72 |
|           | 7:00    | 62,400  | 29,200  | 418,000 | 62,000  | 17,6 | 416   | 68,72 |
|           | 7:15    | 82,400  | 29,600  | 425,000 | 82,000  | 20,4 | 423   | 68,72 |
|           | 7:30    | 90,800  | 30,400  | 418,000 | 90,000  | 22   | 416   | 68,72 |
|           | 7:45    | 88,800  | 30,400  | 410,000 | 88,400  | 22,4 | 408   | 68,72 |
|           | 8:00    | 90,400  | 30,400  | 425,000 | 89,600  | 22,4 | 423   | 68,72 |
|           | 8:15    | 95,600  | 30,800  | 410,000 | 94,800  | 23,6 | 408   | 68,72 |
|           | 8:30    | 96,800  | 30,800  | 418,000 | 96,400  | 23,6 | 416   | 68,72 |
|           | 8:45    | 98,400  | 31,200  | 410,000 | 97,200  | 24,4 | 408   | 68,72 |
|           | 9:00    | 99,200  | 31,200  | 425,000 | 98,800  | 25,2 | 423   | 68,72 |
|           | 9:15    | 98,400  | 30,800  | 410,000 | 97,600  | 24   | 408   | 68,72 |
|           | 9:30    | 99,200  | 28,800  | 402,000 | 98,400  | 22,8 | 400   | 68,72 |
|           | 9:45    | 94,000  | 28,400  | 425,000 | 93,200  | 21,2 | 423   | 68,72 |
|           | 10:00   | 96,000  | 28,800  | 410,000 | 95,200  | 21,6 | 408   | 68,72 |
|           | 10:15   | 102,800 | 29,200  | 410,000 | 102,000 | 23,6 | 408   | 68,72 |
|           | 10:30   | 105,600 | 32,000  | 410,000 | 104,800 | 26,4 | 408   | 68,72 |
| 10:45     | 107,200 | 32,400  | 418,000 | 106,000 | 27,6    | 416  | 68,72 |       |
| 11:00     | 106,000 | 32,000  | 410,000 | 105,600 | 27,2    | 408  | 68,72 |       |
| 11:15     | 109,200 | 31,600  | 410,000 | 108,000 | 26,8    | 408  | 68,72 |       |
| 11:30     | 104,000 | 30,800  | 410,000 | 103,200 | 25,6    | 408  | 68,72 |       |
| 11:45     | 105,600 | 31,200  | 410,000 | 104,400 | 26      | 408  | 68,72 |       |
| 12:00     | 106,800 | 31,200  | 410,000 | 106,000 | 26,4    | 408  | 68,72 |       |
| 12:15     | 109,600 | 33,200  | 410,000 | 108,400 | 28,8    | 408  | 68,72 |       |
| 12:30     | 106,400 | 32,800  | 410,000 | 105,600 | 28      | 408  | 68,72 |       |
| 12:45     | 108,800 | 32,400  | 410,000 | 108,000 | 28      | 408  | 68,72 |       |
| 13:00     | 106,800 | 34,000  | 410,000 | 105,600 | 29,2    | 408  | 68,72 |       |
| 13:15     | 112,000 | 33,200  | 410,000 | 111,200 | 29,6    | 408  | 68,72 |       |
| 13:30     | 111,600 | 33,600  | 410,000 | 110,400 | 30      | 408  | 68,72 |       |
| 13:45     | 112,000 | 34,000  | 402,000 | 110,800 | 30,4    | 400  | 68,72 |       |
| 14:00     | 118,000 | 36,000  | 410,000 | 116,800 | 33,6    | 408  | 68,72 |       |
| 14:15     | 114,800 | 35,600  | 410,000 | 114,000 | 32,4    | 408  | 68,72 |       |

|           |         |         |         |         |         |      |       |       |
|-----------|---------|---------|---------|---------|---------|------|-------|-------|
|           | 14:30   | 112,400 | 35,200  | 410,000 | 111,200 | 31,6 | 408   | 68,72 |
|           | 14:45   | 114,400 | 35,200  | 410,000 | 113,200 | 32   | 408   | 68,72 |
|           | 15:00   | 114,400 | 36,800  | 410,000 | 113,600 | 33,2 | 408   | 68,72 |
|           | 15:15   | 107,600 | 37,200  | 425,000 | 106,400 | 32,8 | 423   | 68,72 |
|           | 15:30   | 106,000 | 37,200  | 410,000 | 105,200 | 32,4 | 408   | 68,72 |
|           | 15:45   | 113,600 | 38,000  | 410,000 | 112,400 | 34   | 408   | 68,72 |
|           | 16:00   | 113,200 | 37,600  | 402,000 | 112,000 | 34   | 400   | 68,72 |
|           | 16:15   | 110,400 | 36,800  | 425,000 | 110,000 | 32,8 | 423   | 68,72 |
|           | 16:30   | 117,600 | 37,600  | 410,000 | 116,000 | 34,8 | 408   | 68,72 |
|           | 16:45   | 119,600 | 37,600  | 410,000 | 118,400 | 34,8 | 408   | 68,72 |
|           | 17:00   | 122,400 | 37,200  | 418,000 | 121,200 | 35,2 | 416   | 68,72 |
|           | 17:15   | 117,200 | 36,800  | 410,000 | 116,400 | 34   | 408   | 68,72 |
|           | 17:30   | 120,800 | 37,200  | 410,000 | 119,200 | 34,4 | 408   | 68,72 |
|           | 17:45   | 123,600 | 37,200  | 410,000 | 122,400 | 35,2 | 408   | 68,72 |
|           | 18:00   | 118,800 | 36,400  | 425,000 | 117,600 | 34   | 423   | 68,72 |
|           | 18:15   | 114,400 | 36,800  | 402,000 | 113,600 | 32,8 | 400   | 68,72 |
|           | 18:30   | 119,600 | 37,200  | 410,000 | 118,000 | 34,4 | 408   | 68,72 |
|           | 18:45   | 120,800 | 36,400  | 425,000 | 120,000 | 34,4 | 423   | 68,72 |
|           | 19:00   | 120,000 | 36,000  | 410,000 | 118,800 | 33,2 | 408   | 68,72 |
|           | 19:15   | 118,800 | 36,400  | 418,000 | 117,600 | 33,6 | 416   | 68,72 |
|           | 19:30   | 115,600 | 36,800  | 410,000 | 114,800 | 33,2 | 408   | 68,72 |
|           | 19:45   | 112,800 | 36,800  | 410,000 | 111,600 | 32,4 | 408   | 68,72 |
|           | 20:00   | 113,600 | 36,000  | 425,000 | 112,400 | 32   | 423   | 68,72 |
|           | 20:15   | 102,000 | 36,400  | 410,000 | 101,600 | 30,8 | 408   | 68,72 |
|           | 20:30   | 98,000  | 36,400  | 418,000 | 97,200  | 30   | 416   | 68,72 |
|           | 20:45   | 93,200  | 36,800  | 418,000 | 92,400  | 29,6 | 416   | 68,72 |
|           | 21:00   | 96,000  | 36,400  | 418,000 | 95,200  | 30   | 416   | 68,72 |
|           | 21:15   | 84,800  | 35,600  | 410,000 | 84,400  | 26,8 | 408   | 68,72 |
|           | 21:30   | 81,600  | 37,600  | 410,000 | 81,200  | 29,2 | 408   | 68,72 |
|           | 21:45   | 82,800  | 41,200  | 425,000 | 82,000  | 33,6 | 423   | 68,72 |
|           | 22:00   | 82,400  | 43,600  | 410,000 | 82,000  | 36   | 408   | 68,72 |
|           | 22:15   | 75,200  | 39,600  | 410,000 | 74,400  | 30,8 | 408   | 68,72 |
|           | 22:30   | 82,400  | 39,600  | 410,000 | 82,000  | 31,6 | 408   | 68,72 |
|           | 22:45   | 84,000  | 39,600  | 418,000 | 83,200  | 32   | 416   | 68,72 |
|           | 23:00   | 75,600  | 39,200  | 410,000 | 75,200  | 30,4 | 408   | 68,72 |
|           | 23:15   | 71,600  | 38,400  | 410,000 | 71,600  | 28,8 | 408   | 68,72 |
|           | 23:30   | 70,400  | 38,000  | 410,000 | 69,600  | 28,4 | 408   | 68,72 |
|           | 23:45   | 67,600  | 38,000  | 418,000 | 67,600  | 28   | 416   | 68,72 |
|           | 0:00    | 69,600  | 37,200  | 410,000 | 69,200  | 27,6 | 408   | 68,72 |
| 8.7.2015. | 0:15    | 63,200  | 37,600  | 425,000 | 62,400  | 27,2 | 423   | 56,61 |
|           | 0:30    | 58,000  | 36,800  | 410,000 | 58,000  | 25,6 | 408   | 56,61 |
|           | 0:45    | 55,600  | 36,000  | 418,000 | 55,600  | 24,8 | 416   | 56,61 |
|           | 1:00    | 57,600  | 35,600  | 410,000 | 57,200  | 24,4 | 408   | 56,61 |
|           | 1:15    | 53,600  | 34,800  | 425,000 | 53,200  | 23,2 | 423   | 56,61 |
|           | 1:30    | 54,800  | 34,800  | 410,000 | 54,400  | 23,2 | 408   | 56,61 |
|           | 1:45    | 60,800  | 35,200  | 418,000 | 60,800  | 24   | 416   | 56,61 |
|           | 2:00    | 49,600  | 34,400  | 418,000 | 49,200  | 22,4 | 416   | 56,61 |
|           | 2:15    | 49,200  | 34,800  | 410,000 | 49,200  | 23,2 | 408   | 56,61 |
|           | 2:30    | 44,000  | 34,000  | 425,000 | 43,600  | 21,6 | 423   | 56,61 |
|           | 2:45    | 41,600  | 33,600  | 410,000 | 41,600  | 21,2 | 408   | 56,61 |
|           | 3:00    | 44,000  | 34,800  | 418,000 | 43,600  | 22   | 416   | 56,61 |
|           | 3:15    | 48,000  | 34,800  | 425,000 | 48,000  | 23,2 | 423   | 56,61 |
|           | 3:30    | 51,200  | 34,400  | 410,000 | 50,800  | 22   | 408   | 56,61 |
|           | 3:45    | 48,000  | 33,600  | 418,000 | 48,000  | 21,6 | 416   | 56,61 |
|           | 4:00    | 47,600  | 33,600  | 425,000 | 47,200  | 21,6 | 423   | 56,61 |
|           | 4:15    | 49,600  | 33,200  | 418,000 | 49,200  | 20,8 | 416   | 56,61 |
|           | 4:30    | 52,400  | 32,800  | 410,000 | 52,400  | 20,8 | 408   | 56,61 |
|           | 4:45    | 52,800  | 32,400  | 418,000 | 52,800  | 20,4 | 416   | 56,61 |
|           | 5:00    | 54,800  | 32,800  | 425,000 | 54,000  | 21,2 | 423   | 56,61 |
|           | 5:15    | 66,800  | 32,800  | 418,000 | 66,800  | 22   | 416   | 56,61 |
|           | 5:30    | 58,000  | 33,200  | 425,000 | 57,600  | 21,2 | 423   | 56,61 |
|           | 5:45    | 57,600  | 33,200  | 410,000 | 57,200  | 21,6 | 408   | 56,61 |
|           | 6:00    | 56,800  | 31,600  | 418,000 | 56,400  | 20,4 | 416   | 56,61 |
|           | 6:15    | 69,200  | 31,600  | 425,000 | 69,200  | 20,8 | 423   | 56,61 |
|           | 6:30    | 71,200  | 30,400  | 418,000 | 70,800  | 20   | 416   | 56,61 |
|           | 6:45    | 64,400  | 27,200  | 410,000 | 63,600  | 15,6 | 408   | 56,61 |
|           | 7:00    | 71,600  | 26,400  | 425,000 | 71,200  | 16   | 423   | 56,61 |
|           | 7:15    | 80,800  | 26,000  | 418,000 | 80,400  | 16,8 | 416   | 56,61 |
|           | 7:30    | 88,400  | 28,800  | 410,000 | 88,000  | 20,8 | 408   | 56,61 |
|           | 7:45    | 86,400  | 29,600  | 425,000 | 85,600  | 21,2 | 423   | 56,61 |
|           | 8:00    | 93,600  | 30,000  | 402,000 | 92,800  | 22   | 400   | 56,61 |
|           | 8:15    | 104,000 | 28,400  | 425,000 | 103,600 | 23,2 | 423   | 56,61 |
|           | 8:30    | 103,200 | 29,200  | 410,000 | 102,000 | 23,6 | 408   | 56,61 |
|           | 8:45    | 105,600 | 30,000  | 410,000 | 104,800 | 24,8 | 408   | 56,61 |
|           | 9:00    | 106,800 | 30,800  | 410,000 | 106,000 | 26   | 408   | 56,61 |
|           | 9:15    | 108,800 | 30,400  | 410,000 | 107,600 | 25,6 | 408   | 56,61 |
|           | 9:30    | 103,600 | 30,800  | 410,000 | 102,800 | 25,6 | 408   | 56,61 |
|           | 9:45    | 106,000 | 31,600  | 410,000 | 105,200 | 26,4 | 408   | 56,61 |
|           | 10:00   | 102,000 | 31,600  | 402,000 | 101,200 | 26,4 | 400   | 56,61 |
| 10:15     | 102,000 | 33,200  | 410,000 | 100,800 | 28      | 408  | 56,61 |       |

|           |       |         |        |         |         |      |     |       |
|-----------|-------|---------|--------|---------|---------|------|-----|-------|
|           | 10:30 | 101,600 | 33,600 | 410,000 | 100,800 | 28,4 | 408 | 56,61 |
|           | 10:45 | 104,000 | 34,800 | 410,000 | 103,200 | 29,6 | 408 | 56,61 |
|           | 11:00 | 112,800 | 32,800 | 410,000 | 112,000 | 30   | 408 | 56,61 |
|           | 11:15 | 110,400 | 37,200 | 402,000 | 109,200 | 33,2 | 400 | 56,61 |
|           | 11:30 | 107,200 | 39,200 | 410,000 | 106,000 | 35,2 | 408 | 56,61 |
|           | 11:45 | 107,600 | 38,800 | 410,000 | 106,400 | 35,2 | 408 | 56,61 |
|           | 12:00 | 106,800 | 42,400 | 402,000 | 106,000 | 38,8 | 400 | 56,61 |
|           | 12:15 | 104,800 | 42,800 | 410,000 | 104,000 | 38,8 | 408 | 56,61 |
|           | 12:30 | 108,400 | 42,800 | 402,000 | 107,200 | 39,6 | 400 | 56,61 |
|           | 12:45 | 109,200 | 42,800 | 410,000 | 108,000 | 39,6 | 408 | 56,61 |
|           | 13:00 | 106,800 | 42,800 | 410,000 | 106,000 | 39,6 | 408 | 56,61 |
|           | 13:15 | 113,600 | 43,600 | 410,000 | 112,400 | 41,2 | 408 | 56,61 |
|           | 13:30 | 114,800 | 42,400 | 394,000 | 113,200 | 40,4 | 392 | 56,61 |
|           | 13:45 | 114,400 | 42,000 | 410,000 | 113,600 | 40   | 408 | 56,61 |
|           | 14:00 | 112,800 | 44,000 | 394,000 | 111,600 | 42   | 392 | 56,61 |
|           | 14:15 | 116,400 | 44,400 | 410,000 | 115,200 | 42,8 | 408 | 56,61 |
|           | 14:30 | 114,800 | 44,000 | 410,000 | 113,600 | 42,4 | 408 | 56,61 |
|           | 14:45 | 118,800 | 43,200 | 402,000 | 117,600 | 42   | 400 | 56,61 |
|           | 15:00 | 119,600 | 42,000 | 410,000 | 118,000 | 40,8 | 408 | 56,61 |
|           | 15:15 | 120,000 | 42,000 | 394,000 | 118,800 | 41,6 | 392 | 56,61 |
|           | 15:30 | 119,600 | 42,000 | 410,000 | 118,400 | 40,8 | 408 | 56,61 |
|           | 15:45 | 120,800 | 42,800 | 394,000 | 119,600 | 42,4 | 392 | 56,61 |
|           | 16:00 | 123,200 | 45,200 | 410,000 | 122,000 | 44,4 | 408 | 56,61 |
|           | 16:15 | 122,400 | 45,600 | 410,000 | 120,800 | 45,2 | 408 | 56,61 |
|           | 16:30 | 121,200 | 45,600 | 410,000 | 119,600 | 44,8 | 408 | 56,61 |
|           | 16:45 | 116,400 | 45,200 | 402,000 | 115,600 | 43,6 | 400 | 56,61 |
|           | 17:00 | 111,600 | 45,200 | 410,000 | 110,400 | 42   | 408 | 56,61 |
|           | 17:15 | 106,400 | 43,200 | 410,000 | 105,200 | 39,6 | 408 | 56,61 |
|           | 17:30 | 112,000 | 43,600 | 402,000 | 111,200 | 40,4 | 400 | 56,61 |
|           | 17:45 | 109,600 | 43,600 | 410,000 | 108,400 | 40,4 | 408 | 56,61 |
|           | 18:00 | 105,600 | 44,800 | 410,000 | 104,800 | 40,8 | 408 | 56,61 |
|           | 18:15 | 103,200 | 45,200 | 425,000 | 102,400 | 40,4 | 423 | 56,61 |
|           | 18:30 | 101,600 | 45,200 | 410,000 | 100,800 | 40,4 | 408 | 56,61 |
|           | 18:45 | 100,400 | 43,600 | 410,000 | 99,600  | 38,8 | 408 | 56,61 |
|           | 19:00 | 98,800  | 44,000 | 410,000 | 97,600  | 38,4 | 408 | 56,61 |
|           | 19:15 | 98,400  | 43,600 | 410,000 | 98,000  | 38,4 | 408 | 56,61 |
|           | 19:30 | 101,200 | 44,000 | 418,000 | 100,000 | 38,4 | 416 | 56,61 |
|           | 19:45 | 100,000 | 43,200 | 410,000 | 99,200  | 38,4 | 408 | 56,61 |
|           | 20:00 | 94,800  | 43,200 | 410,000 | 94,400  | 36,8 | 408 | 56,61 |
|           | 20:15 | 89,600  | 42,800 | 410,000 | 88,400  | 36   | 408 | 56,61 |
|           | 20:30 | 78,800  | 42,800 | 418,000 | 78,400  | 34,4 | 416 | 56,61 |
|           | 20:45 | 91,200  | 44,400 | 410,000 | 90,800  | 38   | 408 | 56,61 |
|           | 21:00 | 86,400  | 44,400 | 410,000 | 85,600  | 37,2 | 408 | 56,61 |
|           | 21:15 | 84,000  | 44,000 | 425,000 | 83,200  | 36,4 | 423 | 56,61 |
|           | 21:30 | 86,400  | 44,800 | 410,000 | 86,000  | 37,6 | 408 | 56,61 |
|           | 21:45 | 82,400  | 45,600 | 410,000 | 82,000  | 38   | 408 | 56,61 |
|           | 22:00 | 78,400  | 45,200 | 418,000 | 77,600  | 36,8 | 416 | 56,61 |
|           | 22:15 | 65,200  | 43,600 | 410,000 | 64,800  | 34   | 408 | 56,61 |
|           | 22:30 | 72,800  | 43,600 | 410,000 | 72,400  | 34,4 | 408 | 56,61 |
|           | 22:45 | 76,000  | 42,800 | 418,000 | 75,600  | 34   | 416 | 56,61 |
|           | 23:00 | 66,400  | 41,600 | 410,000 | 66,000  | 31,6 | 408 | 56,61 |
|           | 23:15 | 49,200  | 40,000 | 425,000 | 48,800  | 28,8 | 423 | 56,61 |
|           | 23:30 | 44,400  | 39,200 | 418,000 | 44,400  | 26,8 | 416 | 56,61 |
|           | 23:45 | 52,000  | 37,600 | 410,000 | 50,800  | 26,4 | 408 | 56,61 |
|           | 0:00  | 42,800  | 37,200 | 425,000 | 42,400  | 24,8 | 423 | 56,61 |
|           | 0:15  | 42,800  | 36,800 | 418,000 | 42,400  | 24,4 | 416 | 42,94 |
|           | 0:30  | 53,600  | 36,800 | 410,000 | 53,200  | 24,8 | 408 | 42,94 |
|           | 0:45  | 58,000  | 35,200 | 425,000 | 57,600  | 24   | 423 | 42,94 |
|           | 1:00  | 51,600  | 33,600 | 418,000 | 51,200  | 21,6 | 416 | 42,94 |
|           | 1:15  | 52,800  | 32,800 | 418,000 | 52,400  | 20,8 | 416 | 42,94 |
|           | 1:30  | 51,200  | 32,000 | 410,000 | 51,200  | 20   | 408 | 42,94 |
|           | 1:45  | 50,800  | 32,400 | 425,000 | 50,400  | 20   | 423 | 42,94 |
|           | 2:00  | 44,800  | 31,600 | 418,000 | 44,400  | 19,2 | 416 | 42,94 |
|           | 2:15  | 45,200  | 32,000 | 425,000 | 45,200  | 19,6 | 423 | 42,94 |
|           | 2:30  | 42,000  | 32,400 | 418,000 | 42,000  | 19,2 | 416 | 42,94 |
|           | 2:45  | 46,800  | 31,600 | 425,000 | 46,400  | 19,2 | 423 | 42,94 |
|           | 3:00  | 42,400  | 30,800 | 418,000 | 42,400  | 17,6 | 416 | 42,94 |
|           | 3:15  | 47,600  | 30,400 | 425,000 | 47,200  | 18   | 423 | 42,94 |
|           | 3:30  | 48,400  | 30,400 | 418,000 | 48,000  | 17,6 | 416 | 42,94 |
|           | 3:45  | 42,800  | 29,600 | 425,000 | 43,200  | 16,8 | 423 | 42,94 |
|           | 4:00  | 46,800  | 30,400 | 418,000 | 46,400  | 17,6 | 416 | 42,94 |
|           | 4:15  | 49,200  | 30,000 | 410,000 | 49,200  | 17,6 | 408 | 42,94 |
|           | 4:30  | 52,400  | 30,400 | 418,000 | 52,000  | 18   | 416 | 42,94 |
|           | 4:45  | 52,000  | 30,000 | 425,000 | 51,600  | 18   | 423 | 42,94 |
|           | 5:00  | 56,800  | 30,400 | 418,000 | 56,400  | 18,4 | 416 | 42,94 |
|           | 5:15  | 55,600  | 30,000 | 425,000 | 55,600  | 17,6 | 423 | 42,94 |
|           | 5:30  | 45,600  | 28,800 | 418,000 | 45,600  | 16   | 416 | 42,94 |
|           | 5:45  | 47,600  | 28,800 | 425,000 | 47,200  | 16   | 423 | 42,94 |
|           | 6:00  | 50,000  | 29,200 | 418,000 | 49,600  | 16,4 | 416 | 42,94 |
|           | 6:15  | 62,800  | 28,800 | 425,000 | 62,800  | 17,6 | 423 | 42,94 |
| 9.7.2015. |       |         |        |         |         |      |     |       |

|            |        |        |         |         |        |      |       |       |
|------------|--------|--------|---------|---------|--------|------|-------|-------|
|            | 6:30   | 65,600 | 29,200  | 418,000 | 65,200 | 17,6 | 416   | 42,94 |
|            | 6:45   | 62,400 | 28,400  | 425,000 | 62,000 | 17,2 | 423   | 42,94 |
|            | 7:00   | 63,200 | 28,000  | 418,000 | 62,800 | 16,4 | 416   | 42,94 |
|            | 7:15   | 66,000 | 28,400  | 425,000 | 65,600 | 17,2 | 423   | 42,94 |
|            | 7:30   | 66,000 | 29,600  | 418,000 | 65,600 | 18,4 | 416   | 42,94 |
|            | 7:45   | 75,600 | 31,600  | 425,000 | 75,200 | 22   | 423   | 42,94 |
|            | 8:00   | 70,800 | 32,800  | 402,000 | 70,400 | 22,8 | 400   | 42,94 |
|            | 8:15   | 84,000 | 34,000  | 425,000 | 83,200 | 25,2 | 423   | 42,94 |
|            | 8:30   | 80,800 | 33,600  | 410,000 | 80,400 | 24,8 | 408   | 42,94 |
|            | 8:45   | 76,000 | 34,000  | 418,000 | 75,600 | 24,4 | 416   | 42,94 |
|            | 9:00   | 79,200 | 34,400  | 410,000 | 78,800 | 25,6 | 408   | 42,94 |
|            | 9:15   | 83,600 | 34,800  | 425,000 | 82,800 | 26,4 | 423   | 42,94 |
|            | 9:30   | 80,800 | 34,800  | 410,000 | 80,000 | 26   | 408   | 42,94 |
|            | 9:45   | 80,400 | 35,200  | 418,000 | 80,000 | 26,8 | 416   | 42,94 |
|            | 10:00  | 81,600 | 36,000  | 410,000 | 81,200 | 27,2 | 408   | 42,94 |
|            | 10:15  | 87,200 | 36,400  | 410,000 | 86,800 | 28,8 | 408   | 42,94 |
|            | 10:30  | 87,600 | 37,200  | 418,000 | 86,400 | 30   | 416   | 42,94 |
|            | 10:45  | 89,200 | 38,000  | 410,000 | 88,400 | 30,4 | 408   | 42,94 |
|            | 11:00  | 88,400 | 37,200  | 425,000 | 88,000 | 29,6 | 423   | 42,94 |
|            | 11:15  | 91,200 | 39,200  | 410,000 | 90,400 | 32   | 408   | 42,94 |
|            | 11:30  | 94,400 | 38,400  | 410,000 | 94,000 | 32,4 | 408   | 42,94 |
|            | 11:45  | 92,000 | 38,400  | 418,000 | 91,200 | 31,2 | 416   | 42,94 |
|            | 12:00  | 94,800 | 39,200  | 410,000 | 94,400 | 32,8 | 408   | 42,94 |
|            | 12:15  | 98,400 | 40,000  | 410,000 | 97,200 | 34   | 408   | 42,94 |
|            | 12:30  | 94,800 | 39,200  | 410,000 | 94,400 | 33,6 | 408   | 42,94 |
|            | 12:45  | 88,800 | 39,600  | 425,000 | 87,600 | 32   | 423   | 42,94 |
|            | 13:00  | 91,600 | 39,600  | 402,000 | 90,800 | 32,4 | 400   | 42,94 |
|            | 13:15  | 92,400 | 39,600  | 410,000 | 91,600 | 33,2 | 408   | 42,94 |
|            | 13:30  | 91,600 | 39,200  | 425,000 | 91,200 | 32,4 | 423   | 42,94 |
|            | 13:45  | 92,800 | 39,600  | 410,000 | 92,400 | 32,8 | 408   | 42,94 |
|            | 14:00  | 90,000 | 39,200  | 410,000 | 88,800 | 32   | 408   | 42,94 |
|            | 14:15  | 86,400 | 38,800  | 418,000 | 86,000 | 31,6 | 416   | 42,94 |
|            | 14:30  | 83,600 | 38,800  | 410,000 | 82,800 | 30,4 | 408   | 42,94 |
|            | 14:45  | 88,400 | 38,800  | 410,000 | 88,000 | 31,6 | 408   | 42,94 |
|            | 15:00  | 90,800 | 38,800  | 425,000 | 90,000 | 31,6 | 423   | 42,94 |
|            | 15:15  | 95,200 | 38,400  | 402,000 | 94,400 | 32   | 400   | 42,94 |
|            | 15:30  | 91,600 | 38,800  | 410,000 | 91,200 | 31,6 | 408   | 42,94 |
|            | 15:45  | 92,400 | 38,400  | 425,000 | 91,600 | 31,6 | 423   | 42,94 |
|            | 16:00  | 90,000 | 38,000  | 410,000 | 89,200 | 30,8 | 408   | 42,94 |
|            | 16:15  | 88,400 | 37,200  | 418,000 | 87,600 | 29,2 | 416   | 42,94 |
|            | 16:30  | 85,600 | 36,400  | 410,000 | 85,200 | 28,4 | 408   | 42,94 |
|            | 16:45  | 84,000 | 36,000  | 425,000 | 83,600 | 27,6 | 423   | 42,94 |
|            | 17:00  | 96,800 | 35,600  | 410,000 | 96,000 | 29,2 | 408   | 42,94 |
|            | 17:15  | 92,400 | 34,800  | 418,000 | 91,600 | 27,6 | 416   | 42,94 |
|            | 17:30  | 81,600 | 35,600  | 410,000 | 81,200 | 26,8 | 408   | 42,94 |
|            | 17:45  | 80,800 | 36,000  | 425,000 | 80,400 | 27,2 | 423   | 42,94 |
|            | 18:00  | 82,800 | 36,400  | 402,000 | 82,000 | 27,6 | 400   | 42,94 |
|            | 18:15  | 68,400 | 34,000  | 425,000 | 68,000 | 24   | 423   | 42,94 |
|            | 18:30  | 68,800 | 34,000  | 418,000 | 68,400 | 23,6 | 416   | 42,94 |
|            | 18:45  | 67,200 | 34,000  | 425,000 | 66,800 | 23,2 | 423   | 42,94 |
|            | 19:00  | 68,800 | 34,000  | 410,000 | 68,400 | 23,2 | 408   | 42,94 |
|            | 19:15  | 63,200 | 33,200  | 418,000 | 62,800 | 22,8 | 416   | 42,94 |
|            | 19:30  | 63,200 | 33,600  | 425,000 | 63,200 | 22,4 | 423   | 42,94 |
|            | 19:45  | 62,000 | 33,600  | 418,000 | 61,200 | 22   | 416   | 42,94 |
|            | 20:00  | 66,000 | 34,000  | 425,000 | 66,000 | 23,6 | 423   | 42,94 |
|            | 20:15  | 61,200 | 33,600  | 410,000 | 60,800 | 22,4 | 408   | 42,94 |
|            | 20:30  | 57,200 | 33,200  | 418,000 | 56,800 | 21,6 | 416   | 42,94 |
|            | 20:45  | 54,800 | 33,200  | 425,000 | 54,800 | 21,2 | 423   | 42,94 |
|            | 21:00  | 58,000 | 33,600  | 418,000 | 57,600 | 22,4 | 416   | 42,94 |
|            | 21:15  | 62,000 | 34,000  | 410,000 | 61,600 | 22,8 | 408   | 42,94 |
|            | 21:30  | 62,000 | 33,600  | 418,000 | 61,600 | 22,8 | 416   | 42,94 |
|            | 21:45  | 62,400 | 34,800  | 425,000 | 62,000 | 24   | 423   | 42,94 |
|            | 22:00  | 58,400 | 34,800  | 410,000 | 58,400 | 23,2 | 408   | 42,94 |
|            | 22:15  | 45,200 | 34,400  | 418,000 | 44,800 | 22,4 | 416   | 42,94 |
|            | 22:30  | 55,600 | 36,400  | 425,000 | 55,600 | 24,8 | 423   | 42,94 |
|            | 22:45  | 54,400 | 36,400  | 410,000 | 54,000 | 24,8 | 408   | 42,94 |
|            | 23:00  | 49,600 | 35,600  | 418,000 | 49,600 | 23,6 | 416   | 42,94 |
|            | 23:15  | 52,400 | 35,600  | 425,000 | 52,000 | 24   | 423   | 42,94 |
|            | 23:30  | 44,400 | 34,000  | 418,000 | 44,000 | 21,6 | 416   | 42,94 |
|            | 23:45  | 48,400 | 34,400  | 410,000 | 48,400 | 22,4 | 408   | 42,94 |
|            | 0:00   | 45,200 | 33,200  | 418,000 | 45,200 | 20,8 | 416   | 42,94 |
| 10.7.2015. | 0:15   | 41,600 | 32,000  | 425,000 | 41,200 | 18,8 | 423   | 54,31 |
|            | 0:30   | 37,600 | 31,600  | 418,000 | 37,600 | 18,8 | 416   | 54,31 |
|            | 0:45   | 35,200 | 30,800  | 425,000 | 34,800 | 17,2 | 423   | 54,31 |
|            | 1:00   | 32,800 | 30,400  | 418,000 | 32,800 | 17,2 | 416   | 54,31 |
|            | 1:15   | 32,800 | 30,400  | 425,000 | 32,800 | 17,2 | 423   | 54,31 |
|            | 1:30   | 36,000 | 31,600  | 410,000 | 35,600 | 18   | 408   | 54,31 |
|            | 1:45   | 42,400 | 31,200  | 418,000 | 42,400 | 18,4 | 416   | 54,31 |
|            | 2:00   | 40,800 | 30,800  | 425,000 | 40,800 | 17,6 | 423   | 54,31 |
| 2:15       | 33,200 | 29,200 | 418,000 | 32,800  | 16     | 416  | 54,31 |       |

|       |        |        |         |        |      |     |       |
|-------|--------|--------|---------|--------|------|-----|-------|
| 2:30  | 32,400 | 29,200 | 425,000 | 32,800 | 15,2 | 423 | 54,31 |
| 2:45  | 33,200 | 28,400 | 433,000 | 32,800 | 15,2 | 431 | 54,31 |
| 3:00  | 34,000 | 28,800 | 418,000 | 34,000 | 15,2 | 416 | 54,31 |
| 3:15  | 37,200 | 29,200 | 425,000 | 37,200 | 15,6 | 423 | 54,31 |
| 3:30  | 34,000 | 28,400 | 418,000 | 34,000 | 14,8 | 416 | 54,31 |
| 3:45  | 38,400 | 28,800 | 418,000 | 38,000 | 15,2 | 416 | 54,31 |
| 4:00  | 40,800 | 29,200 | 425,000 | 40,400 | 16,4 | 423 | 54,31 |
| 4:15  | 40,800 | 28,800 | 418,000 | 41,200 | 15,2 | 416 | 54,31 |
| 4:30  | 44,800 | 28,800 | 425,000 | 44,000 | 16   | 423 | 54,31 |
| 4:45  | 48,400 | 28,800 | 418,000 | 48,400 | 16   | 416 | 54,31 |
| 5:00  | 45,200 | 28,800 | 425,000 | 45,200 | 15,6 | 423 | 54,31 |
| 5:15  | 48,800 | 29,200 | 433,000 | 48,400 | 16,4 | 431 | 54,31 |
| 5:30  | 46,800 | 28,400 | 418,000 | 46,800 | 15,6 | 416 | 54,31 |
| 5:45  | 47,200 | 28,400 | 425,000 | 46,800 | 15,2 | 423 | 54,31 |
| 6:00  | 42,400 | 27,600 | 418,000 | 42,400 | 14,4 | 416 | 54,31 |
| 6:15  | 53,200 | 27,600 | 425,000 | 53,200 | 15,2 | 423 | 54,31 |
| 6:30  | 54,000 | 28,000 | 418,000 | 53,600 | 15,6 | 416 | 54,31 |
| 6:45  | 72,800 | 30,400 | 425,000 | 72,000 | 19,6 | 423 | 54,31 |
| 7:00  | 69,200 | 30,400 | 418,000 | 69,200 | 19,6 | 416 | 54,31 |
| 7:15  | 67,600 | 30,400 | 425,000 | 67,200 | 19,6 | 423 | 54,31 |
| 7:30  | 64,000 | 31,200 | 418,000 | 63,600 | 20   | 416 | 54,31 |
| 7:45  | 66,800 | 32,000 | 418,000 | 66,400 | 21,6 | 416 | 54,31 |
| 8:00  | 60,000 | 32,000 | 425,000 | 60,000 | 20,4 | 423 | 54,31 |
| 8:15  | 67,600 | 33,600 | 418,000 | 66,800 | 22,8 | 416 | 54,31 |
| 8:30  | 60,400 | 33,200 | 410,000 | 60,400 | 22,4 | 408 | 54,31 |
| 8:45  | 60,000 | 34,000 | 425,000 | 59,600 | 22,4 | 423 | 54,31 |
| 9:00  | 61,600 | 34,000 | 418,000 | 61,200 | 23,2 | 416 | 54,31 |
| 9:15  | 71,200 | 35,600 | 410,000 | 70,800 | 25,6 | 408 | 54,31 |
| 9:30  | 71,200 | 34,400 | 425,000 | 70,800 | 24,4 | 423 | 54,31 |
| 9:45  | 68,000 | 33,600 | 410,000 | 67,600 | 23,6 | 408 | 54,31 |
| 10:00 | 68,000 | 34,000 | 418,000 | 67,600 | 23,6 | 416 | 54,31 |
| 10:15 | 67,600 | 35,200 | 410,000 | 67,200 | 24,8 | 408 | 54,31 |
| 10:30 | 61,200 | 34,400 | 418,000 | 61,200 | 23,2 | 416 | 54,31 |
| 10:45 | 64,800 | 35,200 | 425,000 | 64,000 | 24,8 | 423 | 54,31 |
| 11:00 | 63,600 | 35,200 | 410,000 | 63,200 | 24,4 | 408 | 54,31 |
| 11:15 | 63,200 | 34,800 | 418,000 | 63,200 | 24   | 416 | 54,31 |
| 11:30 | 64,400 | 34,400 | 410,000 | 64,000 | 24   | 408 | 54,31 |
| 11:45 | 62,400 | 34,800 | 425,000 | 62,000 | 24   | 423 | 54,31 |
| 12:00 | 62,800 | 34,800 | 418,000 | 62,400 | 24   | 416 | 54,31 |
| 12:15 | 56,800 | 34,400 | 410,000 | 56,400 | 22,8 | 408 | 54,31 |
| 12:30 | 54,400 | 34,400 | 425,000 | 54,000 | 23,2 | 423 | 54,31 |
| 12:45 | 57,600 | 35,200 | 410,000 | 57,600 | 23,6 | 408 | 54,31 |
| 13:00 | 56,000 | 34,800 | 418,000 | 56,000 | 24   | 416 | 54,31 |
| 13:15 | 60,800 | 35,200 | 410,000 | 60,400 | 24   | 408 | 54,31 |
| 13:30 | 58,800 | 34,400 | 418,000 | 58,000 | 23,6 | 416 | 54,31 |
| 13:45 | 60,400 | 35,200 | 410,000 | 60,400 | 24   | 408 | 54,31 |
| 14:00 | 57,200 | 34,000 | 425,000 | 56,800 | 22,8 | 423 | 54,31 |
| 14:15 | 57,200 | 34,400 | 410,000 | 56,800 | 22,8 | 408 | 54,31 |
| 14:30 | 59,600 | 34,400 | 418,000 | 59,600 | 23,6 | 416 | 54,31 |
| 14:45 | 58,400 | 34,400 | 410,000 | 58,000 | 23,2 | 408 | 54,31 |
| 15:00 | 58,000 | 34,400 | 425,000 | 57,600 | 23,2 | 423 | 54,31 |
| 15:15 | 58,400 | 34,800 | 418,000 | 58,000 | 23,6 | 416 | 54,31 |
| 15:30 | 55,600 | 34,800 | 410,000 | 55,600 | 23,2 | 408 | 54,31 |
| 15:45 | 62,000 | 35,200 | 425,000 | 61,600 | 24,4 | 423 | 54,31 |
| 16:00 | 62,000 | 35,600 | 418,000 | 61,200 | 24,4 | 416 | 54,31 |
| 16:15 | 62,000 | 36,000 | 410,000 | 62,000 | 24,8 | 408 | 54,31 |
| 16:30 | 60,400 | 35,200 | 418,000 | 60,000 | 24   | 416 | 54,31 |
| 16:45 | 60,800 | 34,800 | 425,000 | 60,800 | 24   | 423 | 54,31 |
| 17:00 | 61,200 | 35,600 | 410,000 | 60,800 | 24,4 | 408 | 54,31 |
| 17:15 | 53,200 | 34,400 | 418,000 | 53,200 | 22,8 | 416 | 54,31 |
| 17:30 | 58,800 | 35,200 | 425,000 | 58,400 | 23,6 | 423 | 54,31 |
| 17:45 | 64,400 | 34,800 | 418,000 | 63,600 | 23,6 | 416 | 54,31 |
| 18:00 | 57,600 | 33,200 | 425,000 | 57,600 | 22   | 423 | 54,31 |
| 18:15 | 58,800 | 32,400 | 410,000 | 58,400 | 20,8 | 408 | 54,31 |
| 18:30 | 62,000 | 33,200 | 418,000 | 62,000 | 22,4 | 416 | 54,31 |
| 18:45 | 59,200 | 32,800 | 425,000 | 58,800 | 20,8 | 423 | 54,31 |
| 19:00 | 63,600 | 33,200 | 418,000 | 63,200 | 22,4 | 416 | 54,31 |
| 19:15 | 52,400 | 31,600 | 418,000 | 52,000 | 19,6 | 416 | 54,31 |
| 19:30 | 48,800 | 30,400 | 410,000 | 48,800 | 18   | 408 | 54,31 |
| 19:45 | 48,800 | 30,400 | 425,000 | 48,400 | 18   | 423 | 54,31 |
| 20:00 | 44,800 | 30,000 | 418,000 | 44,800 | 17,6 | 416 | 54,31 |
| 20:15 | 42,800 | 30,800 | 425,000 | 42,400 | 17,6 | 423 | 54,31 |
| 20:30 | 34,000 | 29,600 | 418,000 | 34,400 | 16,4 | 416 | 54,31 |
| 20:45 | 35,200 | 30,400 | 410,000 | 34,800 | 16,8 | 408 | 54,31 |
| 21:00 | 37,200 | 30,800 | 425,000 | 36,800 | 18   | 423 | 54,31 |
| 21:15 | 42,400 | 32,000 | 418,000 | 42,400 | 19,6 | 416 | 54,31 |
| 21:30 | 38,400 | 30,800 | 425,000 | 38,400 | 18   | 423 | 54,31 |
| 21:45 | 40,400 | 31,600 | 410,000 | 40,400 | 18,4 | 408 | 54,31 |
| 22:00 | 41,200 | 31,600 | 418,000 | 40,800 | 19,2 | 416 | 54,31 |
| 22:15 | 35,200 | 32,800 | 410,000 | 35,600 | 20   | 408 | 54,31 |

|            |        |        |         |         |        |      |       |       |
|------------|--------|--------|---------|---------|--------|------|-------|-------|
|            | 22:30  | 39,600 | 34,400  | 418,000 | 39,200 | 22   | 416   | 54,31 |
|            | 22:45  | 44,000 | 34,800  | 425,000 | 43,600 | 22,4 | 423   | 54,31 |
|            | 23:00  | 40,800 | 34,400  | 410,000 | 40,800 | 21,6 | 408   | 54,31 |
|            | 23:15  | 46,800 | 34,800  | 418,000 | 46,400 | 22,8 | 416   | 54,31 |
|            | 23:30  | 33,200 | 33,600  | 410,000 | 33,200 | 20,4 | 408   | 54,31 |
|            | 23:45  | 36,000 | 33,600  | 425,000 | 36,000 | 21,2 | 423   | 54,31 |
|            | 0:00   | 37,200 | 33,200  | 418,000 | 37,200 | 20   | 416   | 54,31 |
| 11.7.2015. | 0:15   | 39,200 | 32,400  | 425,000 | 38,800 | 19,6 | 423   | 39,21 |
|            | 0:30   | 32,800 | 31,600  | 418,000 | 32,800 | 18,4 | 416   | 39,21 |
|            | 0:45   | 28,800 | 32,400  | 410,000 | 28,400 | 19,2 | 408   | 39,21 |
|            | 1:00   | 27,200 | 32,400  | 425,000 | 27,200 | 18,4 | 423   | 39,21 |
|            | 1:15   | 29,200 | 32,400  | 418,000 | 29,600 | 19,2 | 416   | 39,21 |
|            | 1:30   | 34,400 | 33,600  | 418,000 | 34,000 | 20,4 | 416   | 39,21 |
|            | 1:45   | 46,000 | 35,200  | 425,000 | 45,600 | 22,4 | 423   | 39,21 |
|            | 2:00   | 36,800 | 32,000  | 418,000 | 36,800 | 19,2 | 416   | 39,21 |
|            | 2:15   | 32,000 | 31,200  | 425,000 | 32,000 | 17,6 | 423   | 39,21 |
|            | 2:30   | 18,400 | 29,600  | 418,000 | 18,400 | 16   | 416   | 39,21 |
|            | 2:45   | 23,600 | 29,200  | 425,000 | 23,200 | 15,2 | 423   | 39,21 |
|            | 3:00   | 21,600 | 28,400  | 418,000 | 21,600 | 14   | 416   | 39,21 |
|            | 3:15   | 24,000 | 27,200  | 425,000 | 24,000 | 13,6 | 423   | 39,21 |
|            | 3:30   | 21,600 | 27,600  | 418,000 | 22,000 | 13,2 | 416   | 39,21 |
|            | 3:45   | 23,200 | 27,200  | 425,000 | 22,800 | 13,6 | 423   | 39,21 |
|            | 4:00   | 26,400 | 28,400  | 418,000 | 26,400 | 14,4 | 416   | 39,21 |
|            | 4:15   | 31,600 | 29,200  | 425,000 | 31,600 | 15,2 | 423   | 39,21 |
|            | 4:30   | 33,600 | 28,400  | 418,000 | 33,200 | 14,8 | 416   | 39,21 |
|            | 4:45   | 34,400 | 28,800  | 418,000 | 34,400 | 15,2 | 416   | 39,21 |
|            | 5:00   | 43,200 | 29,600  | 425,000 | 43,200 | 16,4 | 423   | 39,21 |
|            | 5:15   | 44,400 | 30,000  | 433,000 | 44,000 | 17,2 | 431   | 39,21 |
|            | 5:30   | 44,800 | 30,800  | 418,000 | 44,800 | 17,6 | 416   | 39,21 |
|            | 5:45   | 36,400 | 28,800  | 425,000 | 36,000 | 14,8 | 423   | 39,21 |
|            | 6:00   | 43,200 | 28,800  | 433,000 | 43,200 | 15,2 | 431   | 39,21 |
|            | 6:15   | 45,600 | 27,200  | 418,000 | 45,600 | 14,4 | 416   | 39,21 |
|            | 6:30   | 39,200 | 27,200  | 425,000 | 39,200 | 13,6 | 423   | 39,21 |
|            | 6:45   | 51,200 | 28,000  | 418,000 | 50,400 | 15,2 | 416   | 39,21 |
|            | 7:00   | 48,800 | 27,200  | 433,000 | 49,200 | 14,4 | 431   | 39,21 |
|            | 7:15   | 46,400 | 27,200  | 425,000 | 46,400 | 14,4 | 423   | 39,21 |
|            | 7:30   | 42,800 | 28,000  | 418,000 | 42,000 | 14,8 | 416   | 39,21 |
|            | 7:45   | 35,600 | 28,000  | 425,000 | 35,600 | 14,4 | 423   | 39,21 |
|            | 8:00   | 43,200 | 28,800  | 418,000 | 43,200 | 16   | 416   | 39,21 |
|            | 8:15   | 64,000 | 31,600  | 425,000 | 64,000 | 20,4 | 423   | 39,21 |
|            | 8:30   | 53,600 | 31,200  | 410,000 | 52,800 | 19,2 | 408   | 39,21 |
|            | 8:45   | 52,000 | 31,200  | 418,000 | 52,000 | 18,8 | 416   | 39,21 |
|            | 9:00   | 49,600 | 30,800  | 418,000 | 49,200 | 18,4 | 416   | 39,21 |
|            | 9:15   | 64,000 | 31,600  | 425,000 | 64,000 | 20,8 | 423   | 39,21 |
|            | 9:30   | 58,800 | 31,200  | 418,000 | 58,000 | 19,6 | 416   | 39,21 |
|            | 9:45   | 52,400 | 31,200  | 410,000 | 52,400 | 19,2 | 408   | 39,21 |
|            | 10:00  | 56,000 | 31,600  | 425,000 | 55,600 | 19,6 | 423   | 39,21 |
|            | 10:15  | 59,200 | 31,600  | 418,000 | 59,200 | 20,4 | 416   | 39,21 |
|            | 10:30  | 60,400 | 32,000  | 425,000 | 60,000 | 20,4 | 423   | 39,21 |
|            | 10:45  | 58,400 | 32,000  | 410,000 | 58,000 | 20,4 | 408   | 39,21 |
|            | 11:00  | 57,200 | 32,000  | 418,000 | 56,800 | 20,8 | 416   | 39,21 |
|            | 11:15  | 58,400 | 32,400  | 425,000 | 58,000 | 20,8 | 423   | 39,21 |
|            | 11:30  | 65,600 | 33,600  | 410,000 | 65,600 | 23,2 | 408   | 39,21 |
|            | 11:45  | 58,000 | 33,200  | 418,000 | 58,000 | 21,6 | 416   | 39,21 |
|            | 12:00  | 60,800 | 33,200  | 418,000 | 60,400 | 22   | 416   | 39,21 |
| 12:15      | 63,200 | 34,000 | 410,000 | 62,400  | 23,2   | 408  | 39,21 |       |
| 12:30      | 60,800 | 33,600 | 425,000 | 60,800  | 22,8   | 423  | 39,21 |       |
| 12:45      | 56,800 | 33,600 | 410,000 | 56,400  | 22     | 408  | 39,21 |       |
| 13:00      | 54,800 | 33,200 | 418,000 | 54,400  | 21,6   | 416  | 39,21 |       |
| 13:15      | 52,400 | 33,200 | 425,000 | 52,400  | 21,2   | 423  | 39,21 |       |
| 13:30      | 48,000 | 32,400 | 410,000 | 47,600  | 20     | 408  | 39,21 |       |
| 13:45      | 50,400 | 32,800 | 418,000 | 50,400  | 20,8   | 416  | 39,21 |       |
| 14:00      | 48,000 | 32,400 | 425,000 | 47,600  | 20     | 423  | 39,21 |       |
| 14:15      | 58,800 | 33,200 | 418,000 | 58,400  | 22     | 416  | 39,21 |       |
| 14:30      | 56,800 | 33,200 | 410,000 | 56,800  | 21,6   | 408  | 39,21 |       |
| 14:45      | 56,800 | 33,200 | 418,000 | 56,400  | 21,6   | 416  | 39,21 |       |
| 15:00      | 54,800 | 32,400 | 425,000 | 54,400  | 20,8   | 423  | 39,21 |       |
| 15:15      | 66,000 | 33,600 | 410,000 | 66,000  | 22,4   | 408  | 39,21 |       |
| 15:30      | 64,400 | 33,200 | 418,000 | 63,600  | 22,4   | 416  | 39,21 |       |
| 15:45      | 58,800 | 32,800 | 425,000 | 58,800  | 21,2   | 423  | 39,21 |       |
| 16:00      | 58,400 | 32,800 | 418,000 | 58,000  | 21,2   | 416  | 39,21 |       |
| 16:15      | 55,200 | 32,800 | 410,000 | 55,200  | 21,2   | 408  | 39,21 |       |
| 16:30      | 48,000 | 32,000 | 425,000 | 47,600  | 19,6   | 423  | 39,21 |       |
| 16:45      | 46,000 | 31,600 | 418,000 | 46,000  | 19,2   | 416  | 39,21 |       |
| 17:00      | 49,200 | 32,000 | 425,000 | 48,800  | 19,6   | 423  | 39,21 |       |
| 17:15      | 56,000 | 31,200 | 418,000 | 56,000  | 19,2   | 416  | 39,21 |       |
| 17:30      | 58,000 | 31,200 | 410,000 | 57,200  | 20     | 408  | 39,21 |       |
| 17:45      | 58,400 | 31,600 | 425,000 | 58,400  | 19,6   | 423  | 39,21 |       |
| 18:00      | 62,000 | 28,000 | 418,000 | 61,600  | 16,4   | 416  | 39,21 |       |
| 18:15      | 45,600 | 25,200 | 410,000 | 45,600  | 12,8   | 408  | 39,21 |       |

|            |        |        |         |         |        |      |       |       |
|------------|--------|--------|---------|---------|--------|------|-------|-------|
|            | 18:30  | 57,600 | 26,400  | 418,000 | 57,200 | 14,8 | 416   | 39,21 |
|            | 18:45  | 54,800 | 26,000  | 425,000 | 54,400 | 14   | 423   | 39,21 |
|            | 19:00  | 52,400 | 25,600  | 410,000 | 52,400 | 13,2 | 408   | 39,21 |
|            | 19:15  | 53,600 | 25,600  | 418,000 | 53,200 | 13,6 | 416   | 39,21 |
|            | 19:30  | 52,400 | 25,600  | 410,000 | 52,400 | 13,6 | 408   | 39,21 |
|            | 19:45  | 51,200 | 25,600  | 425,000 | 51,200 | 13,2 | 423   | 39,21 |
|            | 20:00  | 42,800 | 24,000  | 418,000 | 42,400 | 11,2 | 416   | 39,21 |
|            | 20:15  | 36,800 | 22,800  | 410,000 | 36,800 | 9,2  | 408   | 39,21 |
|            | 20:30  | 38,000 | 22,400  | 425,000 | 38,000 | 9,6  | 423   | 39,21 |
|            | 20:45  | 36,000 | 23,200  | 418,000 | 35,600 | 9,6  | 416   | 39,21 |
|            | 21:00  | 36,000 | 22,800  | 410,000 | 36,000 | 9,6  | 408   | 39,21 |
|            | 21:15  | 42,000 | 26,800  | 418,000 | 42,000 | 13,6 | 416   | 39,21 |
|            | 21:30  | 45,600 | 28,000  | 410,000 | 45,200 | 16   | 408   | 39,21 |
|            | 21:45  | 41,600 | 29,200  | 425,000 | 41,600 | 16,4 | 423   | 39,21 |
|            | 22:00  | 36,800 | 29,600  | 410,000 | 36,800 | 16,8 | 408   | 39,21 |
|            | 22:15  | 18,800 | 27,200  | 418,000 | 18,800 | 13,6 | 416   | 39,21 |
|            | 22:30  | 23,600 | 28,000  | 410,000 | 23,200 | 14,4 | 408   | 39,21 |
|            | 22:45  | 26,800 | 28,000  | 425,000 | 26,800 | 14,8 | 423   | 39,21 |
|            | 23:00  | 31,600 | 27,600  | 410,000 | 31,600 | 14,4 | 408   | 39,21 |
|            | 23:15  | 34,000 | 28,000  | 418,000 | 34,000 | 14,8 | 416   | 39,21 |
|            | 23:30  | 30,000 | 27,600  | 410,000 | 29,600 | 14   | 408   | 39,21 |
|            | 23:45  | 28,000 | 26,800  | 418,000 | 28,400 | 13,6 | 416   | 39,21 |
|            | 0:00   | 28,800 | 26,000  | 410,000 | 28,800 | 12,4 | 408   | 39,21 |
| 12.7.2015. | 0:15   | 26,800 | 25,600  | 425,000 | 26,400 | 12   | 423   | 40,66 |
|            | 0:30   | 27,600 | 24,800  | 418,000 | 27,600 | 11,2 | 416   | 40,66 |
|            | 0:45   | 23,200 | 24,000  | 410,000 | 23,200 | 10   | 408   | 40,66 |
|            | 1:00   | 20,000 | 21,600  | 425,000 | 20,000 | 7,2  | 423   | 40,66 |
|            | 1:15   | 30,800 | 21,200  | 418,000 | 30,800 | 7,6  | 416   | 40,66 |
|            | 1:30   | 23,200 | 20,800  | 425,000 | 23,200 | 6,8  | 423   | 40,66 |
|            | 1:45   | 26,000 | 21,200  | 418,000 | 25,600 | 7,2  | 416   | 40,66 |
|            | 2:00   | 24,800 | 21,200  | 410,000 | 24,800 | 7,2  | 408   | 40,66 |
|            | 2:15   | 36,000 | 21,600  | 425,000 | 36,400 | 8    | 423   | 40,66 |
|            | 2:30   | 37,600 | 20,400  | 418,000 | 37,200 | 6,8  | 416   | 40,66 |
|            | 2:45   | 34,400 | 19,200  | 418,000 | 34,400 | 5,6  | 416   | 40,66 |
|            | 3:00   | 31,600 | 19,600  | 425,000 | 31,600 | 5,6  | 423   | 40,66 |
|            | 3:15   | 28,000 | 18,000  | 418,000 | 28,000 | 4,4  | 416   | 40,66 |
|            | 3:30   | 28,400 | 18,800  | 410,000 | 28,000 | 4,4  | 408   | 40,66 |
|            | 3:45   | 28,000 | 17,600  | 425,000 | 28,000 | 3,6  | 423   | 40,66 |
|            | 4:00   | 26,400 | 17,600  | 418,000 | 26,400 | 3,6  | 416   | 40,66 |
|            | 4:15   | 32,800 | 17,600  | 425,000 | 32,800 | 3,6  | 423   | 40,66 |
|            | 4:30   | 37,200 | 17,200  | 418,000 | 37,200 | 3,2  | 416   | 40,66 |
|            | 4:45   | 35,600 | 17,600  | 425,000 | 35,200 | 3,6  | 423   | 40,66 |
|            | 5:00   | 38,000 | 18,400  | 418,000 | 38,000 | 4,8  | 416   | 40,66 |
|            | 5:15   | 41,200 | 19,600  | 433,000 | 41,200 | 5,6  | 431   | 40,66 |
|            | 5:30   | 39,600 | 22,000  | 425,000 | 39,200 | 8    | 423   | 40,66 |
|            | 5:45   | 37,200 | 22,400  | 433,000 | 37,600 | 8,4  | 431   | 40,66 |
|            | 6:00   | 37,600 | 22,000  | 418,000 | 37,200 | 8    | 416   | 40,66 |
|            | 6:15   | 34,800 | 19,600  | 433,000 | 34,800 | 5,2  | 431   | 40,66 |
|            | 6:30   | 34,000 | 18,800  | 418,000 | 33,600 | 4,8  | 416   | 40,66 |
|            | 6:45   | 31,200 | 18,400  | 433,000 | 31,200 | 3,6  | 431   | 40,66 |
|            | 7:00   | 42,400 | 18,400  | 425,000 | 42,400 | 4,8  | 423   | 40,66 |
|            | 7:15   | 44,400 | 18,800  | 418,000 | 44,400 | 5,2  | 416   | 40,66 |
|            | 7:30   | 44,000 | 19,200  | 433,000 | 43,600 | 5,6  | 431   | 40,66 |
|            | 7:45   | 45,600 | 20,400  | 425,000 | 45,600 | 7,2  | 423   | 40,66 |
|            | 8:00   | 41,200 | 19,200  | 418,000 | 41,200 | 5,2  | 416   | 40,66 |
|            | 8:15   | 54,000 | 20,400  | 425,000 | 53,600 | 7,6  | 423   | 40,66 |
|            | 8:30   | 50,400 | 19,600  | 433,000 | 50,400 | 6,8  | 431   | 40,66 |
|            | 8:45   | 50,800 | 22,000  | 418,000 | 50,400 | 8,4  | 416   | 40,66 |
|            | 9:00   | 50,000 | 21,200  | 425,000 | 49,600 | 8,4  | 423   | 40,66 |
|            | 9:15   | 54,400 | 22,000  | 418,000 | 54,400 | 9,2  | 416   | 40,66 |
|            | 9:30   | 51,200 | 22,000  | 433,000 | 51,200 | 8,8  | 431   | 40,66 |
|            | 9:45   | 49,200 | 21,200  | 425,000 | 48,800 | 8    | 423   | 40,66 |
|            | 10:00  | 49,600 | 21,200  | 418,000 | 49,600 | 8,4  | 416   | 40,66 |
|            | 10:15  | 55,200 | 20,800  | 425,000 | 55,200 | 8,4  | 423   | 40,66 |
|            | 10:30  | 46,400 | 20,400  | 418,000 | 46,000 | 6,8  | 416   | 40,66 |
| 10:45      | 45,600 | 20,000 | 425,000 | 45,200  | 6,8    | 423  | 40,66 |       |
| 11:00      | 48,400 | 20,400 | 418,000 | 48,400  | 7,6    | 416  | 40,66 |       |
| 11:15      | 48,400 | 21,200 | 418,000 | 48,000  | 8,4    | 416  | 40,66 |       |
| 11:30      | 52,800 | 22,800 | 425,000 | 52,800  | 9,6    | 423  | 40,66 |       |
| 11:45      | 51,600 | 22,800 | 418,000 | 51,600  | 10     | 416  | 40,66 |       |
| 12:00      | 49,200 | 23,200 | 425,000 | 48,800  | 10,4   | 423  | 40,66 |       |
| 12:15      | 52,800 | 23,600 | 418,000 | 52,400  | 10,8   | 416  | 40,66 |       |
| 12:30      | 51,200 | 24,000 | 425,000 | 51,200  | 11,2   | 423  | 40,66 |       |
| 12:45      | 50,800 | 23,200 | 418,000 | 50,400  | 10,4   | 416  | 40,66 |       |
| 13:00      | 50,800 | 23,600 | 425,000 | 50,800  | 10,8   | 423  | 40,66 |       |
| 13:15      | 46,800 | 24,000 | 418,000 | 46,800  | 10,8   | 416  | 40,66 |       |
| 13:30      | 46,000 | 22,800 | 425,000 | 45,600  | 9,6    | 423  | 40,66 |       |
| 13:45      | 46,400 | 21,200 | 418,000 | 46,400  | 8,4    | 416  | 40,66 |       |
| 14:00      | 45,200 | 21,600 | 425,000 | 44,800  | 8      | 423  | 40,66 |       |
| 14:15      | 48,800 | 21,200 | 418,000 | 48,800  | 8      | 416  | 40,66 |       |



|            |       |         |        |         |         |      |     |       |
|------------|-------|---------|--------|---------|---------|------|-----|-------|
|            | 14:30 | 44,800  | 20,800 | 433,000 | 44,800  | 8    | 431 | 40,66 |
|            | 14:45 | 47,200  | 21,600 | 418,000 | 46,800  | 8    | 416 | 40,66 |
|            | 15:00 | 49,200  | 21,200 | 425,000 | 49,200  | 8    | 423 | 40,66 |
|            | 15:15 | 45,200  | 20,800 | 418,000 | 44,800  | 7,6  | 416 | 40,66 |
|            | 15:30 | 41,200  | 20,800 | 425,000 | 41,200  | 7,2  | 423 | 40,66 |
|            | 15:45 | 49,200  | 21,600 | 418,000 | 48,800  | 8,4  | 416 | 40,66 |
|            | 16:00 | 48,800  | 21,200 | 425,000 | 48,800  | 8,4  | 423 | 40,66 |
|            | 16:15 | 48,000  | 22,400 | 418,000 | 48,000  | 9,2  | 416 | 40,66 |
|            | 16:30 | 44,000  | 21,200 | 425,000 | 43,600  | 7,6  | 423 | 40,66 |
|            | 16:45 | 44,000  | 21,200 | 418,000 | 44,000  | 8,4  | 416 | 40,66 |
|            | 17:00 | 45,200  | 21,600 | 425,000 | 45,200  | 8    | 423 | 40,66 |
|            | 17:15 | 35,600  | 20,000 | 418,000 | 35,200  | 6    | 416 | 40,66 |
|            | 17:30 | 38,000  | 20,000 | 433,000 | 38,000  | 6,4  | 431 | 40,66 |
|            | 17:45 | 41,600  | 20,400 | 425,000 | 41,600  | 6,8  | 423 | 40,66 |
|            | 18:00 | 43,200  | 20,000 | 418,000 | 42,800  | 6,8  | 416 | 40,66 |
|            | 18:15 | 28,800  | 18,800 | 425,000 | 29,200  | 4,4  | 423 | 40,66 |
|            | 18:30 | 37,600  | 19,600 | 418,000 | 37,200  | 5,6  | 416 | 40,66 |
|            | 18:45 | 39,600  | 19,200 | 418,000 | 39,600  | 6    | 416 | 40,66 |
|            | 19:00 | 28,800  | 18,000 | 425,000 | 28,800  | 3,6  | 423 | 40,66 |
|            | 19:15 | 26,800  | 17,200 | 418,000 | 26,400  | 2,8  | 416 | 40,66 |
|            | 19:30 | 30,000  | 17,600 | 425,000 | 30,400  | 3,6  | 423 | 40,66 |
|            | 19:45 | 28,400  | 18,800 | 418,000 | 28,400  | 4,4  | 416 | 40,66 |
|            | 20:00 | 30,400  | 18,800 | 425,000 | 30,000  | 4,8  | 423 | 40,66 |
|            | 20:15 | 33,600  | 19,600 | 418,000 | 33,600  | 5,6  | 416 | 40,66 |
|            | 20:30 | 29,600  | 18,400 | 425,000 | 29,600  | 4,4  | 423 | 40,66 |
|            | 20:45 | 33,200  | 20,000 | 418,000 | 33,200  | 6    | 416 | 40,66 |
|            | 21:00 | 34,800  | 19,600 | 425,000 | 34,800  | 5,6  | 423 | 40,66 |
|            | 21:15 | 35,200  | 19,600 | 410,000 | 34,800  | 6    | 408 | 40,66 |
|            | 21:30 | 36,400  | 20,000 | 418,000 | 36,400  | 6,4  | 416 | 40,66 |
|            | 21:45 | 38,400  | 23,600 | 425,000 | 38,400  | 10,8 | 423 | 40,66 |
|            | 22:00 | 37,200  | 25,200 | 418,000 | 37,200  | 11,6 | 416 | 40,66 |
|            | 22:15 | 32,000  | 24,400 | 410,000 | 32,000  | 11,2 | 408 | 40,66 |
|            | 22:30 | 40,000  | 25,200 | 418,000 | 39,600  | 12   | 416 | 40,66 |
|            | 22:45 | 44,000  | 25,600 | 425,000 | 44,000  | 12,8 | 423 | 40,66 |
|            | 23:00 | 37,600  | 24,800 | 410,000 | 37,200  | 11,6 | 408 | 40,66 |
|            | 23:15 | 36,000  | 24,400 | 418,000 | 36,000  | 11,2 | 416 | 40,66 |
|            | 23:30 | 33,200  | 24,000 | 425,000 | 33,200  | 10,4 | 423 | 40,66 |
|            | 23:45 | 35,200  | 24,800 | 410,000 | 34,800  | 11,6 | 408 | 40,66 |
|            | 0:00  | 31,600  | 25,600 | 418,000 | 31,600  | 11,6 | 416 | 40,66 |
| 13.7.2015. | 0:15  | 39,600  | 24,800 | 425,000 | 39,600  | 11,6 | 423 | 43,87 |
|            | 0:30  | 32,800  | 23,600 | 418,000 | 32,800  | 10   | 416 | 43,87 |
|            | 0:45  | 38,000  | 24,000 | 425,000 | 38,000  | 10,8 | 423 | 43,87 |
|            | 1:00  | 36,400  | 23,600 | 418,000 | 36,400  | 10   | 416 | 43,87 |
|            | 1:15  | 36,400  | 23,600 | 410,000 | 36,400  | 10,4 | 408 | 43,87 |
|            | 1:30  | 37,200  | 23,200 | 418,000 | 36,800  | 9,6  | 416 | 43,87 |
|            | 1:45  | 43,600  | 22,800 | 425,000 | 43,600  | 9,6  | 423 | 43,87 |
|            | 2:00  | 41,600  | 22,400 | 418,000 | 41,200  | 8,8  | 416 | 43,87 |
|            | 2:15  | 38,800  | 20,400 | 425,000 | 38,800  | 7,2  | 423 | 43,87 |
|            | 2:30  | 35,600  | 20,400 | 418,000 | 35,200  | 6,4  | 416 | 43,87 |
|            | 2:45  | 34,000  | 18,800 | 425,000 | 34,400  | 5,2  | 423 | 43,87 |
|            | 3:00  | 30,400  | 18,400 | 418,000 | 30,400  | 4    | 416 | 43,87 |
|            | 3:15  | 36,800  | 18,400 | 425,000 | 36,800  | 4,8  | 423 | 43,87 |
|            | 3:30  | 33,600  | 18,000 | 418,000 | 33,600  | 4    | 416 | 43,87 |
|            | 3:45  | 38,800  | 18,800 | 425,000 | 38,400  | 5,2  | 423 | 43,87 |
|            | 4:00  | 40,800  | 18,400 | 418,000 | 40,800  | 4,8  | 416 | 43,87 |
|            | 4:15  | 45,600  | 18,800 | 425,000 | 45,200  | 5,2  | 423 | 43,87 |
|            | 4:30  | 47,200  | 18,400 | 418,000 | 47,200  | 5,2  | 416 | 43,87 |
|            | 4:45  | 49,600  | 19,200 | 418,000 | 49,200  | 6,4  | 416 | 43,87 |
|            | 5:00  | 49,600  | 18,800 | 425,000 | 49,600  | 5,6  | 423 | 43,87 |
|            | 5:15  | 52,400  | 19,200 | 433,000 | 52,400  | 6    | 431 | 43,87 |
|            | 5:30  | 50,000  | 19,200 | 418,000 | 49,600  | 6    | 416 | 43,87 |
|            | 5:45  | 48,000  | 19,600 | 425,000 | 48,000  | 6,4  | 423 | 43,87 |
|            | 6:00  | 47,200  | 18,400 | 418,000 | 46,800  | 5,2  | 416 | 43,87 |
|            | 6:15  | 66,000  | 19,200 | 433,000 | 65,600  | 7,2  | 431 | 43,87 |
|            | 6:30  | 74,000  | 20,000 | 425,000 | 73,600  | 8,8  | 423 | 43,87 |
|            | 6:45  | 78,000  | 20,800 | 418,000 | 78,000  | 10,8 | 416 | 43,87 |
|            | 7:00  | 82,400  | 21,200 | 425,000 | 81,600  | 11,2 | 423 | 43,87 |
|            | 7:15  | 97,200  | 21,600 | 410,000 | 96,400  | 13,6 | 408 | 43,87 |
|            | 7:30  | 95,200  | 22,000 | 418,000 | 94,800  | 14,4 | 416 | 43,87 |
|            | 7:45  | 90,400  | 22,000 | 425,000 | 89,600  | 13,6 | 423 | 43,87 |
|            | 8:00  | 88,800  | 22,400 | 418,000 | 88,400  | 13,6 | 416 | 43,87 |
|            | 8:15  | 92,000  | 23,200 | 410,000 | 91,200  | 14,8 | 408 | 43,87 |
|            | 8:30  | 85,600  | 23,600 | 418,000 | 84,800  | 14,4 | 416 | 43,87 |
|            | 8:45  | 80,000  | 23,600 | 425,000 | 80,000  | 14,4 | 423 | 43,87 |
|            | 9:00  | 83,600  | 25,200 | 410,000 | 82,800  | 16   | 408 | 43,87 |
|            | 9:15  | 90,000  | 26,000 | 418,000 | 89,600  | 17,6 | 416 | 43,87 |
|            | 9:30  | 97,600  | 26,400 | 425,000 | 96,800  | 19,2 | 423 | 43,87 |
|            | 9:45  | 95,600  | 26,400 | 410,000 | 94,800  | 18,8 | 408 | 43,87 |
|            | 10:00 | 95,200  | 26,400 | 418,000 | 94,400  | 19,2 | 416 | 43,87 |
|            | 10:15 | 104,800 | 26,400 | 425,000 | 104,000 | 20   | 423 | 43,87 |

|            |       |         |        |         |         |      |     |       |
|------------|-------|---------|--------|---------|---------|------|-----|-------|
|            | 10:30 | 103,600 | 26,000 | 410,000 | 102,800 | 19,6 | 408 | 43,87 |
|            | 10:45 | 104,400 | 25,600 | 418,000 | 103,600 | 20   | 416 | 43,87 |
|            | 11:00 | 105,200 | 25,600 | 410,000 | 104,400 | 19,6 | 408 | 43,87 |
|            | 11:15 | 112,400 | 24,400 | 418,000 | 111,600 | 19,6 | 416 | 43,87 |
|            | 11:30 | 109,600 | 24,400 | 410,000 | 108,400 | 19,2 | 408 | 43,87 |
|            | 11:45 | 110,400 | 24,000 | 410,000 | 109,600 | 18,8 | 408 | 43,87 |
|            | 12:00 | 109,200 | 24,000 | 425,000 | 108,400 | 18,8 | 423 | 43,87 |
|            | 12:15 | 110,000 | 24,000 | 410,000 | 109,200 | 19,2 | 408 | 43,87 |
|            | 12:30 | 105,600 | 24,400 | 418,000 | 104,800 | 18,4 | 416 | 43,87 |
|            | 12:45 | 104,000 | 24,400 | 410,000 | 103,200 | 18,4 | 408 | 43,87 |
|            | 13:00 | 105,200 | 24,800 | 410,000 | 104,000 | 18,4 | 408 | 43,87 |
|            | 13:15 | 108,000 | 24,800 | 425,000 | 107,200 | 19,6 | 423 | 43,87 |
|            | 13:30 | 106,800 | 24,800 | 410,000 | 106,400 | 19,2 | 408 | 43,87 |
|            | 13:45 | 106,800 | 24,800 | 418,000 | 105,600 | 18,8 | 416 | 43,87 |
|            | 14:00 | 107,200 | 24,800 | 410,000 | 106,400 | 19,6 | 408 | 43,87 |
|            | 14:15 | 97,600  | 24,800 | 410,000 | 96,800  | 18   | 408 | 43,87 |
|            | 14:30 | 92,000  | 25,200 | 418,000 | 91,600  | 16,8 | 416 | 43,87 |
|            | 14:45 | 94,400  | 24,800 | 410,000 | 94,000  | 17,6 | 408 | 43,87 |
|            | 15:00 | 96,400  | 25,600 | 425,000 | 95,200  | 18,4 | 423 | 43,87 |
|            | 15:15 | 89,200  | 26,000 | 418,000 | 88,800  | 17,6 | 416 | 43,87 |
|            | 15:30 | 92,800  | 25,600 | 410,000 | 92,000  | 17,6 | 408 | 43,87 |
|            | 15:45 | 96,400  | 25,600 | 425,000 | 95,600  | 18   | 423 | 43,87 |
|            | 16:00 | 93,200  | 25,200 | 410,000 | 92,800  | 18   | 408 | 43,87 |
|            | 16:15 | 99,600  | 26,000 | 418,000 | 98,800  | 18,8 | 416 | 43,87 |
|            | 16:30 | 91,200  | 24,000 | 410,000 | 90,400  | 16   | 408 | 43,87 |
|            | 16:45 | 95,200  | 24,400 | 418,000 | 94,800  | 16,8 | 416 | 43,87 |
|            | 17:00 | 94,000  | 24,400 | 410,000 | 93,200  | 16,4 | 408 | 43,87 |
|            | 17:15 | 96,000  | 24,400 | 425,000 | 95,200  | 17,2 | 423 | 43,87 |
|            | 17:30 | 98,800  | 24,400 | 418,000 | 98,000  | 17,2 | 416 | 43,87 |
|            | 17:45 | 95,600  | 24,400 | 410,000 | 95,200  | 16,8 | 408 | 43,87 |
|            | 18:00 | 99,600  | 24,400 | 425,000 | 98,800  | 17,6 | 423 | 43,87 |
|            | 18:15 | 87,200  | 24,000 | 410,000 | 86,800  | 15,2 | 408 | 43,87 |
|            | 18:30 | 86,800  | 23,600 | 418,000 | 86,000  | 14,8 | 416 | 43,87 |
|            | 18:45 | 96,400  | 23,600 | 425,000 | 95,600  | 16   | 423 | 43,87 |
|            | 19:00 | 101,200 | 24,000 | 402,000 | 100,400 | 17,6 | 400 | 43,87 |
|            | 19:15 | 95,200  | 24,400 | 425,000 | 94,800  | 16,4 | 423 | 43,87 |
|            | 19:30 | 92,400  | 24,000 | 410,000 | 91,600  | 16   | 408 | 43,87 |
|            | 19:45 | 74,400  | 22,800 | 418,000 | 74,000  | 12,8 | 416 | 43,87 |
|            | 20:00 | 72,400  | 23,200 | 425,000 | 72,000  | 12,4 | 423 | 43,87 |
|            | 20:15 | 68,000  | 22,800 | 410,000 | 68,000  | 12,8 | 408 | 43,87 |
|            | 20:30 | 66,800  | 22,800 | 418,000 | 66,400  | 11,6 | 416 | 43,87 |
|            | 20:45 | 68,400  | 22,400 | 425,000 | 67,600  | 11,6 | 423 | 43,87 |
|            | 21:00 | 62,800  | 24,800 | 410,000 | 62,800  | 11,2 | 408 | 43,87 |
|            | 21:15 | 70,800  | 29,200 | 418,000 | 70,400  | 14,4 | 416 | 43,87 |
|            | 21:30 | 70,400  | 30,000 | 410,000 | 70,000  | 19,2 | 408 | 43,87 |
|            | 21:45 | 72,400  | 30,400 | 425,000 | 72,000  | 20   | 423 | 43,87 |
|            | 22:00 | 73,600  | 29,600 | 402,000 | 73,600  | 20,4 | 400 | 43,87 |
|            | 22:15 | 66,400  | 30,000 | 410,000 | 65,600  | 19,2 | 408 | 43,87 |
|            | 22:30 | 72,800  | 29,600 | 425,000 | 72,800  | 20   | 423 | 43,87 |
|            | 22:45 | 75,600  | 29,200 | 410,000 | 74,800  | 19,6 | 408 | 43,87 |
|            | 23:00 | 69,600  | 28,800 | 418,000 | 69,200  | 19,2 | 416 | 43,87 |
|            | 23:15 | 53,600  | 28,000 | 425,000 | 53,200  | 16,8 | 423 | 43,87 |
|            | 23:30 | 52,000  | 27,200 | 410,000 | 52,000  | 16   | 408 | 43,87 |
|            | 23:45 | 50,800  | 26,800 | 418,000 | 50,800  | 14,8 | 416 | 43,87 |
|            | 0:00  | 44,000  | 26,800 | 410,000 | 43,600  | 14   | 408 | 43,87 |
|            | 0:15  | 38,400  | 27,600 | 425,000 | 38,400  | 14,4 | 423 | 52,2  |
|            | 0:30  | 38,400  | 26,800 | 418,000 | 38,400  | 14   | 416 | 52,2  |
|            | 0:45  | 37,200  | 26,000 | 418,000 | 37,200  | 12,4 | 416 | 52,2  |
|            | 1:00  | 39,600  | 25,600 | 425,000 | 39,200  | 12   | 423 | 52,2  |
|            | 1:15  | 43,600  | 26,000 | 418,000 | 43,200  | 13,2 | 416 | 52,2  |
|            | 1:30  | 45,200  | 24,800 | 410,000 | 45,200  | 12,4 | 408 | 52,2  |
|            | 1:45  | 51,600  | 24,800 | 425,000 | 51,200  | 12,4 | 423 | 52,2  |
|            | 2:00  | 45,600  | 24,000 | 418,000 | 45,600  | 10,8 | 416 | 52,2  |
|            | 2:15  | 46,800  | 23,600 | 425,000 | 46,800  | 10,8 | 423 | 52,2  |
|            | 2:30  | 42,800  | 22,800 | 418,000 | 42,800  | 9,6  | 416 | 52,2  |
|            | 2:45  | 37,200  | 21,600 | 425,000 | 36,800  | 8    | 423 | 52,2  |
|            | 3:00  | 42,400  | 21,600 | 410,000 | 42,400  | 8,4  | 408 | 52,2  |
|            | 3:15  | 38,800  | 20,800 | 418,000 | 38,400  | 7,6  | 416 | 52,2  |
|            | 3:30  | 40,400  | 21,200 | 425,000 | 40,400  | 7,6  | 423 | 52,2  |
|            | 3:45  | 39,600  | 20,400 | 418,000 | 39,600  | 7,2  | 416 | 52,2  |
|            | 4:00  | 35,600  | 20,800 | 418,000 | 35,200  | 6,8  | 416 | 52,2  |
|            | 4:15  | 44,800  | 21,600 | 425,000 | 44,800  | 8,4  | 423 | 52,2  |
|            | 4:30  | 50,000  | 21,600 | 418,000 | 50,000  | 9,2  | 416 | 52,2  |
|            | 4:45  | 53,600  | 22,000 | 425,000 | 53,200  | 9,2  | 423 | 52,2  |
|            | 5:00  | 53,600  | 22,000 | 418,000 | 53,600  | 9,6  | 416 | 52,2  |
|            | 5:15  | 48,800  | 22,400 | 425,000 | 48,400  | 9,6  | 423 | 52,2  |
|            | 5:30  | 50,000  | 24,400 | 418,000 | 50,000  | 11,6 | 416 | 52,2  |
|            | 5:45  | 49,600  | 24,000 | 425,000 | 49,200  | 11,2 | 423 | 52,2  |
|            | 6:00  | 48,400  | 23,600 | 418,000 | 48,000  | 10,4 | 416 | 52,2  |
|            | 6:15  | 62,800  | 22,000 | 425,000 | 62,800  | 10,4 | 423 | 52,2  |
| 14.7.2015. |       |         |        |         |         |      |     |       |

|            |       |         |        |         |         |      |     |       |
|------------|-------|---------|--------|---------|---------|------|-----|-------|
|            | 6:30  | 54,400  | 20,800 | 418,000 | 54,400  | 8    | 416 | 52,2  |
|            | 6:45  | 50,800  | 20,000 | 425,000 | 50,400  | 7,2  | 423 | 52,2  |
|            | 7:00  | 59,600  | 19,600 | 418,000 | 59,200  | 7,2  | 416 | 52,2  |
|            | 7:15  | 69,600  | 20,000 | 425,000 | 69,200  | 9,2  | 423 | 52,2  |
|            | 7:30  | 86,400  | 20,400 | 402,000 | 86,000  | 11,6 | 400 | 52,2  |
|            | 7:45  | 84,400  | 21,200 | 425,000 | 84,000  | 11,6 | 423 | 52,2  |
|            | 8:00  | 77,600  | 20,400 | 410,000 | 77,200  | 10,4 | 408 | 52,2  |
|            | 8:15  | 110,000 | 20,800 | 418,000 | 108,800 | 15,6 | 416 | 52,2  |
|            | 8:30  | 106,400 | 20,800 | 410,000 | 105,600 | 14,8 | 408 | 52,2  |
|            | 8:45  | 106,000 | 20,800 | 425,000 | 105,200 | 14,8 | 423 | 52,2  |
|            | 9:00  | 102,400 | 21,200 | 410,000 | 101,600 | 15,2 | 408 | 52,2  |
|            | 9:15  | 108,400 | 21,600 | 418,000 | 107,600 | 15,6 | 416 | 52,2  |
|            | 9:30  | 104,000 | 21,600 | 410,000 | 103,200 | 15,6 | 408 | 52,2  |
|            | 9:45  | 99,600  | 22,000 | 425,000 | 98,800  | 14,8 | 423 | 52,2  |
|            | 10:00 | 108,000 | 22,000 | 410,000 | 107,200 | 16,4 | 408 | 52,2  |
|            | 10:15 | 103,600 | 22,400 | 418,000 | 102,800 | 16   | 416 | 52,2  |
|            | 10:30 | 106,000 | 22,000 | 410,000 | 104,800 | 16   | 408 | 52,2  |
|            | 10:45 | 104,000 | 22,000 | 410,000 | 103,200 | 16   | 408 | 52,2  |
|            | 11:00 | 109,200 | 22,000 | 418,000 | 108,400 | 16,4 | 416 | 52,2  |
|            | 11:15 | 108,000 | 23,200 | 410,000 | 107,200 | 17,6 | 408 | 52,2  |
|            | 11:30 | 109,200 | 22,800 | 425,000 | 108,400 | 18   | 423 | 52,2  |
|            | 11:45 | 107,200 | 23,200 | 410,000 | 106,400 | 17,2 | 408 | 52,2  |
|            | 12:00 | 109,200 | 23,600 | 410,000 | 108,000 | 18,4 | 408 | 52,2  |
|            | 12:15 | 107,200 | 24,000 | 418,000 | 106,400 | 18,8 | 416 | 52,2  |
|            | 12:30 | 106,400 | 24,000 | 410,000 | 105,600 | 18   | 408 | 52,2  |
|            | 12:45 | 108,000 | 23,600 | 410,000 | 106,800 | 18,4 | 408 | 52,2  |
|            | 13:00 | 108,000 | 25,200 | 418,000 | 107,200 | 19,6 | 416 | 52,2  |
|            | 13:15 | 111,200 | 25,200 | 410,000 | 110,400 | 20,4 | 408 | 52,2  |
|            | 13:30 | 108,400 | 24,800 | 410,000 | 107,200 | 19,6 | 408 | 52,2  |
|            | 13:45 | 116,800 | 24,800 | 425,000 | 116,000 | 20,8 | 423 | 52,2  |
|            | 14:00 | 112,000 | 25,200 | 410,000 | 111,200 | 20,4 | 408 | 52,2  |
|            | 14:15 | 110,400 | 25,200 | 410,000 | 109,200 | 20   | 408 | 52,2  |
|            | 14:30 | 113,600 | 25,200 | 418,000 | 112,400 | 21,2 | 416 | 52,2  |
|            | 14:45 | 114,000 | 26,000 | 410,000 | 113,200 | 21,2 | 408 | 52,2  |
|            | 15:00 | 110,800 | 25,600 | 425,000 | 110,000 | 21,2 | 423 | 52,2  |
|            | 15:15 | 108,800 | 26,000 | 402,000 | 108,000 | 20,4 | 400 | 52,2  |
|            | 15:30 | 108,800 | 25,600 | 410,000 | 107,600 | 20,4 | 408 | 52,2  |
|            | 15:45 | 111,200 | 26,000 | 425,000 | 110,400 | 20,8 | 423 | 52,2  |
|            | 16:00 | 114,400 | 26,000 | 410,000 | 113,200 | 22   | 408 | 52,2  |
|            | 16:15 | 112,400 | 25,600 | 418,000 | 111,600 | 20,8 | 416 | 52,2  |
|            | 16:30 | 115,600 | 25,600 | 410,000 | 114,400 | 21,2 | 408 | 52,2  |
|            | 16:45 | 113,600 | 26,000 | 425,000 | 112,400 | 21,2 | 423 | 52,2  |
|            | 17:00 | 115,200 | 25,200 | 410,000 | 114,800 | 21,2 | 408 | 52,2  |
|            | 17:15 | 113,600 | 25,200 | 418,000 | 112,400 | 20,4 | 416 | 52,2  |
|            | 17:30 | 114,000 | 26,000 | 410,000 | 113,200 | 21,2 | 408 | 52,2  |
|            | 17:45 | 110,400 | 25,600 | 418,000 | 109,200 | 20,4 | 416 | 52,2  |
|            | 18:00 | 112,400 | 25,600 | 410,000 | 111,600 | 20,8 | 408 | 52,2  |
|            | 18:15 | 110,400 | 24,000 | 425,000 | 109,200 | 18,8 | 423 | 52,2  |
|            | 18:30 | 115,200 | 24,400 | 410,000 | 114,400 | 20   | 408 | 52,2  |
|            | 18:45 | 114,800 | 24,000 | 418,000 | 113,600 | 19,2 | 416 | 52,2  |
|            | 19:00 | 114,000 | 23,600 | 410,000 | 113,200 | 19,2 | 408 | 52,2  |
|            | 19:15 | 102,400 | 23,600 | 425,000 | 101,600 | 16,8 | 423 | 52,2  |
|            | 19:30 | 93,200  | 22,400 | 410,000 | 92,800  | 14,8 | 408 | 52,2  |
|            | 19:45 | 80,400  | 22,400 | 418,000 | 79,600  | 12,8 | 416 | 52,2  |
|            | 20:00 | 78,400  | 22,400 | 410,000 | 78,000  | 12,4 | 408 | 52,2  |
|            | 20:15 | 60,400  | 23,200 | 425,000 | 60,000  | 11,6 | 423 | 52,2  |
|            | 20:30 | 55,200  | 23,200 | 418,000 | 55,200  | 10,8 | 416 | 52,2  |
|            | 20:45 | 54,400  | 22,400 | 418,000 | 54,000  | 10   | 416 | 52,2  |
|            | 21:00 | 54,000  | 21,200 | 410,000 | 54,000  | 9,2  | 408 | 52,2  |
|            | 21:15 | 54,000  | 20,800 | 425,000 | 54,000  | 8,4  | 423 | 52,2  |
|            | 21:30 | 65,200  | 22,000 | 410,000 | 64,400  | 11,2 | 408 | 52,2  |
|            | 21:45 | 65,600  | 24,000 | 418,000 | 65,600  | 12,8 | 416 | 52,2  |
|            | 22:00 | 64,800  | 29,600 | 410,000 | 64,800  | 19,2 | 408 | 52,2  |
|            | 22:15 | 58,000  | 29,600 | 425,000 | 57,200  | 18,4 | 423 | 52,2  |
|            | 22:30 | 60,400  | 29,200 | 410,000 | 60,400  | 18   | 408 | 52,2  |
|            | 22:45 | 63,600  | 30,000 | 418,000 | 63,200  | 19,2 | 416 | 52,2  |
|            | 23:00 | 64,800  | 29,600 | 410,000 | 64,400  | 18,8 | 408 | 52,2  |
|            | 23:15 | 48,400  | 28,400 | 418,000 | 48,400  | 16   | 416 | 52,2  |
|            | 23:30 | 51,200  | 28,800 | 410,000 | 50,800  | 16,8 | 408 | 52,2  |
|            | 23:45 | 63,600  | 29,200 | 425,000 | 63,200  | 18,4 | 423 | 52,2  |
|            | 0:00  | 53,200  | 29,600 | 410,000 | 53,200  | 17,2 | 408 | 52,2  |
|            | 0:15  | 50,000  | 28,400 | 418,000 | 49,6    | 16,4 | 416 | 67,37 |
|            | 0:30  | 49,600  | 28,000 | 425,000 | 49,6    | 15,6 | 423 | 67,37 |
|            | 0:45  | 54,800  | 27,200 | 410,000 | 54,4    | 15,2 | 408 | 67,37 |
|            | 1:00  | 52,800  | 27,600 | 418,000 | 52,8    | 15,6 | 416 | 67,37 |
|            | 1:15  | 53,200  | 28,000 | 425,000 | 52,8    | 16   | 423 | 67,37 |
|            | 1:30  | 54,000  | 28,400 | 410,000 | 54      | 16,4 | 408 | 67,37 |
|            | 1:45  | 56,000  | 28,800 | 418,000 | 55,6    | 16,8 | 416 | 67,37 |
|            | 2:00  | 48,400  | 28,400 | 418,000 | 48      | 16   | 416 | 67,37 |
|            | 2:15  | 48,000  | 28,800 | 410,000 | 48      | 16   | 408 | 67,37 |
| 15.7.2015. |       |         |        |         |         |      |     |       |

|       |         |        |         |       |      |     |       |
|-------|---------|--------|---------|-------|------|-----|-------|
| 2:30  | 50,400  | 27,600 | 425,000 | 50,4  | 15,6 | 423 | 67,37 |
| 2:45  | 54,400  | 27,600 | 418,000 | 54    | 15,2 | 416 | 67,37 |
| 3:00  | 50,000  | 27,200 | 425,000 | 50    | 14,8 | 423 | 67,37 |
| 3:15  | 52,800  | 27,200 | 418,000 | 52,4  | 14,8 | 416 | 67,37 |
| 3:30  | 54,000  | 26,800 | 425,000 | 54    | 14,8 | 423 | 67,37 |
| 3:45  | 50,400  | 26,800 | 410,000 | 49,6  | 14,4 | 408 | 67,37 |
| 4:00  | 50,800  | 27,200 | 418,000 | 50,8  | 14,4 | 416 | 67,37 |
| 4:15  | 51,200  | 27,200 | 425,000 | 51,2  | 14,8 | 423 | 67,37 |
| 4:30  | 52,800  | 26,800 | 418,000 | 52,4  | 14,8 | 416 | 67,37 |
| 4:45  | 52,800  | 26,800 | 425,000 | 52,8  | 14,4 | 423 | 67,37 |
| 5:00  | 58,000  | 27,200 | 418,000 | 57,6  | 15,2 | 416 | 67,37 |
| 5:15  | 54,400  | 26,800 | 418,000 | 54,4  | 14,4 | 416 | 67,37 |
| 5:30  | 53,600  | 26,800 | 425,000 | 53,6  | 14,4 | 423 | 67,37 |
| 5:45  | 51,600  | 25,600 | 418,000 | 50,8  | 12,8 | 416 | 67,37 |
| 6:00  | 47,200  | 24,000 | 425,000 | 47,2  | 11,6 | 423 | 67,37 |
| 6:15  | 61,200  | 23,200 | 410,000 | 60,8  | 11,2 | 408 | 67,37 |
| 6:30  | 60,800  | 22,800 | 418,000 | 60,8  | 10,8 | 416 | 67,37 |
| 6:45  | 66,400  | 22,800 | 425,000 | 66    | 11,6 | 423 | 67,37 |
| 7:00  | 71,600  | 23,600 | 418,000 | 71,2  | 12,8 | 416 | 67,37 |
| 7:15  | 88,800  | 23,600 | 425,000 | 88,4  | 15,2 | 423 | 67,37 |
| 7:30  | 91,200  | 24,000 | 410,000 | 90,4  | 16   | 408 | 67,37 |
| 7:45  | 84,800  | 25,600 | 418,000 | 84    | 16,4 | 416 | 67,37 |
| 8:00  | 94,800  | 26,000 | 410,000 | 94,4  | 18,4 | 408 | 67,37 |
| 8:15  | 108,400 | 25,600 | 425,000 | 107,6 | 20,4 | 423 | 67,37 |
| 8:30  | 104,400 | 25,200 | 402,000 | 103,2 | 19,2 | 400 | 67,37 |
| 8:45  | 105,600 | 25,200 | 425,000 | 104,8 | 19,6 | 423 | 67,37 |
| 9:00  | 101,600 | 25,200 | 410,000 | 100,8 | 18,8 | 408 | 67,37 |
| 9:15  | 106,800 | 25,200 | 410,000 | 106   | 19,6 | 408 | 67,37 |
| 9:30  | 103,600 | 25,200 | 418,000 | 102,8 | 19,2 | 416 | 67,37 |
| 9:45  | 102,000 | 24,800 | 410,000 | 101,2 | 18,8 | 408 | 67,37 |
| 10:00 | 103,600 | 25,200 | 410,000 | 102,8 | 19,2 | 408 | 67,37 |
| 10:15 | 110,000 | 30,400 | 425,000 | 108,8 | 25,2 | 423 | 67,37 |
| 10:30 | 113,200 | 30,400 | 410,000 | 112,4 | 26,4 | 408 | 67,37 |
| 10:45 | 113,600 | 30,000 | 418,000 | 112,4 | 25,6 | 416 | 67,37 |
| 11:00 | 106,400 | 30,400 | 410,000 | 105,6 | 24,8 | 408 | 67,37 |
| 11:15 | 108,400 | 29,600 | 410,000 | 107,6 | 24,4 | 408 | 67,37 |
| 11:30 | 111,200 | 29,600 | 418,000 | 110   | 25,2 | 416 | 67,37 |
| 11:45 | 107,200 | 30,000 | 410,000 | 106,4 | 24,4 | 408 | 67,37 |
| 12:00 | 110,800 | 30,000 | 410,000 | 110   | 25,6 | 408 | 67,37 |
| 12:15 | 110,800 | 30,400 | 425,000 | 109,6 | 25,6 | 423 | 67,37 |
| 12:30 | 108,800 | 30,000 | 410,000 | 108   | 24,8 | 408 | 67,37 |
| 12:45 | 108,800 | 30,000 | 418,000 | 107,6 | 25,2 | 416 | 67,37 |
| 13:00 | 109,600 | 30,400 | 410,000 | 108,4 | 25,2 | 408 | 67,37 |
| 13:15 | 111,600 | 30,000 | 410,000 | 110,8 | 25,6 | 408 | 67,37 |
| 13:30 | 109,600 | 30,000 | 418,000 | 108,8 | 25,2 | 416 | 67,37 |
| 13:45 | 110,400 | 30,400 | 410,000 | 109,2 | 25,6 | 408 | 67,37 |
| 14:00 | 114,800 | 30,400 | 410,000 | 114   | 26,4 | 408 | 67,37 |
| 14:15 | 112,400 | 30,400 | 425,000 | 111,2 | 26,4 | 423 | 67,37 |
| 14:30 | 113,600 | 30,400 | 410,000 | 112,8 | 26   | 408 | 67,37 |
| 14:45 | 111,200 | 30,400 | 418,000 | 110   | 25,6 | 416 | 67,37 |
| 15:00 | 113,600 | 30,400 | 410,000 | 112,8 | 26   | 408 | 67,37 |
| 15:15 | 104,800 | 30,400 | 425,000 | 104   | 24,4 | 423 | 67,37 |
| 15:30 | 107,200 | 30,400 | 410,000 | 106   | 25,2 | 408 | 67,37 |
| 15:45 | 109,600 | 30,000 | 402,000 | 108,8 | 25,2 | 400 | 67,37 |
| 16:00 | 114,000 | 30,000 | 425,000 | 112,8 | 25,6 | 423 | 67,37 |
| 16:15 | 106,000 | 30,000 | 410,000 | 105,6 | 24   | 408 | 67,37 |
| 16:30 | 110,400 | 29,600 | 418,000 | 109,2 | 25,2 | 416 | 67,37 |
| 16:45 | 107,600 | 30,800 | 410,000 | 106,4 | 25,2 | 408 | 67,37 |
| 17:00 | 110,800 | 30,400 | 425,000 | 110,4 | 26   | 423 | 67,37 |
| 17:15 | 104,800 | 30,000 | 410,000 | 103,6 | 23,6 | 408 | 67,37 |
| 17:30 | 103,600 | 29,600 | 418,000 | 102,8 | 24   | 416 | 67,37 |
| 17:45 | 101,200 | 30,400 | 410,000 | 100,4 | 23,6 | 408 | 67,37 |
| 18:00 | 101,600 | 29,600 | 425,000 | 100,8 | 23,6 | 423 | 67,37 |
| 18:15 | 103,600 | 30,000 | 410,000 | 102,8 | 23,6 | 408 | 67,37 |
| 18:30 | 104,400 | 29,600 | 418,000 | 103,6 | 23,6 | 416 | 67,37 |
| 18:45 | 102,400 | 29,200 | 410,000 | 101,6 | 23,2 | 408 | 67,37 |
| 19:00 | 98,400  | 29,200 | 418,000 | 97,6  | 22,4 | 416 | 67,37 |
| 19:15 | 104,800 | 29,200 | 425,000 | 104   | 23,2 | 423 | 67,37 |
| 19:30 | 104,400 | 29,200 | 410,000 | 104   | 23,2 | 408 | 67,37 |
| 19:45 | 93,200  | 28,000 | 418,000 | 92,4  | 20,4 | 416 | 67,37 |
| 20:00 | 82,000  | 27,600 | 410,000 | 81,6  | 18,4 | 408 | 67,37 |
| 20:15 | 75,600  | 28,400 | 425,000 | 74,8  | 18,4 | 423 | 67,37 |
| 20:30 | 74,000  | 28,800 | 418,000 | 74    | 18,8 | 416 | 67,37 |
| 20:45 | 68,800  | 28,000 | 410,000 | 68,4  | 17,2 | 408 | 67,37 |
| 21:00 | 67,200  | 28,400 | 425,000 | 66,8  | 18   | 423 | 67,37 |
| 21:15 | 72,400  | 34,800 | 402,000 | 72    | 24,8 | 400 | 67,37 |
| 21:30 | 73,200  | 36,000 | 410,000 | 72,8  | 26,8 | 408 | 67,37 |
| 21:45 | 77,200  | 36,000 | 425,000 | 76,4  | 27,2 | 423 | 67,37 |
| 22:00 | 78,800  | 36,800 | 410,000 | 78,4  | 28   | 408 | 67,37 |
| 22:15 | 74,000  | 36,800 | 410,000 | 73,6  | 27,2 | 408 | 67,37 |

|            |         |         |         |         |         |      |       |       |
|------------|---------|---------|---------|---------|---------|------|-------|-------|
|            | 22:30   | 75,200  | 36,800  | 418,000 | 74,8    | 27,6 | 416   | 67,37 |
|            | 22:45   | 74,000  | 36,800  | 410,000 | 73,6    | 27,6 | 408   | 67,37 |
|            | 23:00   | 79,200  | 37,600  | 410,000 | 78,4    | 28,8 | 408   | 67,37 |
|            | 23:15   | 70,800  | 36,800  | 425,000 | 70,4    | 27,2 | 423   | 67,37 |
|            | 23:30   | 63,600  | 37,600  | 410,000 | 63,6    | 27,2 | 408   | 67,37 |
|            | 23:45   | 67,200  | 37,600  | 418,000 | 66,8    | 27,6 | 416   | 67,37 |
|            | 0:00    | 61,600  | 38,400  | 418,000 | 61,2    | 27,2 | 416   | 67,37 |
| 16.7.2015. | 0:15    | 60,400  | 38,000  | 410,000 | 60,000  | 27,2 | 408   | 64,34 |
|            | 0:30    | 59,600  | 37,200  | 425,000 | 59,200  | 26,4 | 423   | 64,34 |
|            | 0:45    | 60,400  | 36,800  | 410,000 | 60,400  | 25,6 | 408   | 64,34 |
|            | 1:00    | 58,800  | 36,000  | 418,000 | 58,400  | 24,8 | 416   | 64,34 |
|            | 1:15    | 57,600  | 36,800  | 425,000 | 57,200  | 25,6 | 423   | 64,34 |
|            | 1:30    | 58,400  | 36,400  | 410,000 | 58,000  | 25,2 | 408   | 64,34 |
|            | 1:45    | 60,000  | 36,400  | 418,000 | 60,000  | 25,6 | 416   | 64,34 |
|            | 2:00    | 54,800  | 36,000  | 425,000 | 54,800  | 24,4 | 423   | 64,34 |
|            | 2:15    | 58,400  | 36,800  | 410,000 | 58,000  | 25,2 | 408   | 64,34 |
|            | 2:30    | 59,600  | 36,000  | 418,000 | 59,200  | 25,6 | 416   | 64,34 |
|            | 2:45    | 60,800  | 36,400  | 418,000 | 60,400  | 24,8 | 416   | 64,34 |
|            | 3:00    | 59,600  | 36,000  | 410,000 | 59,200  | 25,2 | 408   | 64,34 |
|            | 3:15    | 64,400  | 37,200  | 425,000 | 64,000  | 26,4 | 423   | 64,34 |
|            | 3:30    | 59,200  | 36,800  | 418,000 | 58,800  | 26   | 416   | 64,34 |
|            | 3:45    | 55,200  | 36,800  | 425,000 | 55,200  | 25,2 | 423   | 64,34 |
|            | 4:00    | 61,200  | 36,800  | 410,000 | 60,800  | 26   | 408   | 64,34 |
|            | 4:15    | 59,600  | 36,400  | 418,000 | 59,200  | 25,2 | 416   | 64,34 |
|            | 4:30    | 57,200  | 36,000  | 425,000 | 57,200  | 24,4 | 423   | 64,34 |
|            | 4:45    | 59,200  | 35,600  | 410,000 | 58,400  | 24,4 | 408   | 64,34 |
|            | 5:00    | 57,200  | 35,600  | 418,000 | 57,200  | 24,4 | 416   | 64,34 |
|            | 5:15    | 63,200  | 36,000  | 425,000 | 62,800  | 24,4 | 423   | 64,34 |
|            | 5:30    | 57,600  | 35,200  | 418,000 | 57,200  | 24   | 416   | 64,34 |
|            | 5:45    | 54,800  | 34,800  | 418,000 | 54,800  | 22,8 | 416   | 64,34 |
|            | 6:00    | 56,800  | 34,000  | 425,000 | 56,400  | 22,4 | 423   | 64,34 |
|            | 6:15    | 65,600  | 33,600  | 410,000 | 65,600  | 23,2 | 408   | 64,34 |
|            | 6:30    | 64,800  | 33,200  | 418,000 | 64,400  | 22,4 | 416   | 64,34 |
|            | 6:45    | 74,400  | 33,600  | 425,000 | 73,600  | 23,6 | 423   | 64,34 |
|            | 7:00    | 81,600  | 32,800  | 410,000 | 81,200  | 24,4 | 408   | 64,34 |
|            | 7:15    | 99,200  | 31,600  | 418,000 | 98,000  | 24,8 | 416   | 64,34 |
|            | 7:30    | 103,200 | 32,400  | 410,000 | 102,400 | 26,4 | 408   | 64,34 |
|            | 7:45    | 95,200  | 32,400  | 425,000 | 94,800  | 25,6 | 423   | 64,34 |
|            | 8:00    | 100,400 | 32,400  | 410,000 | 99,600  | 26   | 408   | 64,34 |
|            | 8:15    | 108,800 | 32,400  | 410,000 | 108,000 | 27,6 | 408   | 64,34 |
|            | 8:30    | 103,600 | 33,200  | 418,000 | 102,800 | 28   | 416   | 64,34 |
|            | 8:45    | 106,400 | 34,800  | 410,000 | 105,200 | 29,6 | 408   | 64,34 |
|            | 9:00    | 106,000 | 34,800  | 410,000 | 105,200 | 29,6 | 408   | 64,34 |
|            | 9:15    | 107,200 | 34,400  | 418,000 | 106,000 | 29,6 | 416   | 64,34 |
|            | 9:30    | 106,400 | 34,400  | 410,000 | 105,600 | 29,6 | 408   | 64,34 |
|            | 9:45    | 105,600 | 35,200  | 410,000 | 104,800 | 29,6 | 408   | 64,34 |
|            | 10:00   | 107,200 | 34,800  | 425,000 | 106,000 | 30   | 423   | 64,34 |
|            | 10:15   | 107,200 | 34,400  | 410,000 | 106,400 | 30   | 408   | 64,34 |
|            | 10:30   | 107,200 | 35,200  | 410,000 | 106,400 | 30   | 408   | 64,34 |
|            | 10:45   | 105,200 | 34,400  | 402,000 | 104,000 | 29,6 | 400   | 64,34 |
|            | 11:00   | 105,600 | 34,000  | 425,000 | 104,800 | 28,8 | 423   | 64,34 |
|            | 11:15   | 106,800 | 34,400  | 410,000 | 105,600 | 30   | 408   | 64,34 |
|            | 11:30   | 110,400 | 34,000  | 410,000 | 109,600 | 29,6 | 408   | 64,34 |
|            | 11:45   | 114,000 | 33,200  | 410,000 | 112,800 | 29,6 | 408   | 64,34 |
|            | 12:00   | 116,800 | 33,600  | 410,000 | 116,000 | 30,8 | 408   | 64,34 |
| 12:15      | 114,400 | 33,600  | 410,000 | 113,200 | 30      | 408  | 64,34 |       |
| 12:30      | 110,000 | 33,200  | 410,000 | 108,800 | 29,2    | 408  | 64,34 |       |
| 12:45      | 110,400 | 33,600  | 410,000 | 109,200 | 29,2    | 408  | 64,34 |       |
| 13:00      | 112,800 | 33,200  | 402,000 | 112,000 | 29,6    | 400  | 64,34 |       |
| 13:15      | 112,000 | 33,600  | 425,000 | 110,800 | 29,2    | 423  | 64,34 |       |
| 13:30      | 114,000 | 33,200  | 410,000 | 113,200 | 30      | 408  | 64,34 |       |
| 13:45      | 114,000 | 33,200  | 410,000 | 113,200 | 29,6    | 408  | 64,34 |       |
| 14:00      | 109,600 | 32,800  | 410,000 | 108,400 | 28,8    | 408  | 64,34 |       |
| 14:15      | 114,400 | 32,000  | 410,000 | 113,200 | 28,4    | 408  | 64,34 |       |
| 14:30      | 112,400 | 32,000  | 410,000 | 111,600 | 28      | 408  | 64,34 |       |
| 14:45      | 115,200 | 32,000  | 410,000 | 114,000 | 28,4    | 408  | 64,34 |       |
| 15:00      | 111,200 | 32,800  | 410,000 | 110,400 | 28,8    | 408  | 64,34 |       |
| 15:15      | 107,600 | 33,200  | 418,000 | 106,000 | 28      | 416  | 64,34 |       |
| 15:30      | 115,600 | 33,200  | 410,000 | 114,800 | 30      | 408  | 64,34 |       |
| 15:45      | 117,200 | 33,200  | 410,000 | 116,000 | 30      | 408  | 64,34 |       |
| 16:00      | 114,800 | 33,200  | 410,000 | 114,000 | 29,6    | 408  | 64,34 |       |
| 16:15      | 120,400 | 34,000  | 418,000 | 119,200 | 30,8    | 416  | 64,34 |       |
| 16:30      | 120,400 | 33,200  | 410,000 | 118,800 | 30,8    | 408  | 64,34 |       |
| 16:45      | 120,800 | 33,600  | 410,000 | 120,000 | 31,2    | 408  | 64,34 |       |
| 17:00      | 117,200 | 33,600  | 410,000 | 116,000 | 30,4    | 408  | 64,34 |       |
| 17:15      | 110,000 | 34,000  | 425,000 | 108,800 | 29,2    | 423  | 64,34 |       |
| 17:30      | 111,200 | 33,200  | 402,000 | 110,400 | 28,8    | 400  | 64,34 |       |
| 17:45      | 111,200 | 33,200  | 410,000 | 110,400 | 29,2    | 408  | 64,34 |       |
| 18:00      | 106,000 | 33,200  | 425,000 | 105,200 | 28      | 423  | 64,34 |       |
| 18:15      | 96,400  | 32,800  | 410,000 | 95,200  | 25,6    | 408  | 64,34 |       |

|            |         |         |         |         |         |      |       |       |
|------------|---------|---------|---------|---------|---------|------|-------|-------|
|            | 18:30   | 98,000  | 32,400  | 410,000 | 97,600  | 26   | 408   | 64,34 |
|            | 18:45   | 100,400 | 32,000  | 418,000 | 99,200  | 25,6 | 416   | 64,34 |
|            | 19:00   | 98,800  | 31,600  | 410,000 | 98,400  | 25,2 | 408   | 64,34 |
|            | 19:15   | 98,000  | 31,600  | 410,000 | 97,200  | 24,8 | 408   | 64,34 |
|            | 19:30   | 98,000  | 31,600  | 425,000 | 97,200  | 25,2 | 423   | 64,34 |
|            | 19:45   | 98,400  | 31,600  | 410,000 | 97,600  | 25,2 | 408   | 64,34 |
|            | 20:00   | 81,600  | 31,200  | 418,000 | 81,200  | 22   | 416   | 64,34 |
|            | 20:15   | 74,400  | 30,400  | 410,000 | 74,000  | 20,8 | 408   | 64,34 |
|            | 20:30   | 72,000  | 30,400  | 418,000 | 71,600  | 20,4 | 416   | 64,34 |
|            | 20:45   | 72,000  | 29,600  | 410,000 | 71,600  | 20,4 | 408   | 64,34 |
|            | 21:00   | 69,600  | 29,600  | 410,000 | 69,600  | 19,2 | 408   | 64,34 |
|            | 21:15   | 70,000  | 29,600  | 425,000 | 69,200  | 19,6 | 423   | 64,34 |
|            | 21:30   | 73,200  | 32,400  | 410,000 | 72,800  | 22,8 | 408   | 64,34 |
|            | 21:45   | 69,200  | 33,600  | 410,000 | 68,800  | 23,2 | 408   | 64,34 |
|            | 22:00   | 69,600  | 33,600  | 418,000 | 69,200  | 24   | 416   | 64,34 |
|            | 22:15   | 63,600  | 34,000  | 410,000 | 63,600  | 23,6 | 408   | 64,34 |
|            | 22:30   | 58,400  | 33,200  | 410,000 | 58,000  | 22,4 | 408   | 64,34 |
|            | 22:45   | 71,200  | 34,000  | 410,000 | 70,400  | 24,4 | 408   | 64,34 |
|            | 23:00   | 62,000  | 34,400  | 418,000 | 62,000  | 23,6 | 416   | 64,34 |
|            | 23:15   | 53,200  | 33,600  | 410,000 | 53,200  | 22   | 408   | 64,34 |
|            | 23:30   | 53,200  | 34,000  | 410,000 | 52,800  | 22,4 | 408   | 64,34 |
|            | 23:45   | 60,800  | 33,600  | 425,000 | 60,400  | 22,8 | 423   | 64,34 |
|            | 0:00    | 54,000  | 32,800  | 410,000 | 53,600  | 21,2 | 408   | 64,34 |
| 17.7.2015. | 0:15    | 68,000  | 32,000  | 418,000 | 67,600  | 22   | 416   | 73,26 |
|            | 0:30    | 71,200  | 32,400  | 410,000 | 71,200  | 22,4 | 408   | 73,26 |
|            | 0:45    | 70,000  | 32,800  | 410,000 | 69,200  | 22,8 | 408   | 73,26 |
|            | 1:00    | 70,800  | 33,200  | 418,000 | 70,800  | 22,8 | 416   | 73,26 |
|            | 1:15    | 74,000  | 34,800  | 425,000 | 73,600  | 25,6 | 423   | 73,26 |
|            | 1:30    | 73,600  | 34,400  | 410,000 | 73,200  | 24,4 | 408   | 73,26 |
|            | 1:45    | 76,000  | 34,000  | 418,000 | 75,200  | 24,4 | 416   | 73,26 |
|            | 2:00    | 72,800  | 34,000  | 425,000 | 72,800  | 24   | 423   | 73,26 |
|            | 2:15    | 78,000  | 34,400  | 410,000 | 77,200  | 24,8 | 408   | 73,26 |
|            | 2:30    | 75,600  | 34,800  | 418,000 | 75,200  | 25,2 | 416   | 73,26 |
|            | 2:45    | 79,200  | 35,200  | 425,000 | 78,800  | 25,6 | 423   | 73,26 |
|            | 3:00    | 79,200  | 34,400  | 418,000 | 78,400  | 25,2 | 416   | 73,26 |
|            | 3:15    | 85,600  | 34,000  | 410,000 | 85,200  | 25,6 | 408   | 73,26 |
|            | 3:30    | 84,400  | 33,600  | 425,000 | 84,000  | 25,2 | 423   | 73,26 |
|            | 3:45    | 84,000  | 33,600  | 418,000 | 83,200  | 24,8 | 416   | 73,26 |
|            | 4:00    | 79,600  | 34,000  | 418,000 | 79,200  | 24,4 | 416   | 73,26 |
|            | 4:15    | 84,800  | 34,000  | 410,000 | 84,400  | 25,2 | 408   | 73,26 |
|            | 4:30    | 86,800  | 32,800  | 425,000 | 86,000  | 24,4 | 423   | 73,26 |
|            | 4:45    | 82,800  | 33,200  | 418,000 | 82,400  | 24,4 | 416   | 73,26 |
|            | 5:00    | 83,600  | 33,200  | 425,000 | 82,800  | 24,4 | 423   | 73,26 |
|            | 5:15    | 87,200  | 32,800  | 410,000 | 86,800  | 24,4 | 408   | 73,26 |
|            | 5:30    | 82,000  | 32,800  | 418,000 | 81,600  | 23,2 | 416   | 73,26 |
|            | 5:45    | 74,000  | 32,800  | 425,000 | 73,600  | 23,2 | 423   | 73,26 |
|            | 6:00    | 72,400  | 32,400  | 418,000 | 72,000  | 22   | 416   | 73,26 |
|            | 6:15    | 90,800  | 30,800  | 425,000 | 90,000  | 22,8 | 423   | 73,26 |
|            | 6:30    | 103,200 | 29,600  | 410,000 | 102,400 | 22,8 | 408   | 73,26 |
|            | 6:45    | 106,400 | 28,400  | 418,000 | 105,600 | 22,8 | 416   | 73,26 |
|            | 7:00    | 102,400 | 28,400  | 425,000 | 101,600 | 22,4 | 423   | 73,26 |
|            | 7:15    | 104,800 | 28,800  | 402,000 | 104,000 | 22,8 | 400   | 73,26 |
|            | 7:30    | 119,600 | 28,400  | 425,000 | 118,400 | 24,8 | 423   | 73,26 |
|            | 7:45    | 115,200 | 28,800  | 410,000 | 114,000 | 24,8 | 408   | 73,26 |
|            | 8:00    | 117,200 | 28,400  | 410,000 | 116,400 | 24,8 | 408   | 73,26 |
|            | 8:15    | 119,200 | 28,800  | 418,000 | 118,400 | 25,6 | 416   | 73,26 |
|            | 8:30    | 118,400 | 28,800  | 410,000 | 116,800 | 25,2 | 408   | 73,26 |
|            | 8:45    | 118,000 | 28,400  | 410,000 | 117,200 | 25,2 | 408   | 73,26 |
|            | 9:00    | 115,600 | 29,600  | 410,000 | 114,400 | 26   | 408   | 73,26 |
|            | 9:15    | 123,600 | 30,400  | 425,000 | 122,000 | 28   | 423   | 73,26 |
|            | 9:30    | 121,200 | 30,400  | 402,000 | 120,400 | 27,6 | 400   | 73,26 |
|            | 9:45    | 119,600 | 30,400  | 410,000 | 118,400 | 27,6 | 408   | 73,26 |
|            | 10:00   | 116,800 | 30,400  | 410,000 | 116,000 | 27,2 | 408   | 73,26 |
|            | 10:15   | 117,600 | 31,200  | 425,000 | 116,400 | 27,6 | 423   | 73,26 |
|            | 10:30   | 118,800 | 30,800  | 410,000 | 117,200 | 28   | 408   | 73,26 |
|            | 10:45   | 119,200 | 31,200  | 410,000 | 118,400 | 28   | 408   | 73,26 |
|            | 11:00   | 121,600 | 30,000  | 410,000 | 120,400 | 27,6 | 408   | 73,26 |
|            | 11:15   | 123,600 | 29,600  | 418,000 | 122,400 | 27,2 | 416   | 73,26 |
|            | 11:30   | 124,400 | 29,600  | 410,000 | 123,200 | 28   | 408   | 73,26 |
|            | 11:45   | 123,200 | 29,200  | 410,000 | 122,000 | 26,8 | 408   | 73,26 |
|            | 12:00   | 118,800 | 30,400  | 410,000 | 117,600 | 27,6 | 408   | 73,26 |
| 12:15      | 112,800 | 30,400  | 410,000 | 111,600 | 26,4    | 408  | 73,26 |       |
| 12:30      | 121,600 | 29,600  | 410,000 | 120,400 | 26,8    | 408  | 73,26 |       |
| 12:45      | 126,000 | 29,200  | 410,000 | 124,800 | 28      | 408  | 73,26 |       |
| 13:00      | 124,800 | 28,400  | 410,000 | 123,600 | 27,2    | 408  | 73,26 |       |
| 13:15      | 132,000 | 27,600  | 410,000 | 130,400 | 27,2    | 408  | 73,26 |       |
| 13:30      | 130,800 | 32,800  | 410,000 | 129,600 | 32,8    | 408  | 73,26 |       |
| 13:45      | 135,600 | 36,800  | 410,000 | 134,000 | 37,2    | 408  | 73,26 |       |
| 14:00      | 135,200 | 36,400  | 402,000 | 133,600 | 37,2    | 400  | 73,26 |       |
| 14:15      | 145,600 | 35,200  | 410,000 | 144,000 | 38      | 408  | 73,26 |       |

|            |        |         |         |         |         |      |       |       |
|------------|--------|---------|---------|---------|---------|------|-------|-------|
|            | 14:30  | 142,400 | 35,200  | 410,000 | 140,400 | 37,2 | 408   | 73,26 |
|            | 14:45  | 142,400 | 35,200  | 410,000 | 141,200 | 37,6 | 408   | 73,26 |
|            | 15:00  | 142,800 | 35,200  | 425,000 | 140,800 | 37,2 | 423   | 73,26 |
|            | 15:15  | 134,400 | 36,400  | 410,000 | 133,200 | 36,4 | 408   | 73,26 |
|            | 15:30  | 128,800 | 36,800  | 410,000 | 127,200 | 36   | 408   | 73,26 |
|            | 15:45  | 129,600 | 36,000  | 418,000 | 128,400 | 34,8 | 416   | 73,26 |
|            | 16:00  | 128,800 | 30,800  | 410,000 | 127,200 | 30   | 408   | 73,26 |
|            | 16:15  | 127,600 | 29,600  | 410,000 | 126,400 | 28,4 | 408   | 73,26 |
|            | 16:30  | 129,200 | 30,000  | 410,000 | 127,600 | 29,2 | 408   | 73,26 |
|            | 16:45  | 130,800 | 30,800  | 410,000 | 129,600 | 30   | 408   | 73,26 |
|            | 17:00  | 142,400 | 30,800  | 410,000 | 140,800 | 32,8 | 408   | 73,26 |
|            | 17:15  | 148,000 | 30,000  | 410,000 | 146,400 | 33,6 | 408   | 73,26 |
|            | 17:30  | 147,200 | 30,400  | 410,000 | 145,200 | 33,2 | 408   | 73,26 |
|            | 17:45  | 147,200 | 30,400  | 410,000 | 145,600 | 33,6 | 408   | 73,26 |
|            | 18:00  | 148,400 | 30,400  | 410,000 | 146,400 | 33,6 | 408   | 73,26 |
|            | 18:15  | 142,400 | 31,600  | 402,000 | 140,800 | 32,8 | 400   | 73,26 |
|            | 18:30  | 149,200 | 30,400  | 410,000 | 147,200 | 34,4 | 408   | 73,26 |
|            | 18:45  | 138,400 | 30,800  | 410,000 | 136,800 | 31,6 | 408   | 73,26 |
|            | 19:00  | 136,000 | 30,800  | 410,000 | 134,800 | 31,2 | 408   | 73,26 |
|            | 19:15  | 121,200 | 30,800  | 410,000 | 120,000 | 28   | 408   | 73,26 |
|            | 19:30  | 111,200 | 30,400  | 425,000 | 110,400 | 26   | 423   | 73,26 |
|            | 19:45  | 109,200 | 30,400  | 410,000 | 108,400 | 26   | 408   | 73,26 |
|            | 20:00  | 110,800 | 31,200  | 410,000 | 109,600 | 26   | 408   | 73,26 |
|            | 20:15  | 107,200 | 31,600  | 418,000 | 106,000 | 26,8 | 416   | 73,26 |
|            | 20:30  | 109,200 | 32,800  | 410,000 | 108,400 | 27,6 | 408   | 73,26 |
|            | 20:45  | 108,400 | 32,800  | 410,000 | 108,000 | 28   | 408   | 73,26 |
|            | 21:00  | 109,600 | 32,800  | 418,000 | 108,400 | 28   | 416   | 73,26 |
|            | 21:15  | 106,000 | 33,200  | 410,000 | 105,200 | 28   | 408   | 73,26 |
|            | 21:30  | 107,200 | 33,600  | 410,000 | 106,400 | 28,8 | 408   | 73,26 |
|            | 21:45  | 105,600 | 36,000  | 425,000 | 104,800 | 31,2 | 423   | 73,26 |
|            | 22:00  | 100,400 | 36,800  | 410,000 | 99,600  | 30,8 | 408   | 73,26 |
|            | 22:15  | 86,000  | 34,800  | 410,000 | 85,200  | 26,8 | 408   | 73,26 |
|            | 22:30  | 87,200  | 34,400  | 410,000 | 86,800  | 26,8 | 408   | 73,26 |
|            | 22:45  | 89,200  | 34,800  | 418,000 | 88,800  | 27,6 | 416   | 73,26 |
|            | 23:00  | 86,400  | 34,800  | 410,000 | 85,600  | 26,8 | 408   | 73,26 |
|            | 23:15  | 84,400  | 35,200  | 410,000 | 83,600  | 26,8 | 408   | 73,26 |
|            | 23:30  | 80,000  | 35,600  | 418,000 | 79,600  | 26,8 | 416   | 73,26 |
|            | 23:45  | 80,000  | 35,200  | 410,000 | 79,200  | 26,4 | 408   | 73,26 |
|            | 0:00   | 78,000  | 35,600  | 425,000 | 78,000  | 26,4 | 423   | 73,26 |
| 18.7.2015. | 0:15   | 61,600  | 35,600  | 410,000 | 60,800  | 24,4 | 408   | 59,72 |
|            | 0:30   | 66,000  | 35,200  | 418,000 | 66,000  | 25,2 | 416   | 59,72 |
|            | 0:45   | 65,600  | 35,200  | 410,000 | 65,200  | 24,4 | 408   | 59,72 |
|            | 1:00   | 67,600  | 35,600  | 425,000 | 67,200  | 24,8 | 423   | 59,72 |
|            | 1:15   | 70,800  | 34,800  | 418,000 | 70,400  | 25,2 | 416   | 59,72 |
|            | 1:30   | 64,400  | 34,800  | 410,000 | 64,000  | 23,6 | 408   | 59,72 |
|            | 1:45   | 63,200  | 34,000  | 418,000 | 62,800  | 23,2 | 416   | 59,72 |
|            | 2:00   | 65,200  | 34,000  | 425,000 | 65,200  | 23,2 | 423   | 59,72 |
|            | 2:15   | 67,200  | 34,400  | 418,000 | 66,800  | 24   | 416   | 59,72 |
|            | 2:30   | 60,400  | 35,200  | 410,000 | 60,000  | 24   | 408   | 59,72 |
|            | 2:45   | 66,400  | 34,800  | 425,000 | 66,400  | 24,4 | 423   | 59,72 |
|            | 3:00   | 60,800  | 34,800  | 418,000 | 60,000  | 23,2 | 416   | 59,72 |
|            | 3:15   | 66,000  | 33,600  | 425,000 | 65,600  | 22,8 | 423   | 59,72 |
|            | 3:30   | 64,800  | 33,200  | 418,000 | 64,800  | 22,4 | 416   | 59,72 |
|            | 3:45   | 66,000  | 33,600  | 410,000 | 65,600  | 22,4 | 408   | 59,72 |
|            | 4:00   | 66,000  | 33,200  | 425,000 | 65,600  | 22,4 | 423   | 59,72 |
|            | 4:15   | 69,200  | 33,600  | 418,000 | 68,800  | 23,2 | 416   | 59,72 |
|            | 4:30   | 66,400  | 33,200  | 425,000 | 66,000  | 22,4 | 423   | 59,72 |
|            | 4:45   | 65,200  | 32,800  | 402,000 | 64,800  | 22   | 400   | 59,72 |
|            | 5:00   | 64,000  | 32,400  | 425,000 | 64,000  | 21,6 | 423   | 59,72 |
|            | 5:15   | 66,400  | 33,200  | 418,000 | 65,600  | 22   | 416   | 59,72 |
|            | 5:30   | 73,600  | 32,800  | 425,000 | 73,200  | 22,8 | 423   | 59,72 |
|            | 5:45   | 68,000  | 32,800  | 418,000 | 67,600  | 22,4 | 416   | 59,72 |
|            | 6:00   | 64,800  | 33,200  | 410,000 | 64,800  | 22   | 408   | 59,72 |
|            | 6:15   | 72,800  | 32,800  | 425,000 | 72,400  | 22,8 | 423   | 59,72 |
|            | 6:30   | 73,200  | 32,400  | 418,000 | 72,800  | 22   | 416   | 59,72 |
|            | 6:45   | 72,000  | 29,200  | 425,000 | 71,200  | 18,4 | 423   | 59,72 |
|            | 7:00   | 63,600  | 27,600  | 418,000 | 63,600  | 16,4 | 416   | 59,72 |
|            | 7:15   | 77,200  | 27,600  | 425,000 | 76,800  | 17,6 | 423   | 59,72 |
|            | 7:30   | 77,600  | 26,400  | 410,000 | 76,800  | 16,4 | 408   | 59,72 |
|            | 7:45   | 70,800  | 26,800  | 418,000 | 70,800  | 16   | 416   | 59,72 |
|            | 8:00   | 70,800  | 26,800  | 418,000 | 70,400  | 16   | 416   | 59,72 |
|            | 8:15   | 78,800  | 27,200  | 425,000 | 78,000  | 17,6 | 423   | 59,72 |
|            | 8:30   | 79,200  | 26,800  | 410,000 | 78,800  | 17,6 | 408   | 59,72 |
|            | 8:45   | 77,600  | 26,400  | 418,000 | 77,200  | 16,8 | 416   | 59,72 |
|            | 9:00   | 78,000  | 27,600  | 425,000 | 77,600  | 16,8 | 423   | 59,72 |
|            | 9:15   | 77,600  | 27,200  | 410,000 | 76,800  | 17,6 | 408   | 59,72 |
|            | 9:30   | 79,200  | 27,200  | 418,000 | 78,800  | 18   | 416   | 59,72 |
|            | 9:45   | 79,600  | 27,600  | 410,000 | 79,200  | 17,6 | 408   | 59,72 |
|            | 10:00  | 84,000  | 29,200  | 425,000 | 83,200  | 18,8 | 423   | 59,72 |
| 10:15      | 86,000 | 29,200  | 418,000 | 85,600  | 20,4    | 416  | 59,72 |       |

|  |       |        |        |         |        |      |     |       |
|--|-------|--------|--------|---------|--------|------|-----|-------|
|  | 10:30 | 82,000 | 28,800 | 410,000 | 81,600 | 20   | 408 | 59,72 |
|  | 10:45 | 82,800 | 28,800 | 418,000 | 82,400 | 19,6 | 416 | 59,72 |
|  | 11:00 | 82,000 | 28,800 | 410,000 | 81,200 | 20   | 408 | 59,72 |
|  | 11:15 | 81,600 | 28,800 | 425,000 | 81,200 | 19,6 | 423 | 59,72 |
|  | 11:30 | 85,200 | 28,800 | 410,000 | 84,800 | 20   | 408 | 59,72 |
|  | 11:45 | 80,400 | 29,200 | 418,000 | 79,600 | 19,6 | 416 | 59,72 |
|  | 12:00 | 82,000 | 29,200 | 410,000 | 81,200 | 20   | 408 | 59,72 |
|  | 12:15 | 87,600 | 29,200 | 425,000 | 87,200 | 20,8 | 423 | 59,72 |
|  | 12:30 | 78,800 | 30,000 | 410,000 | 78,400 | 20   | 408 | 59,72 |
|  | 12:45 | 85,600 | 31,600 | 418,000 | 85,200 | 21,2 | 416 | 59,72 |
|  | 13:00 | 84,400 | 32,000 | 410,000 | 83,600 | 23,2 | 408 | 59,72 |
|  | 13:15 | 91,600 | 32,000 | 425,000 | 90,800 | 24,4 | 423 | 59,72 |
|  | 13:30 | 86,000 | 32,000 | 402,000 | 85,200 | 23,6 | 400 | 59,72 |
|  | 13:45 | 89,200 | 32,400 | 425,000 | 88,800 | 24,4 | 423 | 59,72 |
|  | 14:00 | 89,200 | 33,200 | 410,000 | 88,400 | 24,4 | 408 | 59,72 |
|  | 14:15 | 90,400 | 33,200 | 410,000 | 89,600 | 25,2 | 408 | 59,72 |
|  | 14:30 | 89,200 | 33,600 | 418,000 | 88,800 | 25,6 | 416 | 59,72 |
|  | 14:45 | 88,400 | 33,600 | 425,000 | 87,600 | 25,2 | 423 | 59,72 |
|  | 15:00 | 88,400 | 33,200 | 410,000 | 88,000 | 25,6 | 408 | 59,72 |
|  | 15:15 | 83,600 | 33,600 | 418,000 | 82,800 | 24,4 | 416 | 59,72 |
|  | 15:30 | 85,600 | 33,600 | 410,000 | 85,200 | 25,2 | 408 | 59,72 |
|  | 15:45 | 84,400 | 33,600 | 425,000 | 84,000 | 25,2 | 423 | 59,72 |
|  | 16:00 | 85,200 | 33,600 | 402,000 | 84,400 | 25,2 | 400 | 59,72 |
|  | 16:15 | 83,600 | 33,600 | 425,000 | 83,200 | 24,4 | 423 | 59,72 |
|  | 16:30 | 76,400 | 32,800 | 418,000 | 75,600 | 23,2 | 416 | 59,72 |
|  | 16:45 | 81,200 | 32,400 | 410,000 | 80,800 | 23,2 | 408 | 59,72 |
|  | 17:00 | 79,600 | 32,400 | 425,000 | 79,200 | 23,6 | 423 | 59,72 |
|  | 17:15 | 70,000 | 32,800 | 418,000 | 69,600 | 22,4 | 416 | 59,72 |
|  | 17:30 | 76,800 | 32,800 | 410,000 | 76,400 | 23,2 | 408 | 59,72 |
|  | 17:45 | 79,200 | 32,000 | 425,000 | 78,400 | 22,4 | 423 | 59,72 |
|  | 18:00 | 79,200 | 32,400 | 410,000 | 79,200 | 23,2 | 408 | 59,72 |
|  | 18:15 | 73,600 | 31,200 | 418,000 | 72,800 | 21,2 | 416 | 59,72 |
|  | 18:30 | 72,000 | 31,200 | 425,000 | 71,600 | 21,2 | 423 | 59,72 |
|  | 18:45 | 73,200 | 31,200 | 410,000 | 73,200 | 20,8 | 408 | 59,72 |
|  | 19:00 | 76,400 | 31,200 | 418,000 | 75,600 | 21,6 | 416 | 59,72 |
|  | 19:15 | 87,200 | 31,200 | 410,000 | 86,800 | 22,8 | 408 | 59,72 |
|  | 19:30 | 84,800 | 30,800 | 418,000 | 84,000 | 22,4 | 416 | 59,72 |
|  | 19:45 | 77,200 | 30,800 | 425,000 | 77,200 | 21,2 | 423 | 59,72 |
|  | 20:00 | 78,000 | 31,200 | 410,000 | 77,200 | 21,6 | 408 | 59,72 |
|  | 20:15 | 76,800 | 30,800 | 418,000 | 76,400 | 21,2 | 416 | 59,72 |
|  | 20:30 | 73,200 | 30,800 | 425,000 | 72,400 | 20,4 | 423 | 59,72 |
|  | 20:45 | 76,800 | 30,800 | 410,000 | 76,800 | 21,2 | 408 | 59,72 |
|  | 21:00 | 76,800 | 30,000 | 418,000 | 76,400 | 20,8 | 416 | 59,72 |
|  | 21:15 | 80,000 | 30,400 | 410,000 | 79,200 | 20,8 | 408 | 59,72 |
|  | 21:30 | 79,600 | 29,600 | 425,000 | 79,200 | 20,4 | 423 | 59,72 |
|  | 21:45 | 84,000 | 30,400 | 402,000 | 83,600 | 21,6 | 400 | 59,72 |
|  | 22:00 | 81,200 | 30,000 | 425,000 | 80,800 | 21,2 | 423 | 59,72 |
|  | 22:15 | 68,800 | 28,800 | 410,000 | 68,000 | 18   | 408 | 59,72 |
|  | 22:30 | 69,600 | 28,800 | 418,000 | 69,200 | 18,4 | 416 | 59,72 |
|  | 22:45 | 76,800 | 29,600 | 410,000 | 76,800 | 20   | 408 | 59,72 |
|  | 23:00 | 71,200 | 32,400 | 425,000 | 70,800 | 22   | 423 | 59,72 |
|  | 23:15 | 66,000 | 35,200 | 410,000 | 65,600 | 25,2 | 408 | 59,72 |
|  | 23:30 | 58,400 | 36,000 | 418,000 | 58,000 | 24,8 | 416 | 59,72 |
|  | 23:45 | 58,000 | 36,400 | 410,000 | 57,600 | 25,2 | 408 | 59,72 |
|  | 0:00  | 58,400 | 34,800 | 425,000 | 58,400 | 24   | 423 | 59,72 |
|  | 0:15  | 62,800 | 34,000 | 410,000 | 62,400 | 23,2 | 408 | 54,29 |
|  | 0:30  | 62,400 | 34,000 | 418,000 | 62,000 | 23,2 | 416 | 54,29 |
|  | 0:45  | 61,600 | 33,600 | 410,000 | 61,200 | 22,4 | 408 | 54,29 |
|  | 1:00  | 59,600 | 33,200 | 418,000 | 59,600 | 22   | 416 | 54,29 |
|  | 1:15  | 56,400 | 32,800 | 410,000 | 56,000 | 21,6 | 408 | 54,29 |
|  | 1:30  | 55,600 | 32,800 | 425,000 | 55,200 | 21,2 | 423 | 54,29 |
|  | 1:45  | 50,000 | 32,400 | 418,000 | 49,600 | 20,4 | 416 | 54,29 |
|  | 2:00  | 50,800 | 32,000 | 410,000 | 50,800 | 20   | 408 | 54,29 |
|  | 2:15  | 48,800 | 30,800 | 425,000 | 48,800 | 18,8 | 423 | 54,29 |
|  | 2:30  | 44,800 | 30,400 | 410,000 | 44,400 | 17,6 | 408 | 54,29 |
|  | 2:45  | 43,200 | 30,000 | 418,000 | 43,200 | 17,6 | 416 | 54,29 |
|  | 3:00  | 43,600 | 30,000 | 425,000 | 43,200 | 17,2 | 423 | 54,29 |
|  | 3:15  | 48,000 | 30,000 | 402,000 | 48,000 | 17,6 | 400 | 54,29 |
|  | 3:30  | 48,400 | 30,800 | 425,000 | 48,000 | 18,4 | 423 | 54,29 |
|  | 3:45  | 46,000 | 30,800 | 418,000 | 46,000 | 18,4 | 416 | 54,29 |
|  | 4:00  | 44,000 | 31,200 | 425,000 | 43,600 | 18,4 | 423 | 54,29 |
|  | 4:15  | 45,600 | 31,600 | 410,000 | 45,600 | 19,2 | 408 | 54,29 |
|  | 4:30  | 46,000 | 32,000 | 418,000 | 45,600 | 19,6 | 416 | 54,29 |
|  | 4:45  | 48,800 | 31,600 | 425,000 | 48,800 | 19,2 | 423 | 54,29 |
|  | 5:00  | 49,200 | 31,200 | 418,000 | 49,200 | 18,8 | 416 | 54,29 |
|  | 5:15  | 63,600 | 33,200 | 410,000 | 62,800 | 22   | 408 | 54,29 |
|  | 5:30  | 51,600 | 30,400 | 425,000 | 51,600 | 18,4 | 423 | 54,29 |
|  | 5:45  | 51,600 | 30,400 | 418,000 | 51,200 | 17,6 | 416 | 54,29 |
|  | 6:00  | 51,200 | 30,400 | 425,000 | 51,200 | 18   | 423 | 54,29 |
|  | 6:15  | 65,600 | 30,400 | 418,000 | 65,200 | 19,6 | 416 | 54,29 |

19.7.2015.



|            |        |        |         |         |        |      |       |       |
|------------|--------|--------|---------|---------|--------|------|-------|-------|
|            | 6:30   | 62,000 | 30,000  | 418,000 | 61,600 | 18,4 | 416   | 54,29 |
|            | 6:45   | 66,800 | 29,200  | 425,000 | 66,400 | 18,4 | 423   | 54,29 |
|            | 7:00   | 60,800 | 28,400  | 418,000 | 60,400 | 16,4 | 416   | 54,29 |
|            | 7:15   | 73,200 | 27,600  | 425,000 | 72,800 | 17,2 | 423   | 54,29 |
|            | 7:30   | 72,400 | 28,400  | 418,000 | 72,000 | 18   | 416   | 54,29 |
|            | 7:45   | 67,200 | 28,400  | 425,000 | 67,200 | 17,2 | 423   | 54,29 |
|            | 8:00   | 68,000 | 28,400  | 410,000 | 67,600 | 17,6 | 408   | 54,29 |
|            | 8:15   | 77,600 | 29,600  | 418,000 | 77,200 | 19,6 | 416   | 54,29 |
|            | 8:30   | 72,400 | 30,400  | 425,000 | 71,600 | 20   | 423   | 54,29 |
|            | 8:45   | 72,400 | 30,400  | 418,000 | 72,400 | 20   | 416   | 54,29 |
|            | 9:00   | 71,600 | 30,400  | 425,000 | 70,800 | 19,6 | 423   | 54,29 |
|            | 9:15   | 67,600 | 30,400  | 418,000 | 67,200 | 19,6 | 416   | 54,29 |
|            | 9:30   | 67,600 | 30,000  | 410,000 | 67,200 | 19,2 | 408   | 54,29 |
|            | 9:45   | 66,800 | 30,000  | 418,000 | 66,800 | 19,2 | 416   | 54,29 |
|            | 10:00  | 66,000 | 30,000  | 425,000 | 65,200 | 18,8 | 423   | 54,29 |
|            | 10:15  | 71,200 | 30,400  | 418,000 | 70,800 | 20,4 | 416   | 54,29 |
|            | 10:30  | 70,000 | 30,400  | 410,000 | 70,000 | 19,6 | 408   | 54,29 |
|            | 10:45  | 74,000 | 30,800  | 425,000 | 73,600 | 20,8 | 423   | 54,29 |
|            | 11:00  | 69,200 | 30,800  | 418,000 | 68,800 | 20   | 416   | 54,29 |
|            | 11:15  | 72,800 | 30,800  | 410,000 | 72,000 | 20,8 | 408   | 54,29 |
|            | 11:30  | 74,400 | 31,600  | 425,000 | 74,400 | 21,6 | 423   | 54,29 |
|            | 11:45  | 72,000 | 31,200  | 418,000 | 71,200 | 21,2 | 416   | 54,29 |
|            | 12:00  | 70,800 | 32,000  | 410,000 | 70,400 | 21,6 | 408   | 54,29 |
|            | 12:15  | 75,200 | 32,400  | 425,000 | 74,800 | 22,4 | 423   | 54,29 |
|            | 12:30  | 72,400 | 32,000  | 418,000 | 72,400 | 22   | 416   | 54,29 |
|            | 12:45  | 68,400 | 32,000  | 410,000 | 67,600 | 21,6 | 408   | 54,29 |
|            | 13:00  | 70,800 | 32,800  | 418,000 | 70,400 | 22   | 416   | 54,29 |
|            | 13:15  | 68,000 | 32,800  | 425,000 | 67,600 | 22   | 423   | 54,29 |
|            | 13:30  | 68,800 | 32,400  | 410,000 | 68,400 | 22,4 | 408   | 54,29 |
|            | 13:45  | 68,400 | 32,800  | 418,000 | 68,000 | 22   | 416   | 54,29 |
|            | 14:00  | 65,200 | 32,800  | 425,000 | 64,800 | 22   | 423   | 54,29 |
|            | 14:15  | 67,600 | 33,600  | 418,000 | 67,200 | 22,8 | 416   | 54,29 |
|            | 14:30  | 67,200 | 33,600  | 410,000 | 67,200 | 22,8 | 408   | 54,29 |
|            | 14:45  | 67,200 | 32,800  | 425,000 | 66,400 | 22   | 423   | 54,29 |
|            | 15:00  | 73,200 | 32,000  | 418,000 | 73,200 | 22   | 416   | 54,29 |
|            | 15:15  | 73,600 | 32,400  | 410,000 | 72,800 | 22,4 | 408   | 54,29 |
|            | 15:30  | 74,000 | 32,400  | 425,000 | 73,600 | 22,4 | 423   | 54,29 |
|            | 15:45  | 72,000 | 32,000  | 418,000 | 71,600 | 22   | 416   | 54,29 |
|            | 16:00  | 68,400 | 32,000  | 410,000 | 68,000 | 21,2 | 408   | 54,29 |
|            | 16:15  | 66,400 | 32,000  | 418,000 | 66,000 | 21,2 | 416   | 54,29 |
|            | 16:30  | 68,800 | 32,000  | 425,000 | 68,400 | 21,2 | 423   | 54,29 |
|            | 16:45  | 72,000 | 32,000  | 410,000 | 71,600 | 22   | 408   | 54,29 |
|            | 17:00  | 72,000 | 31,600  | 418,000 | 71,600 | 21,6 | 416   | 54,29 |
|            | 17:15  | 72,800 | 30,800  | 425,000 | 72,400 | 20,8 | 423   | 54,29 |
|            | 17:30  | 74,000 | 30,400  | 410,000 | 73,600 | 20   | 408   | 54,29 |
|            | 17:45  | 74,000 | 30,800  | 418,000 | 73,600 | 20,8 | 416   | 54,29 |
|            | 18:00  | 73,600 | 30,400  | 410,000 | 73,200 | 20   | 408   | 54,29 |
|            | 18:15  | 74,400 | 30,000  | 425,000 | 73,600 | 20,4 | 423   | 54,29 |
|            | 18:30  | 76,800 | 30,800  | 418,000 | 76,800 | 21,2 | 416   | 54,29 |
|            | 18:45  | 78,000 | 30,400  | 410,000 | 77,200 | 20,8 | 408   | 54,29 |
|            | 19:00  | 77,600 | 31,200  | 418,000 | 77,200 | 21,6 | 416   | 54,29 |
|            | 19:15  | 70,000 | 30,800  | 410,000 | 70,000 | 20,4 | 408   | 54,29 |
|            | 19:30  | 73,600 | 31,600  | 425,000 | 72,800 | 21,6 | 423   | 54,29 |
|            | 19:45  | 73,200 | 31,600  | 418,000 | 73,200 | 21,6 | 416   | 54,29 |
|            | 20:00  | 72,400 | 31,600  | 410,000 | 71,600 | 21,6 | 408   | 54,29 |
|            | 20:15  | 75,600 | 31,600  | 425,000 | 75,200 | 21,6 | 423   | 54,29 |
|            | 20:30  | 72,400 | 32,000  | 418,000 | 72,400 | 21,6 | 416   | 54,29 |
|            | 20:45  | 74,400 | 32,400  | 410,000 | 73,600 | 22,4 | 408   | 54,29 |
|            | 21:00  | 76,400 | 31,600  | 425,000 | 76,000 | 22,4 | 423   | 54,29 |
|            | 21:15  | 71,200 | 31,600  | 402,000 | 70,800 | 21,2 | 400   | 54,29 |
|            | 21:30  | 75,200 | 34,000  | 410,000 | 74,800 | 24,8 | 408   | 54,29 |
|            | 21:45  | 79,200 | 34,800  | 425,000 | 78,400 | 26   | 423   | 54,29 |
|            | 22:00  | 74,800 | 36,800  | 410,000 | 74,800 | 27,6 | 408   | 54,29 |
|            | 22:15  | 66,000 | 36,000  | 418,000 | 65,600 | 26   | 416   | 54,29 |
|            | 22:30  | 71,200 | 36,000  | 410,000 | 70,800 | 26   | 408   | 54,29 |
|            | 22:45  | 69,200 | 35,600  | 410,000 | 68,800 | 26   | 408   | 54,29 |
|            | 23:00  | 65,200 | 36,000  | 425,000 | 64,800 | 25,2 | 423   | 54,29 |
|            | 23:15  | 58,800 | 35,600  | 410,000 | 58,400 | 24,8 | 408   | 54,29 |
|            | 23:30  | 56,400 | 35,200  | 418,000 | 56,400 | 24   | 416   | 54,29 |
|            | 23:45  | 61,600 | 35,600  | 410,000 | 61,200 | 24,4 | 408   | 54,29 |
|            | 0:00   | 55,600 | 34,800  | 418,000 | 55,600 | 23,6 | 416   | 54,29 |
| 20.7.2015. | 0:15   | 58,800 | 35,200  | 410,000 | 58,400 | 24   | 408   | 69,86 |
|            | 0:30   | 60,400 | 34,400  | 425,000 | 59,600 | 23,6 | 423   | 69,86 |
|            | 0:45   | 56,000 | 34,000  | 410,000 | 56,000 | 22,4 | 408   | 69,86 |
|            | 1:00   | 59,600 | 33,200  | 418,000 | 59,600 | 22,4 | 416   | 69,86 |
|            | 1:15   | 60,400 | 33,200  | 410,000 | 60,000 | 21,6 | 408   | 69,86 |
|            | 1:30   | 62,000 | 32,800  | 425,000 | 61,600 | 22   | 423   | 69,86 |
|            | 1:45   | 66,800 | 33,200  | 410,000 | 66,400 | 22,8 | 408   | 69,86 |
|            | 2:00   | 64,400 | 33,200  | 418,000 | 64,000 | 22   | 416   | 69,86 |
| 2:15       | 63,600 | 33,600 | 425,000 | 63,600  | 22,8   | 423  | 69,86 |       |

|       |        |        |         |        |      |     |       |
|-------|--------|--------|---------|--------|------|-----|-------|
| 2:30  | 58,000 | 33,600 | 402,000 | 57,600 | 22,4 | 400 | 69,86 |
| 2:45  | 57,600 | 33,600 | 425,000 | 57,200 | 22   | 423 | 69,86 |
| 3:00  | 58,000 | 32,800 | 418,000 | 58,000 | 21,6 | 416 | 69,86 |
| 3:15  | 61,200 | 32,800 | 410,000 | 60,800 | 21,6 | 408 | 69,86 |
| 3:30  | 62,400 | 32,800 | 425,000 | 62,000 | 21,6 | 423 | 69,86 |
| 3:45  | 60,000 | 32,400 | 418,000 | 59,600 | 21,2 | 416 | 69,86 |
| 4:00  | 58,000 | 31,600 | 410,000 | 57,600 | 20   | 408 | 69,86 |
| 4:15  | 60,400 | 32,400 | 425,000 | 60,400 | 21,2 | 423 | 69,86 |
| 4:30  | 61,200 | 32,400 | 418,000 | 60,800 | 21,2 | 416 | 69,86 |
| 4:45  | 62,800 | 32,400 | 410,000 | 62,800 | 20,8 | 408 | 69,86 |
| 5:00  | 59,200 | 32,800 | 425,000 | 58,400 | 21,6 | 423 | 69,86 |
| 5:15  | 66,000 | 32,800 | 418,000 | 66,000 | 22,4 | 416 | 69,86 |
| 5:30  | 62,800 | 29,600 | 418,000 | 62,400 | 18   | 416 | 69,86 |
| 5:45  | 62,400 | 26,400 | 425,000 | 62,000 | 14,4 | 423 | 69,86 |
| 6:00  | 56,400 | 25,600 | 418,000 | 56,400 | 13,6 | 416 | 69,86 |
| 6:15  | 75,600 | 28,400 | 425,000 | 75,200 | 18   | 423 | 69,86 |
| 6:30  | 78,000 | 29,600 | 418,000 | 77,600 | 19,6 | 416 | 69,86 |
| 6:45  | 82,400 | 29,600 | 425,000 | 81,600 | 20   | 423 | 69,86 |
| 7:00  | 80,000 | 29,200 | 418,000 | 79,200 | 19,6 | 416 | 69,86 |
| 7:15  | 82,000 | 28,800 | 425,000 | 81,600 | 19,2 | 423 | 69,86 |
| 7:30  | 82,400 | 28,800 | 410,000 | 82,000 | 19,6 | 408 | 69,86 |
| 7:45  | 83,600 | 29,600 | 418,000 | 83,200 | 20,4 | 416 | 69,86 |
| 8:00  | 84,000 | 29,600 | 425,000 | 83,600 | 21,2 | 423 | 69,86 |
| 8:15  | 92,000 | 28,400 | 410,000 | 91,200 | 20,8 | 408 | 69,86 |
| 8:30  | 97,200 | 28,400 | 410,000 | 96,400 | 22   | 408 | 69,86 |
| 8:45  | 90,400 | 30,000 | 402,000 | 90,000 | 22,4 | 400 | 69,86 |
| 9:00  | 92,800 | 30,400 | 410,000 | 92,000 | 23,2 | 408 | 69,86 |
| 9:15  | 86,000 | 31,600 | 425,000 | 85,200 | 24   | 423 | 69,86 |
| 9:30  | 81,200 | 32,400 | 410,000 | 80,800 | 23,6 | 408 | 69,86 |
| 9:45  | 85,200 | 32,800 | 410,000 | 84,400 | 25,2 | 408 | 69,86 |
| 10:00 | 85,200 | 34,400 | 410,000 | 84,800 | 26,4 | 408 | 69,86 |
| 10:15 | 89,200 | 34,800 | 394,000 | 88,400 | 28,4 | 392 | 69,86 |
| 10:30 | 86,000 | 34,400 | 410,000 | 85,600 | 27,2 | 408 | 69,86 |
| 10:45 | 86,800 | 34,000 | 410,000 | 86,400 | 26,8 | 408 | 69,86 |
| 11:00 | 87,200 | 33,600 | 394,000 | 86,000 | 26,8 | 392 | 69,86 |
| 11:15 | 86,800 | 33,200 | 410,000 | 86,400 | 26   | 408 | 69,86 |
| 11:30 | 89,200 | 32,800 | 402,000 | 88,800 | 26,4 | 400 | 69,86 |
| 11:45 | 88,800 | 32,800 | 394,000 | 88,000 | 26,4 | 392 | 69,86 |
| 12:00 | 90,800 | 32,800 | 410,000 | 90,000 | 26,4 | 408 | 69,86 |
| 12:15 | 90,400 | 32,000 | 402,000 | 89,600 | 26   | 400 | 69,86 |
| 12:30 | 87,200 | 32,400 | 394,000 | 86,800 | 25,6 | 392 | 69,86 |
| 12:45 | 88,000 | 33,200 | 410,000 | 86,800 | 26,4 | 408 | 69,86 |
| 13:00 | 84,000 | 33,200 | 394,000 | 83,600 | 26,4 | 392 | 69,86 |
| 13:15 | 84,000 | 34,000 | 402,000 | 83,600 | 26,8 | 400 | 69,86 |
| 13:30 | 82,000 | 33,600 | 410,000 | 81,600 | 26,4 | 408 | 69,86 |
| 13:45 | 86,000 | 33,600 | 394,000 | 84,800 | 26,8 | 392 | 69,86 |
| 14:00 | 86,000 | 34,000 | 394,000 | 85,600 | 27,2 | 392 | 69,86 |
| 14:15 | 84,800 | 34,800 | 410,000 | 84,000 | 27,6 | 408 | 69,86 |
| 14:30 | 83,200 | 34,400 | 402,000 | 82,800 | 27,6 | 400 | 69,86 |
| 14:45 | 84,000 | 34,800 | 394,000 | 83,200 | 27,6 | 392 | 69,86 |
| 15:00 | 85,600 | 35,200 | 410,000 | 85,200 | 28   | 408 | 69,86 |
| 15:15 | 86,400 | 35,200 | 402,000 | 85,600 | 28,4 | 400 | 69,86 |
| 15:30 | 84,800 | 35,200 | 410,000 | 84,400 | 28,4 | 408 | 69,86 |
| 15:45 | 86,000 | 34,800 | 394,000 | 85,600 | 28   | 392 | 69,86 |
| 16:00 | 87,600 | 35,200 | 410,000 | 86,400 | 28,4 | 408 | 69,86 |
| 16:15 | 88,400 | 36,000 | 394,000 | 87,600 | 29,2 | 392 | 69,86 |
| 16:30 | 82,400 | 36,000 | 410,000 | 82,400 | 28,8 | 408 | 69,86 |
| 16:45 | 84,400 | 35,600 | 402,000 | 83,600 | 28,4 | 400 | 69,86 |
| 17:00 | 85,200 | 35,600 | 410,000 | 84,800 | 28,8 | 408 | 69,86 |
| 17:15 | 86,400 | 35,600 | 394,000 | 85,600 | 28,4 | 392 | 69,86 |
| 17:30 | 85,600 | 36,000 | 410,000 | 85,200 | 28,4 | 408 | 69,86 |
| 17:45 | 85,600 | 35,200 | 410,000 | 84,800 | 28,4 | 408 | 69,86 |
| 18:00 | 86,400 | 35,600 | 394,000 | 85,600 | 28,4 | 392 | 69,86 |
| 18:15 | 85,600 | 34,800 | 410,000 | 85,200 | 28   | 408 | 69,86 |
| 18:30 | 88,000 | 34,800 | 410,000 | 87,200 | 28   | 408 | 69,86 |
| 18:45 | 88,000 | 34,800 | 402,000 | 87,600 | 27,6 | 400 | 69,86 |
| 19:00 | 86,800 | 34,000 | 410,000 | 86,000 | 27,2 | 408 | 69,86 |
| 19:15 | 92,000 | 32,400 | 394,000 | 91,200 | 26   | 392 | 69,86 |
| 19:30 | 91,200 | 31,600 | 410,000 | 90,800 | 24,8 | 408 | 69,86 |
| 19:45 | 87,200 | 31,200 | 410,000 | 86,400 | 24   | 408 | 69,86 |
| 20:00 | 87,600 | 31,200 | 410,000 | 87,200 | 23,2 | 408 | 69,86 |
| 20:15 | 85,600 | 31,200 | 410,000 | 85,200 | 24   | 408 | 69,86 |
| 20:30 | 84,400 | 31,600 | 410,000 | 83,600 | 23,2 | 408 | 69,86 |
| 20:45 | 86,800 | 31,600 | 410,000 | 86,000 | 24   | 408 | 69,86 |
| 21:00 | 87,600 | 30,400 | 410,000 | 87,200 | 23,2 | 408 | 69,86 |
| 21:15 | 85,200 | 30,400 | 394,000 | 84,400 | 22,4 | 392 | 69,86 |
| 21:30 | 91,600 | 29,600 | 410,000 | 91,200 | 23,2 | 408 | 69,86 |
| 21:45 | 93,200 | 30,400 | 410,000 | 92,400 | 23,6 | 408 | 69,86 |
| 22:00 | 94,800 | 30,400 | 394,000 | 94,000 | 24,4 | 392 | 69,86 |
| 22:15 | 88,800 | 30,000 | 410,000 | 88,400 | 22,8 | 408 | 69,86 |

|            |        |        |         |         |        |      |       |       |
|------------|--------|--------|---------|---------|--------|------|-------|-------|
|            | 22:30  | 91,600 | 30,400  | 410,000 | 90,800 | 23,6 | 408   | 69,86 |
|            | 22:45  | 90,400 | 30,800  | 410,000 | 90,000 | 23,6 | 408   | 69,86 |
|            | 23:00  | 88,000 | 30,800  | 410,000 | 87,200 | 23,6 | 408   | 69,86 |
|            | 23:15  | 92,400 | 29,600  | 410,000 | 92,000 | 22,8 | 408   | 69,86 |
|            | 23:30  | 88,400 | 30,400  | 410,000 | 87,600 | 22,8 | 408   | 69,86 |
|            | 23:45  | 89,600 | 31,200  | 410,000 | 88,800 | 23,6 | 408   | 69,86 |
|            | 0:00   | 86,800 | 30,800  | 410,000 | 86,400 | 23,2 | 408   | 69,86 |
| 21.7.2015. | 0:15   | 80,800 | 32,400  | 410,027 | 80,400 | 23,6 | 408   | 69,67 |
|            | 0:30   | 78,400 | 31,600  | 417,800 | 78,000 | 22,8 | 416   | 69,67 |
|            | 0:45   | 74,000 | 32,400  | 410,027 | 73,600 | 22,4 | 408   | 69,67 |
|            | 1:00   | 73,200 | 32,000  | 410,027 | 72,400 | 22,4 | 408   | 69,67 |
|            | 1:15   | 67,600 | 33,200  | 417,800 | 67,600 | 22,8 | 416   | 69,67 |
|            | 1:30   | 68,000 | 33,200  | 425,430 | 67,600 | 22,4 | 423   | 69,67 |
|            | 1:45   | 68,400 | 33,600  | 410,027 | 68,000 | 23,2 | 408   | 69,67 |
|            | 2:00   | 67,200 | 33,600  | 417,800 | 66,800 | 23,2 | 416   | 69,67 |
|            | 2:15   | 66,400 | 32,800  | 410,027 | 66,000 | 22,4 | 408   | 69,67 |
|            | 2:30   | 63,600 | 33,600  | 425,430 | 63,600 | 22,4 | 423   | 69,67 |
|            | 2:45   | 65,200 | 33,600  | 417,800 | 64,400 | 22,8 | 416   | 69,67 |
|            | 3:00   | 63,600 | 33,600  | 425,430 | 63,600 | 22,8 | 423   | 69,67 |
|            | 3:15   | 74,800 | 33,600  | 417,800 | 74,400 | 23,6 | 416   | 69,67 |
|            | 3:30   | 71,600 | 33,200  | 410,027 | 71,200 | 23,2 | 408   | 69,67 |
|            | 3:45   | 71,200 | 33,600  | 425,430 | 70,800 | 23,2 | 423   | 69,67 |
|            | 4:00   | 70,000 | 33,200  | 417,800 | 70,000 | 22,8 | 416   | 69,67 |
|            | 4:15   | 69,600 | 33,200  | 425,430 | 68,800 | 22,4 | 423   | 69,67 |
|            | 4:30   | 72,400 | 33,200  | 417,800 | 72,000 | 22,8 | 416   | 69,67 |
|            | 4:45   | 76,400 | 32,400  | 410,027 | 76,400 | 22,8 | 408   | 69,67 |
|            | 5:00   | 73,200 | 32,400  | 417,800 | 72,400 | 22,4 | 416   | 69,67 |
|            | 5:15   | 76,800 | 30,400  | 425,430 | 76,400 | 20   | 423   | 69,67 |
|            | 5:30   | 80,000 | 27,600  | 417,800 | 79,600 | 18   | 416   | 69,67 |
|            | 5:45   | 76,800 | 28,000  | 432,924 | 76,400 | 17,6 | 431   | 69,67 |
|            | 6:00   | 73,200 | 28,400  | 425,430 | 72,800 | 17,2 | 423   | 69,67 |
|            | 6:15   | 80,800 | 27,200  | 425,430 | 80,400 | 17,2 | 423   | 69,67 |
|            | 6:30   | 77,600 | 28,400  | 425,430 | 77,200 | 18   | 423   | 69,67 |
|            | 6:45   | 78,000 | 28,000  | 417,800 | 77,200 | 17,6 | 416   | 69,67 |
|            | 7:00   | 79,600 | 26,800  | 425,430 | 79,200 | 16,8 | 423   | 69,67 |
|            | 7:15   | 86,400 | 24,800  | 417,800 | 86,000 | 16   | 416   | 69,67 |
|            | 7:30   | 86,000 | 25,600  | 425,430 | 85,200 | 16,8 | 423   | 69,67 |
|            | 7:45   | 82,400 | 27,200  | 417,800 | 82,000 | 17,6 | 416   | 69,67 |
|            | 8:00   | 87,200 | 26,400  | 410,027 | 86,800 | 18   | 408   | 69,67 |
|            | 8:15   | 88,400 | 27,200  | 417,800 | 87,600 | 18,8 | 416   | 69,67 |
|            | 8:30   | 88,000 | 26,800  | 410,027 | 87,600 | 19,2 | 408   | 69,67 |
|            | 8:45   | 86,400 | 27,200  | 410,027 | 85,600 | 18,8 | 408   | 69,67 |
|            | 9:00   | 88,800 | 26,400  | 410,027 | 88,000 | 18,4 | 408   | 69,67 |
|            | 9:15   | 88,400 | 26,400  | 410,027 | 88,000 | 18,4 | 408   | 69,67 |
|            | 9:30   | 84,000 | 28,000  | 410,027 | 83,200 | 20   | 408   | 69,67 |
|            | 9:45   | 82,800 | 29,600  | 410,027 | 82,400 | 21,2 | 408   | 69,67 |
|            | 10:00  | 82,400 | 29,600  | 425,430 | 82,000 | 21,2 | 423   | 69,67 |
|            | 10:15  | 80,800 | 29,600  | 425,354 | 80,400 | 20,8 | 423   | 69,67 |
|            | 10:30  | 79,600 | 29,600  | 409,870 | 79,200 | 20,8 | 408   | 69,67 |
|            | 10:45  | 79,200 | 29,200  | 409,870 | 78,800 | 20,4 | 408   | 69,67 |
|            | 11:00  | 81,600 | 28,000  | 409,870 | 80,800 | 20   | 408   | 69,67 |
|            | 11:15  | 81,600 | 28,000  | 410,027 | 80,800 | 19,6 | 408   | 69,67 |
|            | 11:30  | 81,600 | 28,400  | 410,027 | 81,200 | 20,4 | 408   | 69,67 |
|            | 11:45  | 79,600 | 28,000  | 394,020 | 79,200 | 19,6 | 392   | 69,67 |
|            | 12:00  | 80,800 | 29,200  | 410,027 | 80,000 | 21,2 | 408   | 69,67 |
| 12:15      | 81,600 | 29,600 | 410,027 | 81,200  | 21,6   | 408  | 69,67 |       |
| 12:30      | 80,400 | 29,600 | 394,020 | 80,000  | 21,6   | 392  | 69,67 |       |
| 12:45      | 82,000 | 29,600 | 410,027 | 81,600  | 21,6   | 408  | 69,67 |       |
| 13:00      | 78,800 | 30,000 | 402,103 | 78,000  | 21,6   | 400  | 69,67 |       |
| 13:15      | 79,600 | 29,600 | 410,027 | 79,200  | 21,6   | 408  | 69,67 |       |
| 13:30      | 81,600 | 28,400 | 394,020 | 80,800  | 20,4   | 392  | 69,67 |       |
| 13:45      | 83,600 | 28,800 | 410,027 | 83,200  | 21,2   | 408  | 69,67 |       |
| 14:00      | 80,800 | 29,600 | 394,020 | 80,400  | 21,6   | 392  | 69,67 |       |
| 14:15      | 79,600 | 30,000 | 410,027 | 78,800  | 22     | 408  | 69,67 |       |
| 14:30      | 79,200 | 30,800 | 402,103 | 78,800  | 22,4   | 400  | 69,67 |       |
| 14:45      | 79,200 | 30,800 | 410,027 | 78,800  | 22,4   | 408  | 69,67 |       |
| 15:00      | 82,400 | 30,400 | 410,027 | 81,600  | 22,8   | 408  | 69,67 |       |
| 15:15      | 76,800 | 31,200 | 394,020 | 76,400  | 22,4   | 392  | 69,67 |       |
| 15:30      | 78,000 | 30,800 | 410,027 | 77,200  | 22,4   | 408  | 69,67 |       |
| 15:45      | 82,000 | 31,200 | 410,027 | 81,600  | 23,6   | 408  | 69,67 |       |
| 16:00      | 81,600 | 31,600 | 394,020 | 81,200  | 23,2   | 392  | 69,67 |       |
| 16:15      | 80,800 | 31,200 | 410,027 | 80,000  | 23,6   | 408  | 69,67 |       |
| 16:30      | 81,600 | 31,600 | 410,027 | 81,200  | 23,6   | 408  | 69,67 |       |
| 16:45      | 83,200 | 31,600 | 402,103 | 82,400  | 23,6   | 400  | 69,67 |       |
| 17:00      | 82,400 | 32,000 | 410,027 | 82,000  | 24     | 408  | 69,67 |       |
| 17:15      | 76,000 | 31,600 | 410,027 | 75,600  | 23,2   | 408  | 69,67 |       |
| 17:30      | 80,000 | 31,200 | 394,020 | 79,200  | 22,8   | 392  | 69,67 |       |
| 17:45      | 80,800 | 31,200 | 410,027 | 80,800  | 23,2   | 408  | 69,67 |       |
| 18:00      | 80,400 | 31,600 | 410,027 | 79,600  | 23,2   | 408  | 69,67 |       |
| 18:15      | 81,200 | 31,600 | 410,027 | 80,800  | 23,2   | 408  | 69,67 |       |

|            |        |        |         |         |        |      |       |       |
|------------|--------|--------|---------|---------|--------|------|-------|-------|
|            | 18:30  | 78,800 | 31,600  | 394,020 | 78,000 | 23,6 | 392   | 69,67 |
|            | 18:45  | 78,800 | 31,600  | 410,027 | 78,400 | 22,8 | 408   | 69,67 |
|            | 19:00  | 78,400 | 31,600  | 410,027 | 78,000 | 23,2 | 408   | 69,67 |
|            | 19:15  | 74,800 | 32,000  | 410,027 | 74,400 | 23,2 | 408   | 69,67 |
|            | 19:30  | 74,000 | 32,000  | 410,027 | 73,600 | 23,2 | 408   | 69,67 |
|            | 19:45  | 75,600 | 32,000  | 410,027 | 75,200 | 22,8 | 408   | 69,67 |
|            | 20:00  | 76,800 | 32,000  | 394,020 | 76,000 | 23,2 | 392   | 69,67 |
|            | 20:15  | 78,000 | 31,600  | 410,027 | 78,000 | 23,2 | 408   | 69,67 |
|            | 20:30  | 77,200 | 30,800  | 410,027 | 76,400 | 22   | 408   | 69,67 |
|            | 20:45  | 81,200 | 30,000  | 410,027 | 80,800 | 22   | 408   | 69,67 |
|            | 21:00  | 80,800 | 29,200  | 402,103 | 80,000 | 20,8 | 400   | 69,67 |
|            | 21:15  | 83,200 | 28,400  | 402,103 | 82,800 | 20,8 | 400   | 69,67 |
|            | 21:30  | 85,200 | 28,800  | 402,103 | 84,800 | 21,2 | 400   | 69,67 |
|            | 21:45  | 84,400 | 28,800  | 410,027 | 84,000 | 21,6 | 408   | 69,67 |
|            | 22:00  | 84,000 | 29,600  | 410,027 | 83,200 | 22   | 408   | 69,67 |
|            | 22:15  | 76,800 | 31,200  | 394,020 | 76,400 | 22,4 | 392   | 69,67 |
|            | 22:30  | 76,400 | 31,200  | 410,027 | 76,000 | 22   | 408   | 69,67 |
|            | 22:45  | 81,600 | 30,800  | 410,027 | 81,200 | 23,2 | 408   | 69,67 |
|            | 23:00  | 81,600 | 30,400  | 410,027 | 80,800 | 22,4 | 408   | 69,67 |
|            | 23:15  | 74,400 | 30,800  | 410,027 | 74,400 | 21,6 | 408   | 69,67 |
|            | 23:30  | 71,600 | 32,800  | 410,027 | 70,800 | 23,2 | 408   | 69,67 |
|            | 23:45  | 77,200 | 32,800  | 410,027 | 76,800 | 24   | 408   | 69,67 |
|            | 0:00   | 68,400 | 33,600  | 410,027 | 68,000 | 23,6 | 408   | 69,67 |
| 22.7.2015. | 0:15   | 73,200 | 34,400  | 410,000 | 72,800 | 25,2 | 408   | 90,14 |
|            | 0:30   | 77,600 | 34,000  | 410,000 | 77,200 | 25,2 | 408   | 90,14 |
|            | 0:45   | 79,200 | 34,000  | 418,000 | 78,800 | 24,8 | 416   | 90,14 |
|            | 1:00   | 78,000 | 34,000  | 410,000 | 77,600 | 24,8 | 408   | 90,14 |
|            | 1:15   | 75,200 | 34,000  | 410,000 | 74,800 | 24,8 | 408   | 90,14 |
|            | 1:30   | 77,200 | 33,600  | 418,000 | 76,400 | 24   | 416   | 90,14 |
|            | 1:45   | 76,400 | 34,000  | 410,000 | 76,400 | 25,2 | 408   | 90,14 |
|            | 2:00   | 76,400 | 34,800  | 425,000 | 76,000 | 25,6 | 423   | 90,14 |
|            | 2:15   | 74,800 | 35,200  | 410,000 | 74,400 | 25,6 | 408   | 90,14 |
|            | 2:30   | 71,600 | 36,400  | 418,000 | 70,800 | 26,4 | 416   | 90,14 |
|            | 2:45   | 73,600 | 36,000  | 410,000 | 73,200 | 26,4 | 408   | 90,14 |
|            | 3:00   | 68,800 | 36,400  | 425,000 | 68,400 | 26   | 423   | 90,14 |
|            | 3:15   | 74,000 | 36,400  | 418,000 | 73,600 | 27,2 | 416   | 90,14 |
|            | 3:30   | 74,000 | 36,800  | 410,000 | 73,600 | 27,2 | 408   | 90,14 |
|            | 3:45   | 71,200 | 36,800  | 425,000 | 70,800 | 26,4 | 423   | 90,14 |
|            | 4:00   | 73,200 | 36,400  | 418,000 | 72,800 | 26,8 | 416   | 90,14 |
|            | 4:15   | 76,800 | 36,800  | 410,000 | 76,400 | 27,2 | 408   | 90,14 |
|            | 4:30   | 78,400 | 35,600  | 418,000 | 78,000 | 26,8 | 416   | 90,14 |
|            | 4:45   | 77,600 | 36,000  | 410,000 | 77,200 | 26,8 | 408   | 90,14 |
|            | 5:00   | 79,200 | 36,000  | 425,000 | 78,400 | 26,8 | 423   | 90,14 |
|            | 5:15   | 86,400 | 35,200  | 418,000 | 85,600 | 27,2 | 416   | 90,14 |
|            | 5:30   | 84,800 | 36,000  | 410,000 | 84,400 | 27,6 | 408   | 90,14 |
|            | 5:45   | 82,000 | 36,400  | 425,000 | 81,600 | 27,6 | 423   | 90,14 |
|            | 6:00   | 78,000 | 36,400  | 410,000 | 77,200 | 27,2 | 408   | 90,14 |
|            | 6:15   | 84,000 | 34,800  | 418,000 | 83,600 | 26,4 | 416   | 90,14 |
|            | 6:30   | 81,200 | 32,400  | 410,000 | 80,800 | 23,6 | 408   | 90,14 |
|            | 6:45   | 81,200 | 32,000  | 425,000 | 80,800 | 22,8 | 423   | 90,14 |
|            | 7:00   | 81,200 | 28,000  | 418,000 | 80,400 | 18,4 | 416   | 90,14 |
|            | 7:15   | 88,000 | 25,600  | 410,000 | 88,000 | 17,2 | 408   | 90,14 |
|            | 7:30   | 88,000 | 26,000  | 418,000 | 87,200 | 17,6 | 416   | 90,14 |
|            | 7:45   | 85,600 | 26,000  | 425,000 | 85,200 | 17,2 | 423   | 90,14 |
|            | 8:00   | 85,600 | 25,200  | 410,000 | 84,800 | 16,4 | 408   | 90,14 |
|            | 8:15   | 98,000 | 23,200  | 410,000 | 97,200 | 16,4 | 408   | 90,14 |
|            | 8:30   | 99,600 | 22,800  | 410,000 | 98,800 | 16   | 408   | 90,14 |
|            | 8:45   | 97,200 | 23,200  | 410,000 | 96,800 | 16,8 | 408   | 90,14 |
|            | 9:00   | 96,800 | 23,200  | 410,000 | 95,600 | 16,8 | 408   | 90,14 |
|            | 9:15   | 96,000 | 23,200  | 402,000 | 95,200 | 16   | 400   | 90,14 |
|            | 9:30   | 92,400 | 24,000  | 410,000 | 92,000 | 16,4 | 408   | 90,14 |
|            | 9:45   | 89,600 | 24,400  | 410,000 | 89,200 | 17,2 | 408   | 90,14 |
|            | 10:00  | 90,000 | 24,400  | 410,000 | 89,200 | 16,8 | 408   | 90,14 |
|            | 10:15  | 91,200 | 25,600  | 410,000 | 90,400 | 17,6 | 408   | 90,14 |
|            | 10:30  | 92,000 | 25,600  | 410,000 | 91,600 | 18,8 | 408   | 90,14 |
|            | 10:45  | 90,000 | 26,400  | 410,000 | 89,200 | 18,8 | 408   | 90,14 |
|            | 11:00  | 94,800 | 24,800  | 410,000 | 94,000 | 18,4 | 408   | 90,14 |
|            | 11:15  | 93,200 | 24,800  | 410,000 | 92,800 | 18,4 | 408   | 90,14 |
|            | 11:30  | 94,000 | 25,600  | 394,000 | 92,800 | 18,4 | 392   | 90,14 |
|            | 11:45  | 93,600 | 25,200  | 410,000 | 93,200 | 19,2 | 408   | 90,14 |
|            | 12:00  | 92,800 | 27,200  | 402,000 | 92,000 | 20,4 | 400   | 90,14 |
| 12:15      | 94,000 | 26,400 | 410,000 | 93,200  | 20     | 408  | 90,14 |       |
| 12:30      | 96,000 | 26,000 | 394,000 | 95,200  | 20,4   | 392  | 90,14 |       |
| 12:45      | 94,000 | 26,800 | 402,000 | 93,200  | 20,8   | 400  | 90,14 |       |
| 13:00      | 92,000 | 28,000 | 402,000 | 91,200  | 21,6   | 400  | 90,14 |       |
| 13:15      | 95,600 | 27,200 | 402,000 | 94,800  | 21,6   | 400  | 90,14 |       |
| 13:30      | 95,200 | 28,800 | 394,000 | 94,400  | 23,2   | 392  | 90,14 |       |
| 13:45      | 95,600 | 29,200 | 402,000 | 95,200  | 23,6   | 400  | 90,14 |       |
| 14:00      | 93,200 | 29,200 | 394,000 | 92,800  | 23,2   | 392  | 90,14 |       |
| 14:15      | 86,800 | 29,600 | 410,000 | 86,000  | 22,8   | 408  | 90,14 |       |

|            |        |         |         |         |        |      |       |       |
|------------|--------|---------|---------|---------|--------|------|-------|-------|
|            | 14:30  | 85,200  | 28,800  | 394,000 | 84,400 | 21,6 | 392   | 90,14 |
|            | 14:45  | 84,400  | 29,200  | 402,000 | 84,000 | 22   | 400   | 90,14 |
|            | 15:00  | 84,400  | 29,600  | 410,000 | 83,600 | 22   | 408   | 90,14 |
|            | 15:15  | 82,800  | 29,200  | 394,000 | 82,400 | 22   | 392   | 90,14 |
|            | 15:30  | 82,800  | 29,200  | 402,000 | 82,000 | 21,2 | 400   | 90,14 |
|            | 15:45  | 84,000  | 29,200  | 410,000 | 83,600 | 21,6 | 408   | 90,14 |
|            | 16:00  | 84,400  | 29,200  | 394,000 | 83,600 | 22   | 392   | 90,14 |
|            | 16:15  | 84,400  | 29,200  | 410,000 | 83,600 | 22   | 408   | 90,14 |
|            | 16:30  | 84,400  | 29,600  | 394,000 | 84,000 | 22   | 392   | 90,14 |
|            | 16:45  | 83,600  | 29,200  | 402,000 | 83,200 | 21,6 | 400   | 90,14 |
|            | 17:00  | 86,400  | 29,600  | 410,000 | 86,000 | 22,4 | 408   | 90,14 |
|            | 17:15  | 89,600  | 30,800  | 410,000 | 88,400 | 24   | 408   | 90,14 |
|            | 17:30  | 88,000  | 31,200  | 394,000 | 87,600 | 24   | 392   | 90,14 |
|            | 17:45  | 90,400  | 31,200  | 410,000 | 89,600 | 24,4 | 408   | 90,14 |
|            | 18:00  | 96,000  | 30,400  | 394,000 | 95,600 | 24,4 | 392   | 90,14 |
|            | 18:15  | 94,800  | 30,000  | 410,000 | 93,600 | 24   | 408   | 90,14 |
|            | 18:30  | 96,400  | 30,000  | 402,000 | 96,000 | 24,4 | 400   | 90,14 |
|            | 18:45  | 96,000  | 30,000  | 410,000 | 95,200 | 24   | 408   | 90,14 |
|            | 19:00  | 97,200  | 29,600  | 410,000 | 96,400 | 24   | 408   | 90,14 |
|            | 19:15  | 94,800  | 30,000  | 394,000 | 94,000 | 23,6 | 392   | 90,14 |
|            | 19:30  | 93,600  | 30,400  | 410,000 | 92,800 | 24   | 408   | 90,14 |
|            | 19:45  | 95,600  | 30,000  | 394,000 | 95,200 | 24,4 | 392   | 90,14 |
|            | 20:00  | 97,200  | 30,000  | 410,000 | 96,400 | 24   | 408   | 90,14 |
|            | 20:15  | 96,000  | 30,000  | 402,000 | 95,200 | 24   | 400   | 90,14 |
|            | 20:30  | 97,200  | 30,000  | 410,000 | 96,800 | 24,4 | 408   | 90,14 |
|            | 20:45  | 95,200  | 29,600  | 410,000 | 94,400 | 23,6 | 408   | 90,14 |
|            | 21:00  | 100,000 | 28,400  | 394,000 | 98,800 | 23,2 | 392   | 90,14 |
|            | 21:15  | 99,200  | 28,400  | 402,000 | 98,400 | 22,8 | 400   | 90,14 |
|            | 21:30  | 98,800  | 28,800  | 402,000 | 98,400 | 23,6 | 400   | 90,14 |
|            | 21:45  | 97,600  | 30,000  | 402,000 | 96,800 | 24,8 | 400   | 90,14 |
|            | 22:00  | 98,000  | 30,000  | 410,000 | 97,200 | 24,4 | 408   | 90,14 |
|            | 22:15  | 85,600  | 30,000  | 394,000 | 85,200 | 22,4 | 392   | 90,14 |
|            | 22:30  | 88,800  | 30,000  | 410,000 | 88,000 | 22,8 | 408   | 90,14 |
|            | 22:45  | 91,200  | 30,000  | 410,000 | 90,400 | 23,2 | 408   | 90,14 |
|            | 23:00  | 93,200  | 29,600  | 402,000 | 92,800 | 23,6 | 400   | 90,14 |
|            | 23:15  | 82,400  | 31,200  | 402,000 | 81,600 | 22,8 | 400   | 90,14 |
|            | 23:30  | 78,000  | 32,000  | 410,000 | 78,000 | 23,6 | 408   | 90,14 |
|            | 23:45  | 82,000  | 32,800  | 410,000 | 81,200 | 24,4 | 408   | 90,14 |
|            | 0:00   | 80,400  | 33,200  | 410,000 | 79,600 | 24,8 | 408   | 90,14 |
| 23.7.2015. | 0:15   | 85,600  | 32,400  | 410,000 | 85,200 | 24,8 | 408   | 83,21 |
|            | 0:30   | 85,600  | 32,000  | 410,000 | 85,200 | 24   | 408   | 83,21 |
|            | 0:45   | 88,000  | 31,600  | 410,000 | 87,600 | 24   | 408   | 83,21 |
|            | 1:00   | 82,000  | 32,000  | 410,000 | 81,200 | 23,6 | 408   | 83,21 |
|            | 1:15   | 79,200  | 33,600  | 410,000 | 78,800 | 25,2 | 408   | 83,21 |
|            | 1:30   | 78,000  | 34,800  | 418,000 | 77,600 | 25,6 | 416   | 83,21 |
|            | 1:45   | 77,200  | 35,200  | 410,000 | 76,800 | 26   | 408   | 83,21 |
|            | 2:00   | 78,400  | 34,400  | 410,000 | 77,600 | 25,6 | 408   | 83,21 |
|            | 2:15   | 81,200  | 34,000  | 425,000 | 80,800 | 25,6 | 423   | 83,21 |
|            | 2:30   | 74,000  | 34,800  | 410,000 | 73,600 | 25,2 | 408   | 83,21 |
|            | 2:45   | 75,600  | 34,800  | 410,000 | 75,200 | 25,6 | 408   | 83,21 |
|            | 3:00   | 76,000  | 35,200  | 418,000 | 75,200 | 26   | 416   | 83,21 |
|            | 3:15   | 76,000  | 35,200  | 410,000 | 76,000 | 26   | 408   | 83,21 |
|            | 3:30   | 70,000  | 35,200  | 425,000 | 69,600 | 25,2 | 423   | 83,21 |
|            | 3:45   | 73,200  | 34,800  | 402,000 | 72,800 | 25,2 | 400   | 83,21 |
|            | 4:00   | 73,200  | 34,800  | 410,000 | 72,800 | 25,2 | 408   | 83,21 |
|            | 4:15   | 73,200  | 35,200  | 425,000 | 72,800 | 25,6 | 423   | 83,21 |
|            | 4:30   | 73,600  | 35,200  | 410,000 | 72,800 | 25,2 | 408   | 83,21 |
|            | 4:45   | 74,400  | 34,800  | 418,000 | 74,000 | 25,6 | 416   | 83,21 |
|            | 5:00   | 76,000  | 34,800  | 410,000 | 76,000 | 25,6 | 408   | 83,21 |
|            | 5:15   | 79,600  | 36,400  | 425,000 | 78,800 | 27,2 | 423   | 83,21 |
|            | 5:30   | 80,000  | 36,400  | 410,000 | 79,600 | 28   | 408   | 83,21 |
|            | 5:45   | 79,600  | 36,800  | 418,000 | 78,800 | 27,6 | 416   | 83,21 |
|            | 6:00   | 76,000  | 36,000  | 425,000 | 75,600 | 26,8 | 423   | 83,21 |
|            | 6:15   | 83,200  | 31,200  | 402,000 | 82,800 | 22,4 | 400   | 83,21 |
|            | 6:30   | 82,000  | 28,800  | 425,000 | 81,600 | 19,2 | 423   | 83,21 |
|            | 6:45   | 76,800  | 27,600  | 418,000 | 76,400 | 18   | 416   | 83,21 |
|            | 7:00   | 78,400  | 26,400  | 410,000 | 77,600 | 16,4 | 408   | 83,21 |
|            | 7:15   | 88,400  | 22,800  | 425,000 | 88,400 | 14   | 423   | 83,21 |
|            | 7:30   | 93,200  | 21,200  | 418,000 | 92,400 | 13,2 | 416   | 83,21 |
|            | 7:45   | 92,400  | 22,000  | 410,000 | 91,600 | 14   | 408   | 83,21 |
|            | 8:00   | 92,000  | 21,600  | 425,000 | 91,200 | 13,6 | 423   | 83,21 |
|            | 8:15   | 96,800  | 21,600  | 410,000 | 96,400 | 14,4 | 408   | 83,21 |
|            | 8:30   | 99,200  | 23,200  | 410,000 | 98,400 | 16,4 | 408   | 83,21 |
|            | 8:45   | 98,000  | 23,600  | 418,000 | 97,200 | 16,8 | 416   | 83,21 |
|            | 9:00   | 97,200  | 22,800  | 410,000 | 96,800 | 15,6 | 408   | 83,21 |
|            | 9:15   | 93,600  | 23,200  | 410,000 | 92,800 | 16   | 408   | 83,21 |
|            | 9:30   | 92,800  | 23,600  | 410,000 | 92,000 | 16   | 408   | 83,21 |
|            | 9:45   | 92,000  | 23,200  | 410,000 | 91,200 | 15,6 | 408   | 83,21 |
|            | 10:00  | 93,200  | 24,000  | 410,000 | 92,400 | 16,8 | 408   | 83,21 |
| 10:15      | 86,800 | 25,200  | 410,000 | 86,400  | 17,2   | 408  | 83,21 |       |

|            |       |        |        |         |        |      |     |       |
|------------|-------|--------|--------|---------|--------|------|-----|-------|
|            | 10:30 | 88,400 | 25,200 | 410,000 | 88,000 | 17,2 | 408 | 83,21 |
|            | 10:45 | 92,000 | 25,200 | 410,000 | 91,200 | 17,6 | 408 | 83,21 |
|            | 11:00 | 94,000 | 25,600 | 410,000 | 93,200 | 19,2 | 408 | 83,21 |
|            | 11:15 | 92,400 | 25,600 | 402,000 | 91,600 | 18,4 | 400 | 83,21 |
|            | 11:30 | 90,000 | 24,800 | 410,000 | 89,200 | 17,6 | 408 | 83,21 |
|            | 11:45 | 89,200 | 24,800 | 402,000 | 88,800 | 17,6 | 400 | 83,21 |
|            | 12:00 | 90,800 | 26,000 | 410,000 | 90,400 | 18,8 | 408 | 83,21 |
|            | 12:15 | 88,400 | 27,200 | 410,000 | 87,600 | 20   | 408 | 83,21 |
|            | 12:30 | 85,600 | 28,000 | 394,000 | 85,200 | 20,4 | 392 | 83,21 |
|            | 12:45 | 89,600 | 28,400 | 410,000 | 88,800 | 21,2 | 408 | 83,21 |
|            | 13:00 | 86,800 | 30,800 | 410,000 | 86,400 | 23,6 | 408 | 83,21 |
|            | 13:15 | 90,400 | 29,200 | 394,000 | 89,600 | 22,8 | 392 | 83,21 |
|            | 13:30 | 87,600 | 29,600 | 410,000 | 86,800 | 22   | 408 | 83,21 |
|            | 13:45 | 88,000 | 29,600 | 402,000 | 87,600 | 22,8 | 400 | 83,21 |
|            | 14:00 | 89,600 | 30,000 | 410,000 | 88,400 | 22,8 | 408 | 83,21 |
|            | 14:15 | 94,000 | 28,800 | 394,000 | 93,600 | 22,8 | 392 | 83,21 |
|            | 14:30 | 92,000 | 28,400 | 402,000 | 91,200 | 22,4 | 400 | 83,21 |
|            | 14:45 | 90,400 | 28,800 | 402,000 | 89,600 | 22   | 400 | 83,21 |
|            | 15:00 | 91,600 | 29,200 | 410,000 | 91,200 | 22,4 | 408 | 83,21 |
|            | 15:15 | 91,600 | 27,600 | 402,000 | 90,800 | 20,8 | 400 | 83,21 |
|            | 15:30 | 93,200 | 28,000 | 410,000 | 92,400 | 21,2 | 408 | 83,21 |
|            | 15:45 | 91,200 | 27,600 | 394,000 | 90,800 | 20,8 | 392 | 83,21 |
|            | 16:00 | 92,400 | 27,200 | 410,000 | 91,600 | 20,8 | 408 | 83,21 |
|            | 16:15 | 94,800 | 28,000 | 410,000 | 94,000 | 21,6 | 408 | 83,21 |
|            | 16:30 | 93,600 | 27,600 | 394,000 | 92,800 | 21,2 | 392 | 83,21 |
|            | 16:45 | 92,400 | 28,400 | 410,000 | 91,600 | 21,6 | 408 | 83,21 |
|            | 17:00 | 91,600 | 28,400 | 410,000 | 91,200 | 21,6 | 408 | 83,21 |
|            | 17:15 | 90,400 | 28,800 | 410,000 | 89,600 | 21,6 | 408 | 83,21 |
|            | 17:30 | 92,400 | 28,800 | 402,000 | 92,000 | 22   | 400 | 83,21 |
|            | 17:45 | 92,400 | 29,600 | 410,000 | 91,600 | 22,4 | 408 | 83,21 |
|            | 18:00 | 91,600 | 29,600 | 410,000 | 90,800 | 22,8 | 408 | 83,21 |
|            | 18:15 | 87,600 | 30,400 | 410,000 | 87,200 | 22,8 | 408 | 83,21 |
|            | 18:30 | 92,000 | 29,200 | 402,000 | 91,200 | 22,4 | 400 | 83,21 |
|            | 18:45 | 92,400 | 29,600 | 410,000 | 91,600 | 22,4 | 408 | 83,21 |
|            | 19:00 | 95,600 | 28,800 | 402,000 | 94,800 | 22,4 | 400 | 83,21 |
|            | 19:15 | 96,800 | 28,800 | 410,000 | 96,400 | 22,8 | 408 | 83,21 |
|            | 19:30 | 96,400 | 29,200 | 410,000 | 95,600 | 22,8 | 408 | 83,21 |
|            | 19:45 | 94,400 | 30,000 | 410,000 | 93,600 | 23,2 | 408 | 83,21 |
|            | 20:00 | 94,400 | 30,400 | 410,000 | 94,000 | 24   | 408 | 83,21 |
|            | 20:15 | 88,800 | 32,000 | 410,000 | 88,000 | 24,4 | 408 | 83,21 |
|            | 20:30 | 87,600 | 32,000 | 402,000 | 86,800 | 24,4 | 400 | 83,21 |
|            | 20:45 | 89,200 | 31,200 | 410,000 | 88,800 | 24   | 408 | 83,21 |
|            | 21:00 | 82,400 | 31,200 | 410,000 | 82,000 | 23,2 | 408 | 83,21 |
|            | 21:15 | 82,000 | 32,400 | 410,000 | 81,200 | 24   | 408 | 83,21 |
|            | 21:30 | 86,800 | 32,000 | 410,000 | 86,000 | 24,8 | 408 | 83,21 |
|            | 21:45 | 88,400 | 32,400 | 402,000 | 88,000 | 25,2 | 400 | 83,21 |
|            | 22:00 | 88,400 | 32,400 | 410,000 | 87,600 | 25,2 | 408 | 83,21 |
|            | 22:15 | 88,800 | 32,000 | 402,000 | 88,400 | 24,8 | 400 | 83,21 |
|            | 22:30 | 92,000 | 32,000 | 410,000 | 91,600 | 25,2 | 408 | 83,21 |
|            | 22:45 | 95,600 | 31,600 | 410,000 | 94,800 | 24,8 | 408 | 83,21 |
|            | 23:00 | 92,000 | 32,000 | 410,000 | 91,200 | 25,2 | 408 | 83,21 |
|            | 23:15 | 83,600 | 32,000 | 410,000 | 83,200 | 24   | 408 | 83,21 |
|            | 23:30 | 80,800 | 31,600 | 410,000 | 80,000 | 22,8 | 408 | 83,21 |
|            | 23:45 | 83,600 | 31,200 | 425,000 | 83,200 | 23,2 | 423 | 83,21 |
|            | 0:00  | 75,200 | 33,600 | 410,000 | 75,200 | 24   | 408 | 83,21 |
|            | 0:15  | 72,000 | 34,400 | 410,000 | 71,200 | 25,2 | 408 | 85,35 |
|            | 0:30  | 70,000 | 33,600 | 402,000 | 69,600 | 23,6 | 400 | 85,35 |
|            | 0:45  | 68,800 | 34,000 | 425,000 | 68,800 | 23,6 | 423 | 85,35 |
|            | 1:00  | 68,000 | 34,000 | 410,000 | 67,200 | 24   | 408 | 85,35 |
|            | 1:15  | 66,400 | 34,400 | 418,000 | 66,000 | 24   | 416 | 85,35 |
|            | 1:30  | 64,400 | 34,000 | 410,000 | 64,400 | 23,6 | 408 | 85,35 |
|            | 1:45  | 64,400 | 34,400 | 425,000 | 64,000 | 23,6 | 423 | 85,35 |
|            | 2:00  | 64,000 | 34,800 | 418,000 | 63,600 | 24   | 416 | 85,35 |
|            | 2:15  | 68,400 | 34,800 | 410,000 | 68,000 | 24,4 | 408 | 85,35 |
|            | 2:30  | 66,400 | 34,400 | 425,000 | 66,400 | 24   | 423 | 85,35 |
|            | 2:45  | 66,400 | 34,800 | 410,000 | 65,600 | 24,4 | 408 | 85,35 |
|            | 3:00  | 66,000 | 35,200 | 418,000 | 65,600 | 24,8 | 416 | 85,35 |
|            | 3:15  | 68,400 | 35,200 | 410,000 | 68,400 | 24,8 | 408 | 85,35 |
|            | 3:30  | 68,000 | 34,800 | 418,000 | 67,600 | 24,4 | 416 | 85,35 |
|            | 3:45  | 68,800 | 34,800 | 425,000 | 68,400 | 24,8 | 423 | 85,35 |
|            | 4:00  | 68,000 | 34,800 | 410,000 | 67,600 | 24,8 | 408 | 85,35 |
|            | 4:15  | 72,400 | 34,800 | 418,000 | 72,000 | 24,4 | 416 | 85,35 |
|            | 4:30  | 75,200 | 34,400 | 410,000 | 74,400 | 25,2 | 408 | 85,35 |
|            | 4:45  | 74,800 | 34,400 | 425,000 | 74,400 | 24,8 | 423 | 85,35 |
|            | 5:00  | 73,600 | 34,800 | 410,000 | 73,600 | 25,2 | 408 | 85,35 |
|            | 5:15  | 76,800 | 34,800 | 418,000 | 76,000 | 25,2 | 416 | 85,35 |
|            | 5:30  | 75,600 | 34,800 | 425,000 | 75,200 | 25,6 | 423 | 85,35 |
|            | 5:45  | 75,600 | 35,200 | 410,000 | 75,200 | 25,6 | 408 | 85,35 |
|            | 6:00  | 75,200 | 34,800 | 418,000 | 74,800 | 25,2 | 416 | 85,35 |
|            | 6:15  | 80,800 | 30,800 | 418,000 | 80,000 | 21,2 | 416 | 85,35 |
| 24.7.2015. |       |        |        |         |        |      |     |       |

|            |        |        |         |         |        |      |       |       |
|------------|--------|--------|---------|---------|--------|------|-------|-------|
|            | 6:30   | 77,600 | 28,800  | 410,000 | 77,200 | 19,2 | 408   | 85,35 |
|            | 6:45   | 74,000 | 28,000  | 425,000 | 73,600 | 17,6 | 423   | 85,35 |
|            | 7:00   | 76,400 | 28,000  | 418,000 | 76,000 | 17,6 | 416   | 85,35 |
|            | 7:15   | 78,000 | 27,600  | 425,000 | 77,600 | 18   | 423   | 85,35 |
|            | 7:30   | 79,200 | 27,200  | 410,000 | 78,800 | 17,6 | 408   | 85,35 |
|            | 7:45   | 83,200 | 26,400  | 418,000 | 82,800 | 17,6 | 416   | 85,35 |
|            | 8:00   | 82,400 | 26,000  | 410,000 | 81,600 | 16,8 | 408   | 85,35 |
|            | 8:15   | 90,800 | 26,400  | 425,000 | 90,400 | 18,4 | 423   | 85,35 |
|            | 8:30   | 90,800 | 27,600  | 410,000 | 90,000 | 20,4 | 408   | 85,35 |
|            | 8:45   | 90,400 | 28,000  | 402,000 | 89,600 | 20   | 400   | 85,35 |
|            | 9:00   | 92,400 | 28,800  | 425,000 | 92,000 | 21,2 | 423   | 85,35 |
|            | 9:15   | 90,000 | 28,400  | 410,000 | 89,200 | 21,2 | 408   | 85,35 |
|            | 9:30   | 90,000 | 28,400  | 410,000 | 89,200 | 20,8 | 408   | 85,35 |
|            | 9:45   | 88,400 | 28,800  | 410,000 | 88,000 | 21,2 | 408   | 85,35 |
|            | 10:00  | 86,800 | 28,800  | 410,000 | 86,400 | 20,8 | 408   | 85,35 |
|            | 10:15  | 86,800 | 28,400  | 410,000 | 86,400 | 20,4 | 408   | 85,35 |
|            | 10:30  | 85,200 | 28,800  | 410,000 | 84,400 | 20,4 | 408   | 85,35 |
|            | 10:45  | 85,600 | 28,800  | 410,000 | 84,800 | 20,8 | 408   | 85,35 |
|            | 11:00  | 86,000 | 28,800  | 402,000 | 85,600 | 20,8 | 400   | 85,35 |
|            | 11:15  | 86,000 | 28,800  | 410,000 | 85,200 | 21,2 | 408   | 85,35 |
|            | 11:30  | 86,400 | 28,800  | 410,000 | 86,000 | 20,8 | 408   | 85,35 |
|            | 11:45  | 86,400 | 27,200  | 410,000 | 85,600 | 19,2 | 408   | 85,35 |
|            | 12:00  | 88,000 | 27,600  | 410,000 | 87,600 | 20,4 | 408   | 85,35 |
|            | 12:15  | 88,400 | 28,000  | 410,000 | 88,000 | 20,4 | 408   | 85,35 |
|            | 12:30  | 88,400 | 28,000  | 410,000 | 87,600 | 20,4 | 408   | 85,35 |
|            | 12:45  | 88,800 | 28,000  | 402,000 | 88,000 | 20,4 | 400   | 85,35 |
|            | 13:00  | 86,400 | 28,000  | 402,000 | 85,600 | 20,4 | 400   | 85,35 |
|            | 13:15  | 89,200 | 27,600  | 410,000 | 88,800 | 20,4 | 408   | 85,35 |
|            | 13:30  | 90,400 | 27,600  | 410,000 | 89,600 | 20,4 | 408   | 85,35 |
|            | 13:45  | 90,800 | 27,600  | 410,000 | 90,400 | 20,8 | 408   | 85,35 |
|            | 14:00  | 92,000 | 28,800  | 410,000 | 90,800 | 21,2 | 408   | 85,35 |
|            | 14:15  | 90,800 | 28,800  | 402,000 | 90,400 | 22   | 400   | 85,35 |
|            | 14:30  | 91,600 | 28,800  | 410,000 | 90,800 | 21,6 | 408   | 85,35 |
|            | 14:45  | 89,200 | 28,800  | 410,000 | 88,800 | 21,6 | 408   | 85,35 |
|            | 15:00  | 89,600 | 29,200  | 402,000 | 88,800 | 22   | 400   | 85,35 |
|            | 15:15  | 89,200 | 29,600  | 410,000 | 88,400 | 22   | 408   | 85,35 |
|            | 15:30  | 90,000 | 29,200  | 410,000 | 89,600 | 22   | 408   | 85,35 |
|            | 15:45  | 91,600 | 29,200  | 410,000 | 90,800 | 22   | 408   | 85,35 |
|            | 16:00  | 90,800 | 28,800  | 410,000 | 90,400 | 21,6 | 408   | 85,35 |
|            | 16:15  | 87,600 | 29,200  | 410,000 | 86,800 | 21,6 | 408   | 85,35 |
|            | 16:30  | 91,600 | 28,800  | 410,000 | 90,800 | 21,6 | 408   | 85,35 |
|            | 16:45  | 91,600 | 28,800  | 410,000 | 90,800 | 21,6 | 408   | 85,35 |
|            | 17:00  | 92,400 | 28,800  | 410,000 | 91,600 | 21,6 | 408   | 85,35 |
|            | 17:15  | 96,000 | 28,800  | 410,000 | 95,600 | 22,4 | 408   | 85,35 |
|            | 17:30  | 94,000 | 28,800  | 410,000 | 93,200 | 21,6 | 408   | 85,35 |
|            | 17:45  | 89,600 | 29,200  | 410,000 | 89,200 | 21,6 | 408   | 85,35 |
|            | 18:00  | 90,400 | 28,800  | 410,000 | 90,000 | 21,6 | 408   | 85,35 |
|            | 18:15  | 91,200 | 28,800  | 410,000 | 90,000 | 21,2 | 408   | 85,35 |
|            | 18:30  | 90,800 | 28,400  | 410,000 | 90,000 | 21,2 | 408   | 85,35 |
|            | 18:45  | 92,800 | 28,400  | 410,000 | 92,400 | 20,8 | 408   | 85,35 |
|            | 19:00  | 93,200 | 28,000  | 410,000 | 92,400 | 21,2 | 408   | 85,35 |
|            | 19:15  | 96,000 | 28,000  | 402,000 | 95,600 | 21,2 | 400   | 85,35 |
|            | 19:30  | 94,800 | 28,000  | 410,000 | 94,000 | 21,6 | 408   | 85,35 |
|            | 19:45  | 94,000 | 28,400  | 410,000 | 93,600 | 21,2 | 408   | 85,35 |
|            | 20:00  | 94,000 | 28,400  | 410,000 | 93,200 | 21,2 | 408   | 85,35 |
|            | 20:15  | 92,800 | 28,400  | 410,000 | 92,000 | 21,6 | 408   | 85,35 |
|            | 20:30  | 89,600 | 29,200  | 410,000 | 89,200 | 21,6 | 408   | 85,35 |
|            | 20:45  | 87,200 | 28,800  | 425,000 | 86,400 | 20,4 | 423   | 85,35 |
|            | 21:00  | 91,600 | 27,200  | 394,000 | 91,200 | 20,4 | 392   | 85,35 |
|            | 21:15  | 95,200 | 26,800  | 410,000 | 94,400 | 20,4 | 408   | 85,35 |
|            | 21:30  | 94,800 | 27,200  | 410,000 | 94,000 | 20,4 | 408   | 85,35 |
|            | 21:45  | 93,600 | 27,600  | 410,000 | 93,200 | 20,4 | 408   | 85,35 |
|            | 22:00  | 93,600 | 28,000  | 410,000 | 92,800 | 21,2 | 408   | 85,35 |
|            | 22:15  | 84,800 | 28,400  | 410,000 | 84,400 | 20   | 408   | 85,35 |
|            | 22:30  | 87,200 | 28,000  | 410,000 | 86,400 | 20,4 | 408   | 85,35 |
|            | 22:45  | 91,600 | 28,000  | 418,000 | 91,200 | 20,4 | 416   | 85,35 |
|            | 23:00  | 89,600 | 28,000  | 410,000 | 89,200 | 20,4 | 408   | 85,35 |
|            | 23:15  | 82,400 | 29,200  | 410,000 | 81,600 | 20,8 | 408   | 85,35 |
|            | 23:30  | 82,400 | 30,400  | 410,000 | 82,000 | 21,6 | 408   | 85,35 |
|            | 23:45  | 82,000 | 31,200  | 418,000 | 81,200 | 22,4 | 416   | 85,35 |
|            | 0:00   | 78,400 | 30,400  | 410,000 | 78,000 | 21,2 | 408   | 85,35 |
| 25.7.2015. | 0:15   | 58,800 | 31,200  | 425,000 | 58,800 | 19,6 | 423   | 51,63 |
|            | 0:30   | 57,600 | 31,600  | 410,000 | 57,200 | 20   | 408   | 51,63 |
|            | 0:45   | 57,200 | 32,000  | 418,000 | 56,800 | 20,4 | 416   | 51,63 |
|            | 1:00   | 56,800 | 31,600  | 410,000 | 56,800 | 20,4 | 408   | 51,63 |
|            | 1:15   | 58,000 | 31,600  | 425,000 | 57,600 | 19,6 | 423   | 51,63 |
|            | 1:30   | 56,400 | 31,200  | 418,000 | 56,400 | 19,6 | 416   | 51,63 |
|            | 1:45   | 56,000 | 32,800  | 410,000 | 55,600 | 21,6 | 408   | 51,63 |
|            | 2:00   | 56,000 | 34,000  | 425,000 | 55,600 | 22,4 | 423   | 51,63 |
| 2:15       | 58,400 | 34,000 | 418,000 | 58,400  | 22,8   | 416  | 51,63 |       |

|       |        |        |         |        |      |     |       |
|-------|--------|--------|---------|--------|------|-----|-------|
| 2:30  | 58,000 | 34,400 | 410,000 | 57,600 | 23,2 | 408 | 51,63 |
| 2:45  | 57,200 | 34,400 | 418,000 | 56,800 | 22,8 | 416 | 51,63 |
| 3:00  | 58,000 | 34,400 | 425,000 | 58,000 | 22,8 | 423 | 51,63 |
| 3:15  | 59,200 | 34,400 | 410,000 | 58,800 | 23,2 | 408 | 51,63 |
| 3:30  | 58,800 | 34,000 | 418,000 | 58,400 | 22,8 | 416 | 51,63 |
| 3:45  | 55,600 | 33,600 | 425,000 | 55,600 | 22   | 423 | 51,63 |
| 4:00  | 54,400 | 33,600 | 410,000 | 54,000 | 22   | 408 | 51,63 |
| 4:15  | 54,400 | 33,600 | 418,000 | 54,400 | 22   | 416 | 51,63 |
| 4:30  | 55,600 | 33,600 | 425,000 | 54,800 | 21,6 | 423 | 51,63 |
| 4:45  | 56,000 | 34,400 | 418,000 | 56,000 | 22,4 | 416 | 51,63 |
| 5:00  | 56,000 | 34,000 | 425,000 | 56,000 | 22   | 423 | 51,63 |
| 5:15  | 59,200 | 34,000 | 418,000 | 58,800 | 22,8 | 416 | 51,63 |
| 5:30  | 54,800 | 34,800 | 418,000 | 54,800 | 22,4 | 416 | 51,63 |
| 5:45  | 52,800 | 34,000 | 425,000 | 52,400 | 22   | 423 | 51,63 |
| 6:00  | 54,400 | 34,400 | 418,000 | 54,000 | 22   | 416 | 51,63 |
| 6:15  | 56,000 | 32,800 | 433,000 | 56,000 | 20,8 | 431 | 51,63 |
| 6:30  | 52,400 | 32,800 | 425,000 | 52,000 | 20   | 423 | 51,63 |
| 6:45  | 53,600 | 32,000 | 418,000 | 53,200 | 19,6 | 416 | 51,63 |
| 7:00  | 56,000 | 32,000 | 425,000 | 56,000 | 20   | 423 | 51,63 |
| 7:15  | 57,600 | 30,800 | 433,000 | 57,200 | 18,4 | 431 | 51,63 |
| 7:30  | 53,200 | 30,000 | 418,000 | 52,800 | 18   | 416 | 51,63 |
| 7:45  | 54,400 | 30,000 | 425,000 | 54,400 | 17,6 | 423 | 51,63 |
| 8:00  | 52,800 | 29,600 | 418,000 | 52,400 | 16,8 | 416 | 51,63 |
| 8:15  | 56,400 | 30,000 | 425,000 | 56,400 | 18   | 423 | 51,63 |
| 8:30  | 55,200 | 30,000 | 418,000 | 55,200 | 18   | 416 | 51,63 |
| 8:45  | 56,000 | 30,000 | 425,000 | 55,200 | 17,6 | 423 | 51,63 |
| 9:00  | 52,800 | 30,000 | 418,000 | 52,800 | 17,6 | 416 | 51,63 |
| 9:15  | 61,600 | 29,600 | 418,000 | 61,600 | 18   | 416 | 51,63 |
| 9:30  | 60,000 | 28,800 | 425,000 | 59,200 | 17,2 | 423 | 51,63 |
| 9:45  | 57,200 | 28,400 | 410,000 | 57,200 | 16,8 | 408 | 51,63 |
| 10:00 | 58,400 | 29,200 | 418,000 | 58,400 | 17,2 | 416 | 51,63 |
| 10:15 | 63,600 | 28,800 | 425,000 | 63,200 | 17,6 | 423 | 51,63 |
| 10:30 | 63,600 | 28,800 | 418,000 | 63,200 | 18   | 416 | 51,63 |
| 10:45 | 62,400 | 29,200 | 410,000 | 62,000 | 17,2 | 408 | 51,63 |
| 11:00 | 63,200 | 28,800 | 425,000 | 62,800 | 18   | 423 | 51,63 |
| 11:15 | 65,600 | 28,800 | 418,000 | 65,600 | 17,6 | 416 | 51,63 |
| 11:30 | 65,600 | 28,400 | 410,000 | 64,800 | 17,6 | 408 | 51,63 |
| 11:45 | 68,000 | 28,800 | 425,000 | 68,000 | 18   | 423 | 51,63 |
| 12:00 | 68,000 | 28,800 | 418,000 | 67,200 | 18   | 416 | 51,63 |
| 12:15 | 66,000 | 28,400 | 410,000 | 66,000 | 17,6 | 408 | 51,63 |
| 12:30 | 66,400 | 28,400 | 418,000 | 66,000 | 17,2 | 416 | 51,63 |
| 12:45 | 68,000 | 28,400 | 425,000 | 67,600 | 17,6 | 423 | 51,63 |
| 13:00 | 65,200 | 28,400 | 410,000 | 64,800 | 17,6 | 408 | 51,63 |
| 13:15 | 65,600 | 28,800 | 418,000 | 65,200 | 18   | 416 | 51,63 |
| 13:30 | 65,600 | 29,200 | 410,000 | 65,600 | 18   | 408 | 51,63 |
| 13:45 | 67,200 | 29,200 | 425,000 | 66,800 | 18,4 | 423 | 51,63 |
| 14:00 | 66,400 | 29,200 | 418,000 | 66,000 | 18,4 | 416 | 51,63 |
| 14:15 | 65,200 | 29,600 | 410,000 | 64,800 | 18,8 | 408 | 51,63 |
| 14:30 | 66,000 | 29,600 | 425,000 | 65,600 | 18,4 | 423 | 51,63 |
| 14:45 | 69,600 | 29,600 | 418,000 | 69,600 | 19,2 | 416 | 51,63 |
| 15:00 | 66,800 | 29,600 | 410,000 | 66,000 | 18,4 | 408 | 51,63 |
| 15:15 | 65,600 | 30,000 | 418,000 | 65,200 | 18,8 | 416 | 51,63 |
| 15:30 | 66,400 | 30,000 | 425,000 | 66,400 | 19,2 | 423 | 51,63 |
| 15:45 | 66,000 | 30,400 | 410,000 | 65,600 | 19,6 | 408 | 51,63 |
| 16:00 | 67,200 | 30,800 | 418,000 | 66,800 | 20   | 416 | 51,63 |
| 16:15 | 66,000 | 30,800 | 425,000 | 65,600 | 20   | 423 | 51,63 |
| 16:30 | 66,800 | 31,600 | 418,000 | 66,400 | 20,4 | 416 | 51,63 |
| 16:45 | 66,800 | 31,600 | 410,000 | 66,800 | 20,8 | 408 | 51,63 |
| 17:00 | 66,800 | 31,600 | 425,000 | 66,400 | 20,8 | 423 | 51,63 |
| 17:15 | 60,400 | 31,600 | 418,000 | 60,000 | 19,6 | 416 | 51,63 |
| 17:30 | 64,400 | 30,800 | 425,000 | 64,400 | 20   | 423 | 51,63 |
| 17:45 | 63,200 | 31,200 | 418,000 | 62,400 | 19,6 | 416 | 51,63 |
| 18:00 | 62,800 | 30,800 | 425,000 | 62,800 | 19,2 | 423 | 51,63 |
| 18:15 | 61,600 | 30,800 | 418,000 | 61,200 | 19,2 | 416 | 51,63 |
| 18:30 | 63,600 | 30,400 | 418,000 | 63,200 | 19,2 | 416 | 51,63 |
| 18:45 | 62,400 | 30,400 | 425,000 | 62,400 | 19,2 | 423 | 51,63 |
| 19:00 | 64,800 | 30,400 | 410,000 | 64,400 | 18,8 | 408 | 51,63 |
| 19:15 | 62,000 | 29,600 | 418,000 | 61,600 | 18,4 | 416 | 51,63 |
| 19:30 | 61,600 | 30,000 | 425,000 | 61,200 | 18,4 | 423 | 51,63 |
| 19:45 | 59,600 | 30,400 | 418,000 | 59,600 | 18,4 | 416 | 51,63 |
| 20:00 | 62,000 | 30,400 | 425,000 | 61,600 | 18,8 | 423 | 51,63 |
| 20:15 | 58,800 | 30,000 | 418,000 | 58,400 | 18,4 | 416 | 51,63 |
| 20:30 | 62,800 | 30,000 | 425,000 | 62,400 | 18,4 | 423 | 51,63 |
| 20:45 | 60,000 | 29,200 | 418,000 | 60,000 | 17,6 | 416 | 51,63 |
| 21:00 | 61,200 | 27,600 | 410,000 | 60,800 | 16,4 | 408 | 51,63 |
| 21:15 | 68,400 | 28,000 | 425,000 | 68,000 | 17,2 | 423 | 51,63 |
| 21:30 | 60,400 | 30,400 | 402,000 | 60,000 | 19,2 | 400 | 51,63 |
| 21:45 | 58,400 | 33,200 | 425,000 | 58,400 | 21,6 | 423 | 51,63 |
| 22:00 | 60,000 | 33,600 | 410,000 | 59,600 | 22,8 | 408 | 51,63 |
| 22:15 | 57,200 | 33,600 | 418,000 | 56,800 | 22   | 416 | 51,63 |



|            |        |        |         |         |        |      |       |       |
|------------|--------|--------|---------|---------|--------|------|-------|-------|
|            | 22:30  | 57,200 | 33,600  | 425,000 | 56,800 | 22   | 423   | 51,63 |
|            | 22:45  | 58,800 | 33,600  | 410,000 | 58,800 | 22,8 | 408   | 51,63 |
|            | 23:00  | 58,000 | 34,400  | 418,000 | 57,200 | 22,8 | 416   | 51,63 |
|            | 23:15  | 55,200 | 34,800  | 410,000 | 55,200 | 23,2 | 408   | 51,63 |
|            | 23:30  | 51,600 | 35,200  | 425,000 | 51,600 | 23,2 | 423   | 51,63 |
|            | 23:45  | 54,800 | 36,000  | 418,000 | 54,400 | 24,4 | 416   | 51,63 |
|            | 0:00   | 52,000 | 35,200  | 425,000 | 51,600 | 23,6 | 423   | 51,63 |
| 26.7.2015. | 0:15   | 45,200 | 35,200  | 418,000 | 45,200 | 22,4 | 416   | 41,36 |
|            | 0:30   | 44,000 | 34,800  | 418,000 | 44,000 | 22,4 | 416   | 41,36 |
|            | 0:45   | 43,600 | 34,800  | 425,000 | 42,800 | 22   | 423   | 41,36 |
|            | 1:00   | 44,000 | 34,400  | 418,000 | 44,000 | 21,6 | 416   | 41,36 |
|            | 1:15   | 45,200 | 34,800  | 425,000 | 45,200 | 22,4 | 423   | 41,36 |
|            | 1:30   | 46,400 | 34,400  | 418,000 | 46,400 | 21,6 | 416   | 41,36 |
|            | 1:45   | 48,000 | 34,400  | 410,000 | 47,600 | 22   | 408   | 41,36 |
|            | 2:00   | 47,600 | 34,400  | 425,000 | 47,600 | 22   | 423   | 41,36 |
|            | 2:15   | 50,000 | 34,400  | 418,000 | 49,600 | 22,4 | 416   | 41,36 |
|            | 2:30   | 45,200 | 34,800  | 425,000 | 44,800 | 22   | 423   | 41,36 |
|            | 2:45   | 48,400 | 34,800  | 418,000 | 48,800 | 22,8 | 416   | 41,36 |
|            | 3:00   | 48,800 | 35,200  | 425,000 | 48,400 | 22,8 | 423   | 41,36 |
|            | 3:15   | 48,800 | 35,200  | 418,000 | 48,400 | 22,4 | 416   | 41,36 |
|            | 3:30   | 48,400 | 34,800  | 425,000 | 48,000 | 22,4 | 423   | 41,36 |
|            | 3:45   | 46,000 | 35,200  | 433,000 | 46,400 | 22,4 | 431   | 41,36 |
|            | 4:00   | 46,400 | 34,800  | 418,000 | 46,000 | 22,4 | 416   | 41,36 |
|            | 4:15   | 45,600 | 34,400  | 418,000 | 45,200 | 21,6 | 416   | 41,36 |
|            | 4:30   | 40,400 | 34,400  | 425,000 | 40,400 | 21,2 | 423   | 41,36 |
|            | 4:45   | 41,200 | 35,200  | 418,000 | 41,200 | 22   | 416   | 41,36 |
|            | 5:00   | 42,800 | 34,800  | 425,000 | 42,400 | 22   | 423   | 41,36 |
|            | 5:15   | 42,000 | 32,400  | 433,000 | 42,000 | 19,2 | 431   | 41,36 |
|            | 5:30   | 41,600 | 31,600  | 418,000 | 41,200 | 18   | 416   | 41,36 |
|            | 5:45   | 40,000 | 32,800  | 433,000 | 40,000 | 19,6 | 431   | 41,36 |
|            | 6:00   | 38,000 | 32,800  | 433,000 | 37,600 | 18,8 | 431   | 41,36 |
|            | 6:15   | 39,600 | 32,800  | 425,000 | 39,600 | 18,8 | 423   | 41,36 |
|            | 6:30   | 36,400 | 28,000  | 433,000 | 36,000 | 14,4 | 431   | 41,36 |
|            | 6:45   | 38,000 | 26,400  | 418,000 | 38,000 | 12,8 | 416   | 41,36 |
|            | 7:00   | 37,600 | 26,000  | 425,000 | 37,600 | 12,4 | 423   | 41,36 |
|            | 7:15   | 38,400 | 27,200  | 418,000 | 38,000 | 13,2 | 416   | 41,36 |
|            | 7:30   | 36,400 | 26,800  | 433,000 | 36,400 | 13,2 | 431   | 41,36 |
|            | 7:45   | 33,600 | 26,000  | 425,000 | 33,600 | 12   | 423   | 41,36 |
|            | 8:00   | 36,000 | 25,600  | 418,000 | 35,600 | 12   | 416   | 41,36 |
|            | 8:15   | 42,400 | 26,400  | 425,000 | 42,800 | 12,8 | 423   | 41,36 |
|            | 8:30   | 44,000 | 26,000  | 433,000 | 43,600 | 12,8 | 431   | 41,36 |
|            | 8:45   | 39,600 | 25,200  | 418,000 | 39,200 | 11,6 | 416   | 41,36 |
|            | 9:00   | 40,000 | 24,800  | 418,000 | 40,000 | 11,6 | 416   | 41,36 |
|            | 9:15   | 43,200 | 25,200  | 425,000 | 42,800 | 11,6 | 423   | 41,36 |
|            | 9:30   | 43,200 | 24,400  | 418,000 | 43,200 | 11,2 | 416   | 41,36 |
|            | 9:45   | 41,600 | 24,400  | 425,000 | 41,600 | 11,2 | 423   | 41,36 |
|            | 10:00  | 38,800 | 23,600  | 418,000 | 38,400 | 10   | 416   | 41,36 |
|            | 10:15  | 45,200 | 24,000  | 425,000 | 45,600 | 10,8 | 423   | 41,36 |
|            | 10:30  | 46,000 | 23,600  | 418,000 | 45,600 | 10,4 | 416   | 41,36 |
|            | 10:45  | 47,200 | 22,000  | 425,000 | 46,800 | 9,2  | 423   | 41,36 |
|            | 11:00  | 46,400 | 22,000  | 418,000 | 46,800 | 8,8  | 416   | 41,36 |
|            | 11:15  | 44,400 | 21,600  | 425,000 | 44,000 | 8,4  | 423   | 41,36 |
|            | 11:30  | 47,200 | 22,000  | 418,000 | 46,800 | 9,2  | 416   | 41,36 |
|            | 11:45  | 46,800 | 22,000  | 410,000 | 46,800 | 9,2  | 408   | 41,36 |
|            | 12:00  | 51,200 | 22,400  | 425,000 | 50,800 | 9,6  | 423   | 41,36 |
| 12:15      | 54,800 | 22,800 | 418,000 | 54,800  | 10,4   | 416  | 41,36 |       |
| 12:30      | 52,800 | 23,200 | 418,000 | 52,400  | 10,8   | 416  | 41,36 |       |
| 12:45      | 54,400 | 23,200 | 425,000 | 54,400  | 10,8   | 423  | 41,36 |       |
| 13:00      | 53,600 | 22,800 | 418,000 | 53,200  | 10,4   | 416  | 41,36 |       |
| 13:15      | 52,400 | 23,200 | 425,000 | 52,000  | 10,4   | 423  | 41,36 |       |
| 13:30      | 50,000 | 22,800 | 418,000 | 50,000  | 10,4   | 416  | 41,36 |       |
| 13:45      | 49,600 | 23,200 | 425,000 | 49,600  | 10     | 423  | 41,36 |       |
| 14:00      | 49,600 | 23,200 | 410,000 | 49,600  | 10,4   | 408  | 41,36 |       |
| 14:15      | 50,000 | 23,200 | 418,000 | 49,600  | 10,4   | 416  | 41,36 |       |
| 14:30      | 47,600 | 22,800 | 425,000 | 47,200  | 10,4   | 423  | 41,36 |       |
| 14:45      | 50,800 | 23,600 | 418,000 | 50,400  | 10,4   | 416  | 41,36 |       |
| 15:00      | 48,800 | 23,600 | 425,000 | 49,200  | 10,8   | 423  | 41,36 |       |
| 15:15      | 51,200 | 24,000 | 418,000 | 50,800  | 11,2   | 416  | 41,36 |       |
| 15:30      | 47,600 | 23,600 | 425,000 | 47,600  | 10,4   | 423  | 41,36 |       |
| 15:45      | 48,000 | 23,600 | 418,000 | 47,600  | 10,8   | 416  | 41,36 |       |
| 16:00      | 47,200 | 24,000 | 433,000 | 47,200  | 10,8   | 431  | 41,36 |       |
| 16:15      | 43,200 | 24,000 | 418,000 | 42,800  | 10,8   | 416  | 41,36 |       |
| 16:30      | 44,000 | 24,400 | 425,000 | 44,000  | 10,8   | 423  | 41,36 |       |
| 16:45      | 44,800 | 24,000 | 418,000 | 44,400  | 11,2   | 416  | 41,36 |       |
| 17:00      | 46,000 | 24,400 | 425,000 | 46,000  | 11,2   | 423  | 41,36 |       |
| 17:15      | 46,800 | 24,400 | 418,000 | 46,800  | 11,2   | 416  | 41,36 |       |
| 17:30      | 47,600 | 24,400 | 425,000 | 47,200  | 11,2   | 423  | 41,36 |       |
| 17:45      | 44,000 | 23,600 | 418,000 | 44,000  | 10,8   | 416  | 41,36 |       |
| 18:00      | 41,600 | 24,000 | 425,000 | 41,600  | 10,4   | 423  | 41,36 |       |
| 18:15      | 43,600 | 24,000 | 418,000 | 43,600  | 10,8   | 416  | 41,36 |       |

|            |        |        |         |         |        |      |       |       |
|------------|--------|--------|---------|---------|--------|------|-------|-------|
|            | 18:30  | 45,600 | 24,000  | 425,000 | 45,200 | 10,8 | 423   | 41,36 |
|            | 18:45  | 45,200 | 23,600  | 418,000 | 45,200 | 10,8 | 416   | 41,36 |
|            | 19:00  | 47,600 | 24,400  | 425,000 | 47,200 | 11,2 | 423   | 41,36 |
|            | 19:15  | 48,800 | 23,600  | 418,000 | 48,400 | 10,8 | 416   | 41,36 |
|            | 19:30  | 46,000 | 23,600  | 425,000 | 46,000 | 10,8 | 423   | 41,36 |
|            | 19:45  | 46,000 | 24,000  | 418,000 | 46,000 | 11,2 | 416   | 41,36 |
|            | 20:00  | 45,200 | 24,000  | 418,000 | 45,200 | 10,8 | 416   | 41,36 |
|            | 20:15  | 46,400 | 24,400  | 410,000 | 46,000 | 11,2 | 408   | 41,36 |
|            | 20:30  | 46,000 | 24,000  | 425,000 | 46,000 | 10,8 | 423   | 41,36 |
|            | 20:45  | 49,600 | 23,200  | 418,000 | 49,200 | 10,8 | 416   | 41,36 |
|            | 21:00  | 50,000 | 22,800  | 425,000 | 50,000 | 10,4 | 423   | 41,36 |
|            | 21:15  | 51,600 | 24,400  | 410,000 | 51,600 | 12   | 408   | 41,36 |
|            | 21:30  | 50,800 | 25,600  | 418,000 | 50,400 | 13,2 | 416   | 41,36 |
|            | 21:45  | 55,200 | 27,600  | 425,000 | 55,200 | 16   | 423   | 41,36 |
|            | 22:00  | 53,200 | 28,000  | 410,000 | 53,200 | 16   | 408   | 41,36 |
|            | 22:15  | 46,400 | 28,400  | 418,000 | 46,000 | 16   | 416   | 41,36 |
|            | 22:30  | 47,600 | 28,400  | 410,000 | 47,200 | 16   | 408   | 41,36 |
|            | 22:45  | 54,400 | 29,200  | 418,000 | 54,400 | 17,2 | 416   | 41,36 |
|            | 23:00  | 58,400 | 29,600  | 425,000 | 58,000 | 18   | 423   | 41,36 |
|            | 23:15  | 52,400 | 29,200  | 410,000 | 52,400 | 17,2 | 408   | 41,36 |
|            | 23:30  | 44,000 | 28,800  | 418,000 | 43,600 | 16   | 416   | 41,36 |
|            | 23:45  | 49,200 | 29,600  | 425,000 | 49,200 | 17,2 | 423   | 41,36 |
|            | 0:00   | 47,600 | 29,600  | 410,000 | 47,600 | 17,2 | 408   | 41,36 |
| 27.7.2015. | 0:15   | 64,800 | 29,600  | 418,000 | 64,000 | 18,4 | 416   | 39,21 |
|            | 0:30   | 64,800 | 29,200  | 425,000 | 64,800 | 18,4 | 423   | 39,21 |
|            | 0:45   | 63,600 | 29,600  | 418,000 | 63,200 | 18,4 | 416   | 39,21 |
|            | 1:00   | 64,400 | 29,600  | 425,000 | 64,000 | 18,4 | 423   | 39,21 |
|            | 1:15   | 66,000 | 29,600  | 410,000 | 66,000 | 18,8 | 408   | 39,21 |
|            | 1:30   | 65,200 | 29,600  | 418,000 | 64,400 | 18,4 | 416   | 39,21 |
|            | 1:45   | 66,400 | 30,000  | 418,000 | 66,400 | 18,8 | 416   | 39,21 |
|            | 2:00   | 63,600 | 28,800  | 425,000 | 63,200 | 17,2 | 423   | 39,21 |
|            | 2:15   | 72,800 | 27,200  | 418,000 | 72,400 | 16,8 | 416   | 39,21 |
|            | 2:30   | 69,200 | 25,600  | 425,000 | 68,800 | 14,4 | 423   | 39,21 |
|            | 2:45   | 67,600 | 25,200  | 418,000 | 67,200 | 13,6 | 416   | 39,21 |
|            | 3:00   | 60,800 | 24,800  | 425,000 | 60,400 | 12,8 | 423   | 39,21 |
|            | 3:15   | 66,800 | 24,400  | 418,000 | 66,800 | 13,2 | 416   | 39,21 |
|            | 3:30   | 65,200 | 24,800  | 433,000 | 64,800 | 12,8 | 431   | 39,21 |
|            | 3:45   | 64,800 | 24,800  | 425,000 | 64,400 | 13,2 | 423   | 39,21 |
|            | 4:00   | 66,000 | 24,000  | 418,000 | 65,600 | 12,4 | 416   | 39,21 |
|            | 4:15   | 67,200 | 23,600  | 425,000 | 67,200 | 12   | 423   | 39,21 |
|            | 4:30   | 69,600 | 23,200  | 418,000 | 69,200 | 12   | 416   | 39,21 |
|            | 4:45   | 68,000 | 23,200  | 425,000 | 67,600 | 12   | 423   | 39,21 |
|            | 5:00   | 68,400 | 23,600  | 433,000 | 68,000 | 12   | 431   | 39,21 |
|            | 5:15   | 64,800 | 22,800  | 418,000 | 64,800 | 11,2 | 416   | 39,21 |
|            | 5:30   | 60,800 | 22,400  | 425,000 | 60,800 | 10   | 423   | 39,21 |
|            | 5:45   | 59,200 | 22,000  | 418,000 | 58,400 | 9,6  | 416   | 39,21 |
|            | 6:00   | 56,400 | 22,000  | 433,000 | 56,400 | 9,2  | 431   | 39,21 |
|            | 6:15   | 62,400 | 21,200  | 418,000 | 62,000 | 9,2  | 416   | 39,21 |
|            | 6:30   | 60,400 | 20,800  | 425,000 | 60,000 | 8,4  | 423   | 39,21 |
|            | 6:45   | 57,200 | 19,200  | 418,000 | 57,200 | 6,8  | 416   | 39,21 |
|            | 7:00   | 54,800 | 19,200  | 433,000 | 54,800 | 6,4  | 431   | 39,21 |
|            | 7:15   | 56,400 | 18,800  | 425,000 | 56,000 | 6,4  | 423   | 39,21 |
|            | 7:30   | 56,800 | 19,600  | 418,000 | 56,400 | 7,2  | 416   | 39,21 |
|            | 7:45   | 55,600 | 20,400  | 425,000 | 55,600 | 7,6  | 423   | 39,21 |
|            | 8:00   | 56,800 | 20,000  | 418,000 | 56,800 | 7,6  | 416   | 39,21 |
|            | 8:15   | 62,400 | 20,000  | 410,000 | 62,000 | 8,4  | 408   | 39,21 |
|            | 8:30   | 61,600 | 20,400  | 425,000 | 61,200 | 8,4  | 423   | 39,21 |
|            | 8:45   | 61,200 | 20,800  | 418,000 | 61,200 | 8,8  | 416   | 39,21 |
|            | 9:00   | 62,800 | 20,400  | 425,000 | 62,400 | 8,8  | 423   | 39,21 |
|            | 9:15   | 60,800 | 21,200  | 418,000 | 60,400 | 9,2  | 416   | 39,21 |
|            | 9:30   | 60,400 | 21,200  | 425,000 | 60,000 | 9,2  | 423   | 39,21 |
|            | 9:45   | 61,600 | 21,600  | 402,000 | 61,200 | 10   | 400   | 39,21 |
|            | 10:00  | 59,200 | 21,600  | 425,000 | 59,200 | 10   | 423   | 39,21 |
|            | 10:15  | 63,200 | 22,400  | 418,000 | 62,800 | 10,4 | 416   | 39,21 |
|            | 10:30  | 63,200 | 22,000  | 425,000 | 62,800 | 10,4 | 423   | 39,21 |
|            | 10:45  | 63,200 | 22,000  | 410,000 | 63,200 | 10,4 | 408   | 39,21 |
|            | 11:00  | 63,600 | 21,600  | 418,000 | 63,200 | 10   | 416   | 39,21 |
|            | 11:15  | 67,200 | 21,200  | 425,000 | 66,800 | 10   | 423   | 39,21 |
|            | 11:30  | 64,800 | 20,800  | 410,000 | 64,400 | 9,6  | 408   | 39,21 |
|            | 11:45  | 65,200 | 20,800  | 418,000 | 64,800 | 9,6  | 416   | 39,21 |
|            | 12:00  | 67,200 | 20,400  | 410,000 | 66,800 | 9,6  | 408   | 39,21 |
| 12:15      | 66,000 | 20,400 | 425,000 | 66,000  | 9,2    | 423  | 39,21 |       |
| 12:30      | 64,800 | 20,400 | 402,000 | 64,400  | 9,2    | 400  | 39,21 |       |
| 12:45      | 67,600 | 21,200 | 425,000 | 67,200  | 10     | 423  | 39,21 |       |
| 13:00      | 63,200 | 21,200 | 410,000 | 63,200  | 10     | 408  | 39,21 |       |
| 13:15      | 69,200 | 21,200 | 418,000 | 68,400  | 10,4   | 416  | 39,21 |       |
| 13:30      | 67,200 | 21,200 | 410,000 | 67,200  | 10,4   | 408  | 39,21 |       |
| 13:45      | 67,200 | 21,600 | 425,000 | 66,800  | 10,4   | 423  | 39,21 |       |
| 14:00      | 67,200 | 21,600 | 410,000 | 66,800  | 10,8   | 408  | 39,21 |       |
| 14:15      | 71,600 | 21,200 | 418,000 | 71,200  | 10,8   | 416  | 39,21 |       |

|            |        |        |         |         |        |      |       |       |
|------------|--------|--------|---------|---------|--------|------|-------|-------|
|            | 14:30  | 69,600 | 21,200  | 410,000 | 69,200 | 10,4 | 408   | 39,21 |
|            | 14:45  | 69,200 | 21,600  | 425,000 | 68,800 | 10,8 | 423   | 39,21 |
|            | 15:00  | 70,400 | 21,600  | 402,000 | 70,400 | 10,8 | 400   | 39,21 |
|            | 15:15  | 70,800 | 22,000  | 425,000 | 70,000 | 11,6 | 423   | 39,21 |
|            | 15:30  | 71,600 | 22,000  | 410,000 | 71,600 | 11,6 | 408   | 39,21 |
|            | 15:45  | 71,600 | 22,000  | 418,000 | 70,800 | 11,2 | 416   | 39,21 |
|            | 16:00  | 74,000 | 21,600  | 410,000 | 73,600 | 11,6 | 408   | 39,21 |
|            | 16:15  | 66,800 | 22,400  | 425,000 | 66,400 | 11,2 | 423   | 39,21 |
|            | 16:30  | 68,000 | 22,000  | 418,000 | 67,600 | 10,8 | 416   | 39,21 |
|            | 16:45  | 65,600 | 22,000  | 410,000 | 65,600 | 11,2 | 408   | 39,21 |
|            | 17:00  | 66,400 | 22,400  | 425,000 | 66,000 | 11,2 | 423   | 39,21 |
|            | 17:15  | 65,600 | 22,800  | 418,000 | 65,200 | 11,2 | 416   | 39,21 |
|            | 17:30  | 68,400 | 22,400  | 425,000 | 68,000 | 11,6 | 423   | 39,21 |
|            | 17:45  | 67,200 | 22,400  | 410,000 | 66,800 | 11,2 | 408   | 39,21 |
|            | 18:00  | 66,400 | 22,400  | 418,000 | 66,000 | 11,2 | 416   | 39,21 |
|            | 18:15  | 59,600 | 21,600  | 418,000 | 59,600 | 9,6  | 416   | 39,21 |
|            | 18:30  | 60,800 | 21,600  | 425,000 | 60,400 | 9,6  | 423   | 39,21 |
|            | 18:45  | 62,800 | 21,200  | 410,000 | 62,800 | 9,6  | 408   | 39,21 |
|            | 19:00  | 61,600 | 20,800  | 418,000 | 60,800 | 9,2  | 416   | 39,21 |
|            | 19:15  | 54,800 | 21,600  | 425,000 | 54,800 | 8,8  | 423   | 39,21 |
|            | 19:30  | 55,600 | 20,800  | 418,000 | 55,200 | 9,2  | 416   | 39,21 |
|            | 19:45  | 55,600 | 21,600  | 425,000 | 55,600 | 8,8  | 423   | 39,21 |
|            | 20:00  | 54,800 | 21,200  | 418,000 | 54,400 | 9,2  | 416   | 39,21 |
|            | 20:15  | 52,400 | 21,600  | 410,000 | 52,000 | 8,8  | 408   | 39,21 |
|            | 20:30  | 47,200 | 21,200  | 425,000 | 47,200 | 8,4  | 423   | 39,21 |
|            | 20:45  | 50,000 | 20,800  | 418,000 | 50,000 | 8,4  | 416   | 39,21 |
|            | 21:00  | 54,400 | 19,600  | 410,000 | 54,000 | 7,6  | 408   | 39,21 |
|            | 21:15  | 58,000 | 19,600  | 418,000 | 57,600 | 7,6  | 416   | 39,21 |
|            | 21:30  | 60,800 | 21,600  | 410,000 | 60,800 | 10   | 408   | 39,21 |
|            | 21:45  | 62,000 | 26,000  | 425,000 | 61,600 | 14,8 | 423   | 39,21 |
|            | 22:00  | 59,600 | 26,000  | 410,000 | 59,200 | 14,4 | 408   | 39,21 |
|            | 22:15  | 52,000 | 25,200  | 418,000 | 52,000 | 13,2 | 416   | 39,21 |
|            | 22:30  | 50,400 | 24,800  | 410,000 | 50,000 | 12,8 | 408   | 39,21 |
|            | 22:45  | 56,800 | 25,600  | 425,000 | 56,400 | 14   | 423   | 39,21 |
|            | 23:00  | 54,800 | 26,000  | 410,000 | 54,400 | 14   | 408   | 39,21 |
|            | 23:15  | 52,000 | 26,800  | 418,000 | 52,400 | 14,4 | 416   | 39,21 |
|            | 23:30  | 50,000 | 26,800  | 425,000 | 49,600 | 14,4 | 423   | 39,21 |
|            | 23:45  | 49,600 | 27,200  | 402,000 | 49,200 | 14,8 | 400   | 39,21 |
|            | 0:00   | 49,200 | 27,200  | 425,000 | 49,200 | 14,8 | 423   | 39,21 |
| 28.7.2015. | 0:15   | 53,200 | 28,000  | 418,000 | 53,200 | 16   | 416   | 58,24 |
|            | 0:30   | 49,600 | 27,600  | 425,000 | 49,200 | 15,2 | 423   | 58,24 |
|            | 0:45   | 50,800 | 27,600  | 410,000 | 50,400 | 15,2 | 408   | 58,24 |
|            | 1:00   | 50,800 | 28,000  | 418,000 | 50,800 | 15,6 | 416   | 58,24 |
|            | 1:15   | 57,600 | 27,600  | 425,000 | 57,200 | 16   | 423   | 58,24 |
|            | 1:30   | 57,600 | 27,200  | 418,000 | 57,600 | 15,2 | 416   | 58,24 |
|            | 1:45   | 59,200 | 27,600  | 425,000 | 58,400 | 16   | 423   | 58,24 |
|            | 2:00   | 56,400 | 27,200  | 410,000 | 56,400 | 14,8 | 408   | 58,24 |
|            | 2:15   | 54,000 | 26,400  | 418,000 | 54,000 | 14,4 | 416   | 58,24 |
|            | 2:30   | 51,600 | 26,400  | 425,000 | 51,200 | 14   | 423   | 58,24 |
|            | 2:45   | 50,800 | 26,000  | 418,000 | 50,800 | 13,6 | 416   | 58,24 |
|            | 3:00   | 50,400 | 26,000  | 418,000 | 50,000 | 12,8 | 416   | 58,24 |
|            | 3:15   | 52,800 | 25,600  | 425,000 | 52,400 | 13,6 | 423   | 58,24 |
|            | 3:30   | 52,800 | 26,000  | 418,000 | 52,800 | 13,2 | 416   | 58,24 |
|            | 3:45   | 52,000 | 25,600  | 425,000 | 52,000 | 13,2 | 423   | 58,24 |
|            | 4:00   | 52,400 | 25,600  | 418,000 | 52,000 | 13,2 | 416   | 58,24 |
|            | 4:15   | 55,200 | 25,600  | 425,000 | 54,800 | 13,2 | 423   | 58,24 |
|            | 4:30   | 52,400 | 25,200  | 418,000 | 52,400 | 12,8 | 416   | 58,24 |
|            | 4:45   | 56,400 | 25,200  | 425,000 | 56,000 | 13,2 | 423   | 58,24 |
|            | 5:00   | 57,600 | 25,200  | 418,000 | 57,200 | 12,8 | 416   | 58,24 |
|            | 5:15   | 65,200 | 24,800  | 425,000 | 64,800 | 13,6 | 423   | 58,24 |
|            | 5:30   | 64,800 | 25,200  | 410,000 | 64,800 | 13,6 | 408   | 58,24 |
|            | 5:45   | 64,800 | 25,200  | 418,000 | 64,400 | 14   | 416   | 58,24 |
|            | 6:00   | 59,600 | 24,000  | 433,000 | 59,200 | 11,6 | 431   | 58,24 |
|            | 6:15   | 58,000 | 22,400  | 425,000 | 57,600 | 10   | 423   | 58,24 |
|            | 6:30   | 54,000 | 22,000  | 418,000 | 54,000 | 9,2  | 416   | 58,24 |
|            | 6:45   | 57,200 | 21,600  | 418,000 | 56,800 | 9,2  | 416   | 58,24 |
|            | 7:00   | 54,800 | 20,800  | 425,000 | 54,400 | 8    | 423   | 58,24 |
|            | 7:15   | 54,400 | 20,000  | 418,000 | 54,400 | 7,6  | 416   | 58,24 |
|            | 7:30   | 57,200 | 20,000  | 425,000 | 56,800 | 7,6  | 423   | 58,24 |
|            | 7:45   | 60,400 | 20,000  | 418,000 | 60,000 | 8,4  | 416   | 58,24 |
|            | 8:00   | 60,000 | 20,800  | 425,000 | 59,600 | 8,4  | 423   | 58,24 |
|            | 8:15   | 60,800 | 20,800  | 410,000 | 60,400 | 9,2  | 408   | 58,24 |
|            | 8:30   | 63,200 | 21,200  | 418,000 | 63,200 | 9,6  | 416   | 58,24 |
|            | 8:45   | 63,600 | 20,800  | 425,000 | 63,200 | 9,6  | 423   | 58,24 |
|            | 9:00   | 62,800 | 19,600  | 410,000 | 62,400 | 7,6  | 408   | 58,24 |
|            | 9:15   | 68,400 | 18,800  | 418,000 | 68,400 | 8    | 416   | 58,24 |
|            | 9:30   | 65,600 | 18,400  | 410,000 | 65,200 | 7,2  | 408   | 58,24 |
|            | 9:45   | 66,400 | 19,600  | 418,000 | 66,000 | 8,4  | 416   | 58,24 |
|            | 10:00  | 66,000 | 19,600  | 425,000 | 65,600 | 8,4  | 423   | 58,24 |
| 10:15      | 69,200 | 20,000 | 410,000 | 68,800  | 9,2    | 408  | 58,24 |       |

|            |       |        |        |         |        |      |     |       |
|------------|-------|--------|--------|---------|--------|------|-----|-------|
|            | 10:30 | 66,000 | 19,600 | 418,000 | 66,000 | 8,4  | 416 | 58,24 |
|            | 10:45 | 64,800 | 19,200 | 410,000 | 64,400 | 8,4  | 408 | 58,24 |
|            | 11:00 | 66,400 | 18,800 | 410,000 | 66,000 | 7,6  | 408 | 58,24 |
|            | 11:15 | 64,800 | 19,200 | 425,000 | 64,400 | 8    | 423 | 58,24 |
|            | 11:30 | 66,000 | 18,800 | 410,000 | 65,600 | 7,6  | 408 | 58,24 |
|            | 11:45 | 67,600 | 18,800 | 418,000 | 67,200 | 8    | 416 | 58,24 |
|            | 12:00 | 65,200 | 18,800 | 410,000 | 65,200 | 7,6  | 408 | 58,24 |
|            | 12:15 | 67,200 | 19,600 | 425,000 | 66,400 | 8,8  | 423 | 58,24 |
|            | 12:30 | 64,400 | 20,000 | 402,000 | 64,000 | 8,4  | 400 | 58,24 |
|            | 12:45 | 66,000 | 20,000 | 410,000 | 66,000 | 8,8  | 408 | 58,24 |
|            | 13:00 | 65,600 | 19,600 | 425,000 | 65,200 | 9,2  | 423 | 58,24 |
|            | 13:15 | 64,400 | 20,400 | 410,000 | 64,400 | 8,8  | 408 | 58,24 |
|            | 13:30 | 67,600 | 20,000 | 418,000 | 67,200 | 9,2  | 416 | 58,24 |
|            | 13:45 | 71,200 | 20,400 | 410,000 | 70,800 | 10   | 408 | 58,24 |
|            | 14:00 | 68,400 | 20,400 | 410,000 | 68,000 | 9,6  | 408 | 58,24 |
|            | 14:15 | 66,800 | 21,200 | 425,000 | 66,400 | 10   | 423 | 58,24 |
|            | 14:30 | 68,400 | 20,800 | 410,000 | 68,000 | 10,4 | 408 | 58,24 |
|            | 14:45 | 70,000 | 20,800 | 418,000 | 70,000 | 10   | 416 | 58,24 |
|            | 15:00 | 69,600 | 21,600 | 410,000 | 68,800 | 10,8 | 408 | 58,24 |
|            | 15:15 | 67,600 | 22,000 | 418,000 | 67,200 | 10,8 | 416 | 58,24 |
|            | 15:30 | 70,800 | 22,000 | 410,000 | 70,800 | 11,6 | 408 | 58,24 |
|            | 15:45 | 69,600 | 22,000 | 425,000 | 69,200 | 11,6 | 423 | 58,24 |
|            | 16:00 | 70,400 | 22,400 | 410,000 | 70,000 | 11,6 | 408 | 58,24 |
|            | 16:15 | 67,200 | 22,400 | 418,000 | 66,800 | 11,6 | 416 | 58,24 |
|            | 16:30 | 67,600 | 22,400 | 410,000 | 67,200 | 11,2 | 408 | 58,24 |
|            | 16:45 | 69,600 | 22,000 | 425,000 | 69,200 | 11,2 | 423 | 58,24 |
|            | 17:00 | 69,600 | 21,600 | 410,000 | 69,200 | 10,8 | 408 | 58,24 |
|            | 17:15 | 66,800 | 20,800 | 418,000 | 66,400 | 10   | 416 | 58,24 |
|            | 17:30 | 71,200 | 21,200 | 410,000 | 70,800 | 10,4 | 408 | 58,24 |
|            | 17:45 | 68,800 | 21,200 | 418,000 | 68,800 | 10,8 | 416 | 58,24 |
|            | 18:00 | 70,400 | 21,200 | 410,000 | 70,000 | 10   | 408 | 58,24 |
|            | 18:15 | 57,200 | 21,200 | 425,000 | 56,800 | 9,2  | 423 | 58,24 |
|            | 18:30 | 61,600 | 20,800 | 418,000 | 61,200 | 9,2  | 416 | 58,24 |
|            | 18:45 | 60,000 | 20,800 | 410,000 | 60,000 | 8,8  | 408 | 58,24 |
|            | 19:00 | 61,200 | 20,800 | 425,000 | 60,800 | 9,6  | 423 | 58,24 |
|            | 19:15 | 56,800 | 21,200 | 418,000 | 56,400 | 8,8  | 416 | 58,24 |
|            | 19:30 | 56,400 | 21,200 | 425,000 | 56,400 | 9,2  | 423 | 58,24 |
|            | 19:45 | 52,000 | 21,600 | 410,000 | 51,600 | 8,8  | 408 | 58,24 |
|            | 20:00 | 55,600 | 21,200 | 418,000 | 55,600 | 9,2  | 416 | 58,24 |
|            | 20:15 | 55,200 | 21,200 | 425,000 | 55,200 | 9,2  | 423 | 58,24 |
|            | 20:30 | 55,600 | 21,200 | 402,000 | 55,200 | 8,8  | 400 | 58,24 |
|            | 20:45 | 54,000 | 20,400 | 425,000 | 53,600 | 8,4  | 423 | 58,24 |
|            | 21:00 | 58,800 | 19,600 | 410,000 | 58,800 | 7,6  | 408 | 58,24 |
|            | 21:15 | 55,200 | 19,600 | 418,000 | 54,800 | 7,6  | 416 | 58,24 |
|            | 21:30 | 58,000 | 20,800 | 410,000 | 58,000 | 8,8  | 408 | 58,24 |
|            | 21:45 | 55,600 | 21,200 | 425,000 | 55,200 | 9,2  | 423 | 58,24 |
|            | 22:00 | 54,400 | 22,800 | 410,000 | 54,400 | 10,8 | 408 | 58,24 |
|            | 22:15 | 44,800 | 22,400 | 418,000 | 44,400 | 10   | 416 | 58,24 |
|            | 22:30 | 50,800 | 23,600 | 410,000 | 50,800 | 11,2 | 408 | 58,24 |
|            | 22:45 | 58,400 | 24,000 | 425,000 | 58,000 | 12,8 | 423 | 58,24 |
|            | 23:00 | 61,600 | 24,800 | 410,000 | 61,600 | 13,2 | 408 | 58,24 |
|            | 23:15 | 52,800 | 24,800 | 418,000 | 52,400 | 12,8 | 416 | 58,24 |
|            | 23:30 | 50,400 | 25,600 | 410,000 | 50,000 | 13,2 | 408 | 58,24 |
|            | 23:45 | 50,000 | 26,400 | 418,000 | 50,000 | 14   | 416 | 58,24 |
|            | 0:00  | 53,600 | 26,000 | 410,000 | 53,600 | 14   | 408 | 58,24 |
|            | 0:15  | 55,600 | 26,400 | 425,000 | 55,200 | 14,8 | 423 | 42,45 |
|            | 0:30  | 54,400 | 26,400 | 418,000 | 54,000 | 14   | 416 | 42,45 |
|            | 0:45  | 38,400 | 24,800 | 425,000 | 38,800 | 11,6 | 423 | 42,45 |
|            | 1:00  | 46,000 | 25,600 | 410,000 | 45,200 | 12,8 | 408 | 42,45 |
|            | 1:15  | 47,600 | 25,200 | 418,000 | 47,600 | 12,4 | 416 | 42,45 |
|            | 1:30  | 46,800 | 24,400 | 425,000 | 46,800 | 11,6 | 423 | 42,45 |
|            | 1:45  | 46,400 | 24,400 | 418,000 | 46,000 | 11,6 | 416 | 42,45 |
|            | 2:00  | 46,800 | 24,400 | 425,000 | 46,800 | 11,6 | 423 | 42,45 |
|            | 2:15  | 42,000 | 24,000 | 418,000 | 42,000 | 10,8 | 416 | 42,45 |
|            | 2:30  | 44,400 | 24,000 | 418,000 | 44,000 | 10,8 | 416 | 42,45 |
|            | 2:45  | 43,200 | 24,000 | 425,000 | 43,200 | 10,8 | 423 | 42,45 |
|            | 3:00  | 44,800 | 23,600 | 418,000 | 44,800 | 10,4 | 416 | 42,45 |
|            | 3:15  | 45,200 | 24,000 | 425,000 | 44,800 | 10,8 | 423 | 42,45 |
|            | 3:30  | 40,400 | 25,200 | 418,000 | 40,400 | 12   | 416 | 42,45 |
|            | 3:45  | 46,800 | 24,800 | 425,000 | 46,800 | 11,6 | 423 | 42,45 |
|            | 4:00  | 47,600 | 24,400 | 418,000 | 47,200 | 11,6 | 416 | 42,45 |
|            | 4:15  | 54,000 | 24,800 | 425,000 | 54,000 | 12,4 | 423 | 42,45 |
|            | 4:30  | 57,600 | 25,200 | 418,000 | 57,200 | 12,4 | 416 | 42,45 |
|            | 4:45  | 62,000 | 24,800 | 425,000 | 61,600 | 13,2 | 423 | 42,45 |
|            | 5:00  | 65,200 | 24,400 | 418,000 | 64,800 | 13,2 | 416 | 42,45 |
|            | 5:15  | 66,000 | 24,400 | 425,000 | 66,000 | 12,8 | 423 | 42,45 |
|            | 5:30  | 64,000 | 24,800 | 418,000 | 63,600 | 13,2 | 416 | 42,45 |
|            | 5:45  | 63,600 | 24,800 | 425,000 | 63,600 | 12,8 | 423 | 42,45 |
|            | 6:00  | 62,000 | 24,800 | 418,000 | 61,600 | 13,2 | 416 | 42,45 |
|            | 6:15  | 62,000 | 24,800 | 418,000 | 61,600 | 12,8 | 416 | 42,45 |
| 29.7.2015. |       |        |        |         |        |      |     |       |

|            |       |        |        |         |        |      |     |       |
|------------|-------|--------|--------|---------|--------|------|-----|-------|
|            | 6:30  | 60,000 | 24,400 | 425,000 | 59,600 | 12,8 | 423 | 42,45 |
|            | 6:45  | 61,200 | 24,400 | 418,000 | 60,800 | 12,4 | 416 | 42,45 |
|            | 7:00  | 66,000 | 24,000 | 425,000 | 66,000 | 12,8 | 423 | 42,45 |
|            | 7:15  | 71,200 | 24,000 | 410,000 | 70,400 | 13,2 | 408 | 42,45 |
|            | 7:30  | 72,000 | 24,000 | 418,000 | 72,000 | 14   | 416 | 42,45 |
|            | 7:45  | 71,200 | 24,000 | 425,000 | 70,800 | 13,2 | 423 | 42,45 |
|            | 8:00  | 70,800 | 22,400 | 410,000 | 70,400 | 11,6 | 408 | 42,45 |
|            | 8:15  | 71,600 | 22,000 | 418,000 | 71,200 | 12   | 416 | 42,45 |
|            | 8:30  | 71,600 | 21,600 | 410,000 | 71,200 | 11,2 | 408 | 42,45 |
|            | 8:45  | 74,000 | 20,800 | 410,000 | 73,600 | 10,4 | 408 | 42,45 |
|            | 9:00  | 75,200 | 20,800 | 418,000 | 74,800 | 11,2 | 416 | 42,45 |
|            | 9:15  | 73,600 | 21,200 | 410,000 | 73,200 | 10,8 | 408 | 42,45 |
|            | 9:30  | 74,800 | 21,600 | 410,000 | 74,400 | 11,6 | 408 | 42,45 |
|            | 9:45  | 70,400 | 22,000 | 425,000 | 70,000 | 11,6 | 423 | 42,45 |
|            | 10:00 | 68,000 | 22,000 | 410,000 | 67,600 | 11,2 | 408 | 42,45 |
|            | 10:15 | 69,600 | 22,800 | 410,000 | 69,200 | 12,4 | 408 | 42,45 |
|            | 10:30 | 67,200 | 22,800 | 418,000 | 67,200 | 12   | 416 | 42,45 |
|            | 10:45 | 69,600 | 22,800 | 410,000 | 69,200 | 12,4 | 408 | 42,45 |
|            | 11:00 | 70,800 | 22,800 | 410,000 | 70,000 | 12,4 | 408 | 42,45 |
|            | 11:15 | 72,400 | 22,400 | 418,000 | 72,000 | 12   | 416 | 42,45 |
|            | 11:30 | 74,400 | 21,200 | 410,000 | 74,000 | 11,6 | 408 | 42,45 |
|            | 11:45 | 74,400 | 21,600 | 410,000 | 74,400 | 11,6 | 408 | 42,45 |
|            | 12:00 | 73,200 | 21,600 | 410,000 | 72,400 | 11,6 | 408 | 42,45 |
|            | 12:15 | 75,200 | 22,000 | 410,000 | 74,800 | 12,4 | 408 | 42,45 |
|            | 12:30 | 73,600 | 22,800 | 410,000 | 73,200 | 12,8 | 408 | 42,45 |
|            | 12:45 | 74,000 | 22,800 | 410,000 | 73,600 | 12,8 | 408 | 42,45 |
|            | 13:00 | 72,000 | 23,200 | 425,000 | 71,600 | 13,2 | 423 | 42,45 |
|            | 13:15 | 72,400 | 22,800 | 410,000 | 72,000 | 12,8 | 408 | 42,45 |
|            | 13:30 | 70,000 | 22,800 | 402,000 | 69,600 | 12,8 | 400 | 42,45 |
|            | 13:45 | 68,800 | 23,200 | 410,000 | 68,400 | 12,4 | 408 | 42,45 |
|            | 14:00 | 70,800 | 22,800 | 410,000 | 70,400 | 12,8 | 408 | 42,45 |
|            | 14:15 | 71,200 | 23,200 | 410,000 | 70,800 | 12,8 | 408 | 42,45 |
|            | 14:30 | 70,000 | 23,200 | 425,000 | 69,600 | 13,2 | 423 | 42,45 |
|            | 14:45 | 69,600 | 24,400 | 410,000 | 69,200 | 14   | 408 | 42,45 |
|            | 15:00 | 68,800 | 24,400 | 410,000 | 68,400 | 14   | 408 | 42,45 |
|            | 15:15 | 73,200 | 24,400 | 410,000 | 72,800 | 14,4 | 408 | 42,45 |
|            | 15:30 | 70,800 | 24,400 | 418,000 | 70,400 | 14   | 416 | 42,45 |
|            | 15:45 | 73,200 | 24,400 | 410,000 | 72,800 | 14,4 | 408 | 42,45 |
|            | 16:00 | 72,400 | 24,400 | 410,000 | 72,000 | 14,8 | 408 | 42,45 |
|            | 16:15 | 69,600 | 25,600 | 418,000 | 69,600 | 14,8 | 416 | 42,45 |
|            | 16:30 | 72,800 | 24,800 | 410,000 | 72,000 | 14,8 | 408 | 42,45 |
|            | 16:45 | 71,200 | 24,800 | 410,000 | 70,800 | 14,4 | 408 | 42,45 |
|            | 17:00 | 71,200 | 24,800 | 425,000 | 71,200 | 14,8 | 423 | 42,45 |
|            | 17:15 | 70,000 | 25,200 | 410,000 | 69,200 | 14,4 | 408 | 42,45 |
|            | 17:30 | 66,000 | 24,400 | 410,000 | 66,000 | 14   | 408 | 42,45 |
|            | 17:45 | 68,400 | 25,200 | 418,000 | 68,000 | 14,4 | 416 | 42,45 |
|            | 18:00 | 67,200 | 24,800 | 410,000 | 66,800 | 14   | 408 | 42,45 |
|            | 18:15 | 61,600 | 24,800 | 418,000 | 61,600 | 13,6 | 416 | 42,45 |
|            | 18:30 | 66,000 | 24,400 | 410,000 | 65,600 | 13,6 | 408 | 42,45 |
|            | 18:45 | 66,800 | 24,400 | 425,000 | 66,400 | 13,6 | 423 | 42,45 |
|            | 19:00 | 71,200 | 24,400 | 410,000 | 70,800 | 13,6 | 408 | 42,45 |
|            | 19:15 | 67,600 | 24,000 | 410,000 | 66,800 | 13,6 | 408 | 42,45 |
|            | 19:30 | 67,600 | 24,000 | 418,000 | 67,600 | 13,2 | 416 | 42,45 |
|            | 19:45 | 66,400 | 24,000 | 410,000 | 66,400 | 13,2 | 408 | 42,45 |
|            | 20:00 | 65,600 | 24,000 | 425,000 | 65,200 | 13,2 | 423 | 42,45 |
|            | 20:15 | 66,800 | 24,000 | 410,000 | 66,000 | 13,2 | 408 | 42,45 |
|            | 20:30 | 64,400 | 24,000 | 410,000 | 64,400 | 12,8 | 408 | 42,45 |
|            | 20:45 | 63,200 | 22,800 | 418,000 | 62,800 | 11,6 | 416 | 42,45 |
|            | 21:00 | 67,600 | 22,400 | 410,000 | 67,200 | 12   | 408 | 42,45 |
|            | 21:15 | 65,600 | 22,400 | 410,000 | 65,600 | 11,6 | 408 | 42,45 |
|            | 21:30 | 64,000 | 23,200 | 410,000 | 63,600 | 12   | 408 | 42,45 |
|            | 21:45 | 69,200 | 23,200 | 418,000 | 68,800 | 12,8 | 416 | 42,45 |
|            | 22:00 | 71,200 | 23,600 | 410,000 | 70,800 | 13,2 | 408 | 42,45 |
|            | 22:15 | 69,600 | 24,000 | 425,000 | 69,600 | 14   | 423 | 42,45 |
|            | 22:30 | 70,400 | 25,600 | 410,000 | 70,000 | 15,2 | 408 | 42,45 |
|            | 22:45 | 72,800 | 26,800 | 410,000 | 72,400 | 16,8 | 408 | 42,45 |
|            | 23:00 | 72,800 | 28,400 | 410,000 | 72,400 | 18,8 | 408 | 42,45 |
|            | 23:15 | 64,400 | 28,400 | 418,000 | 64,000 | 17,6 | 416 | 42,45 |
|            | 23:30 | 73,600 | 29,200 | 410,000 | 72,800 | 19,6 | 408 | 42,45 |
|            | 23:45 | 72,400 | 29,200 | 410,000 | 72,400 | 19,2 | 408 | 42,45 |
|            | 0:00  | 71,200 | 29,200 | 418,000 | 70,800 | 18,8 | 416 | 42,45 |
| 30.7.2015. | 0:15  | 64,000 | 28,400 | 410,000 | 63,600 | 18   | 408 | 35,72 |
|            | 0:30  | 63,200 | 28,000 | 410,000 | 62,800 | 17,2 | 408 | 35,72 |
|            | 0:45  | 55,200 | 28,000 | 425,000 | 54,800 | 16   | 423 | 35,72 |
|            | 1:00  | 57,600 | 28,400 | 410,000 | 57,600 | 16,8 | 408 | 35,72 |
|            | 1:15  | 55,200 | 28,400 | 418,000 | 54,800 | 16,8 | 416 | 35,72 |
|            | 1:30  | 57,200 | 29,200 | 410,000 | 56,800 | 17,6 | 408 | 35,72 |
|            | 1:45  | 61,200 | 29,200 | 418,000 | 61,200 | 18   | 416 | 35,72 |
|            | 2:00  | 58,800 | 29,200 | 425,000 | 58,400 | 17,6 | 423 | 35,72 |
|            | 2:15  | 59,600 | 29,200 | 410,000 | 59,600 | 17,6 | 408 | 35,72 |

|       |        |        |         |        |      |     |       |
|-------|--------|--------|---------|--------|------|-----|-------|
| 2:30  | 60,400 | 28,800 | 418,000 | 60,000 | 17,6 | 416 | 35,72 |
| 2:45  | 59,200 | 28,800 | 425,000 | 59,200 | 16,8 | 423 | 35,72 |
| 3:00  | 57,600 | 28,400 | 418,000 | 57,200 | 16,8 | 416 | 35,72 |
| 3:15  | 59,200 | 28,400 | 410,000 | 58,800 | 17,2 | 408 | 35,72 |
| 3:30  | 59,600 | 28,000 | 425,000 | 59,200 | 16   | 423 | 35,72 |
| 3:45  | 60,400 | 27,200 | 418,000 | 60,000 | 15,6 | 416 | 35,72 |
| 4:00  | 58,000 | 27,200 | 425,000 | 58,000 | 15,2 | 423 | 35,72 |
| 4:15  | 55,200 | 26,800 | 410,000 | 54,800 | 15,2 | 408 | 35,72 |
| 4:30  | 54,000 | 27,200 | 418,000 | 53,600 | 14,8 | 416 | 35,72 |
| 4:45  | 57,200 | 26,800 | 418,000 | 57,200 | 14,8 | 416 | 35,72 |
| 5:00  | 56,400 | 27,200 | 425,000 | 56,400 | 15,2 | 423 | 35,72 |
| 5:15  | 53,200 | 26,400 | 418,000 | 52,800 | 14,4 | 416 | 35,72 |
| 5:30  | 55,600 | 26,400 | 410,000 | 55,600 | 14   | 408 | 35,72 |
| 5:45  | 52,400 | 26,000 | 425,000 | 52,000 | 14   | 423 | 35,72 |
| 6:00  | 50,800 | 26,000 | 418,000 | 50,400 | 13,6 | 416 | 35,72 |
| 6:15  | 53,600 | 25,200 | 425,000 | 53,600 | 12,8 | 423 | 35,72 |
| 6:30  | 48,400 | 26,000 | 418,000 | 48,000 | 12,8 | 416 | 35,72 |
| 6:45  | 49,600 | 23,200 | 425,000 | 49,200 | 10,8 | 423 | 35,72 |
| 7:00  | 51,200 | 22,000 | 418,000 | 51,200 | 9,2  | 416 | 35,72 |
| 7:15  | 57,600 | 21,200 | 425,000 | 57,600 | 8,8  | 423 | 35,72 |
| 7:30  | 55,200 | 20,000 | 410,000 | 54,800 | 7,6  | 408 | 35,72 |
| 7:45  | 57,200 | 19,600 | 418,000 | 56,800 | 7,2  | 416 | 35,72 |
| 8:00  | 57,200 | 19,200 | 418,000 | 57,200 | 7,2  | 416 | 35,72 |
| 8:15  | 61,600 | 19,600 | 425,000 | 61,200 | 8    | 423 | 35,72 |
| 8:30  | 59,200 | 19,200 | 410,000 | 58,800 | 7,2  | 408 | 35,72 |
| 8:45  | 58,400 | 18,800 | 418,000 | 58,400 | 7,2  | 416 | 35,72 |
| 9:00  | 57,600 | 19,200 | 425,000 | 57,200 | 7,2  | 423 | 35,72 |
| 9:15  | 64,400 | 20,000 | 410,000 | 64,400 | 8,4  | 408 | 35,72 |
| 9:30  | 66,800 | 20,000 | 418,000 | 66,400 | 9,2  | 416 | 35,72 |
| 9:45  | 64,800 | 20,800 | 410,000 | 64,400 | 9,2  | 408 | 35,72 |
| 10:00 | 64,000 | 20,800 | 425,000 | 63,600 | 9,2  | 423 | 35,72 |
| 10:15 | 70,800 | 21,200 | 418,000 | 70,400 | 10,8 | 416 | 35,72 |
| 10:30 | 71,200 | 21,200 | 410,000 | 71,200 | 10,4 | 408 | 35,72 |
| 10:45 | 72,800 | 21,200 | 425,000 | 72,000 | 10,8 | 423 | 35,72 |
| 11:00 | 68,400 | 20,800 | 402,000 | 68,400 | 10   | 400 | 35,72 |
| 11:15 | 76,400 | 20,800 | 425,000 | 75,600 | 10,8 | 423 | 35,72 |
| 11:30 | 76,400 | 21,600 | 410,000 | 76,000 | 11,6 | 408 | 35,72 |
| 11:45 | 74,400 | 22,000 | 418,000 | 74,000 | 11,6 | 416 | 35,72 |
| 12:00 | 74,400 | 22,000 | 410,000 | 74,400 | 12,4 | 408 | 35,72 |
| 12:15 | 71,600 | 22,400 | 425,000 | 71,200 | 11,6 | 423 | 35,72 |
| 12:30 | 71,600 | 22,800 | 410,000 | 70,800 | 12,4 | 408 | 35,72 |
| 12:45 | 75,200 | 22,800 | 418,000 | 74,800 | 12,8 | 416 | 35,72 |
| 13:00 | 71,200 | 23,600 | 410,000 | 71,200 | 12,8 | 408 | 35,72 |
| 13:15 | 73,600 | 23,200 | 425,000 | 72,800 | 13,6 | 423 | 35,72 |
| 13:30 | 75,200 | 23,600 | 402,000 | 74,800 | 13,2 | 400 | 35,72 |
| 13:45 | 76,400 | 23,200 | 425,000 | 76,000 | 13,6 | 423 | 35,72 |
| 14:00 | 75,200 | 24,000 | 410,000 | 74,800 | 13,6 | 408 | 35,72 |
| 14:15 | 74,400 | 24,000 | 418,000 | 74,000 | 14   | 416 | 35,72 |
| 14:30 | 74,000 | 24,000 | 410,000 | 73,600 | 14   | 408 | 35,72 |
| 14:45 | 72,000 | 24,400 | 425,000 | 71,600 | 14   | 423 | 35,72 |
| 15:00 | 70,000 | 24,000 | 410,000 | 69,600 | 13,2 | 408 | 35,72 |
| 15:15 | 66,000 | 24,400 | 418,000 | 66,000 | 13,6 | 416 | 35,72 |
| 15:30 | 64,000 | 24,800 | 425,000 | 63,200 | 13,2 | 423 | 35,72 |
| 15:45 | 68,400 | 24,400 | 410,000 | 68,400 | 14   | 408 | 35,72 |
| 16:00 | 66,000 | 24,800 | 418,000 | 65,600 | 13,6 | 416 | 35,72 |
| 16:15 | 60,400 | 24,000 | 418,000 | 60,000 | 12,4 | 416 | 35,72 |
| 16:30 | 62,800 | 24,400 | 410,000 | 62,800 | 12,8 | 408 | 35,72 |
| 16:45 | 62,800 | 24,000 | 425,000 | 62,400 | 12,4 | 423 | 35,72 |
| 17:00 | 61,200 | 24,000 | 418,000 | 60,800 | 12,4 | 416 | 35,72 |
| 17:15 | 58,800 | 24,000 | 410,000 | 58,800 | 12,4 | 408 | 35,72 |
| 17:30 | 56,800 | 24,000 | 425,000 | 56,400 | 11,6 | 423 | 35,72 |
| 17:45 | 58,000 | 23,600 | 418,000 | 57,600 | 12   | 416 | 35,72 |
| 18:00 | 57,200 | 24,000 | 425,000 | 57,200 | 11,6 | 423 | 35,72 |
| 18:15 | 53,200 | 23,600 | 418,000 | 53,200 | 11,2 | 416 | 35,72 |
| 18:30 | 53,600 | 23,200 | 425,000 | 52,800 | 10,8 | 423 | 35,72 |
| 18:45 | 56,400 | 23,200 | 410,000 | 56,800 | 11,2 | 408 | 35,72 |
| 19:00 | 55,200 | 22,800 | 418,000 | 54,800 | 10,4 | 416 | 35,72 |
| 19:15 | 54,800 | 22,400 | 425,000 | 54,400 | 10,4 | 423 | 35,72 |
| 19:30 | 52,400 | 22,800 | 418,000 | 52,400 | 10   | 416 | 35,72 |
| 19:45 | 53,200 | 22,800 | 418,000 | 52,800 | 10,4 | 416 | 35,72 |
| 20:00 | 46,400 | 22,000 | 425,000 | 46,400 | 9,2  | 423 | 35,72 |
| 20:15 | 45,200 | 21,600 | 410,000 | 44,800 | 8,4  | 408 | 35,72 |
| 20:30 | 43,600 | 20,800 | 418,000 | 43,600 | 8    | 416 | 35,72 |
| 20:45 | 41,600 | 19,600 | 425,000 | 41,200 | 6,4  | 423 | 35,72 |
| 21:00 | 43,200 | 19,600 | 410,000 | 43,600 | 6,4  | 408 | 35,72 |
| 21:15 | 48,800 | 20,000 | 418,000 | 48,400 | 7,6  | 416 | 35,72 |
| 21:30 | 48,800 | 21,600 | 425,000 | 48,800 | 8,8  | 423 | 35,72 |
| 21:45 | 48,400 | 22,800 | 410,000 | 48,000 | 10,4 | 408 | 35,72 |
| 22:00 | 49,600 | 23,600 | 418,000 | 49,600 | 10,8 | 416 | 35,72 |
| 22:15 | 42,800 | 24,400 | 425,000 | 42,800 | 11,6 | 423 | 35,72 |

|  |       |        |        |         |        |      |     |       |
|--|-------|--------|--------|---------|--------|------|-----|-------|
|  | 22:30 | 46,000 | 26,000 | 402,000 | 45,600 | 13,2 | 400 | 35,72 |
|  | 22:45 | 47,600 | 26,400 | 425,000 | 47,600 | 14,4 | 423 | 35,72 |
|  | 23:00 | 48,400 | 27,600 | 418,000 | 48,000 | 14,4 | 416 | 35,72 |
|  | 23:15 | 40,800 | 27,200 | 410,000 | 40,800 | 14,8 | 408 | 35,72 |
|  | 23:30 | 44,000 | 28,800 | 425,000 | 43,600 | 15,6 | 423 | 35,72 |
|  | 23:45 | 44,400 | 28,000 | 418,000 | 44,400 | 15,6 | 416 | 35,72 |
|  | 0:00  | 44,000 | 28,000 | 410,000 | 43,600 | 15,2 | 408 | 35,72 |
|  | 0:15  | 40,800 | 27,600 | 425,000 | 40,800 | 14,8 | 423 | 40,46 |
|  | 0:30  | 39,200 | 28,400 | 418,000 | 39,200 | 15,2 | 416 | 40,46 |
|  | 0:45  | 42,000 | 28,400 | 425,000 | 42,000 | 15,6 | 423 | 40,46 |
|  | 1:00  | 39,600 | 27,200 | 418,000 | 39,200 | 14   | 416 | 40,46 |
|  | 1:15  | 42,400 | 26,400 | 410,000 | 42,400 | 13,2 | 408 | 40,46 |
|  | 1:30  | 38,800 | 26,800 | 418,000 | 38,800 | 13,6 | 416 | 40,46 |
|  | 1:45  | 40,400 | 26,800 | 425,000 | 40,000 | 13,6 | 423 | 40,46 |
|  | 2:00  | 40,800 | 27,600 | 418,000 | 40,800 | 14,4 | 416 | 40,46 |
|  | 2:15  | 44,000 | 28,800 | 425,000 | 44,000 | 15,6 | 423 | 40,46 |
|  | 2:30  | 42,400 | 28,000 | 418,000 | 42,000 | 14,8 | 416 | 40,46 |
|  | 2:45  | 40,000 | 26,400 | 425,000 | 40,000 | 13,2 | 423 | 40,46 |
|  | 3:00  | 40,800 | 26,000 | 433,000 | 40,800 | 12,8 | 431 | 40,46 |
|  | 3:15  | 42,800 | 26,400 | 418,000 | 42,800 | 12,8 | 416 | 40,46 |
|  | 3:30  | 41,600 | 26,000 | 425,000 | 41,200 | 12,4 | 423 | 40,46 |
|  | 3:45  | 41,600 | 25,600 | 418,000 | 41,600 | 12   | 416 | 40,46 |
|  | 4:00  | 41,200 | 25,200 | 433,000 | 40,800 | 12   | 431 | 40,46 |
|  | 4:15  | 40,800 | 25,600 | 425,000 | 40,800 | 12   | 423 | 40,46 |
|  | 4:30  | 42,400 | 25,600 | 418,000 | 42,400 | 12   | 416 | 40,46 |
|  | 4:45  | 43,600 | 24,800 | 425,000 | 43,200 | 11,6 | 423 | 40,46 |
|  | 5:00  | 43,600 | 25,600 | 433,000 | 43,600 | 12   | 431 | 40,46 |
|  | 5:15  | 45,200 | 24,800 | 418,000 | 45,200 | 12   | 416 | 40,46 |
|  | 5:30  | 45,200 | 25,200 | 425,000 | 44,800 | 11,6 | 423 | 40,46 |
|  | 5:45  | 43,200 | 25,200 | 418,000 | 43,200 | 11,6 | 416 | 40,46 |
|  | 6:00  | 41,600 | 24,800 | 433,000 | 41,200 | 11,6 | 431 | 40,46 |
|  | 6:15  | 44,400 | 24,000 | 418,000 | 44,400 | 10,4 | 416 | 40,46 |
|  | 6:30  | 42,400 | 23,600 | 425,000 | 42,000 | 10   | 423 | 40,46 |
|  | 6:45  | 40,800 | 22,800 | 418,000 | 40,800 | 9,2  | 416 | 40,46 |
|  | 7:00  | 41,200 | 22,000 | 425,000 | 41,200 | 8,8  | 423 | 40,46 |
|  | 7:15  | 50,000 | 22,000 | 418,000 | 50,000 | 8,8  | 416 | 40,46 |
|  | 7:30  | 43,200 | 21,600 | 425,000 | 43,200 | 8,8  | 423 | 40,46 |
|  | 7:45  | 44,000 | 22,000 | 418,000 | 43,600 | 8,8  | 416 | 40,46 |
|  | 8:00  | 45,200 | 22,400 | 425,000 | 44,800 | 9,2  | 423 | 40,46 |
|  | 8:15  | 46,800 | 22,000 | 418,000 | 46,800 | 9,2  | 416 | 40,46 |
|  | 8:30  | 50,400 | 22,800 | 425,000 | 50,400 | 10   | 423 | 40,46 |
|  | 8:45  | 50,800 | 22,400 | 410,000 | 50,400 | 10   | 408 | 40,46 |
|  | 9:00  | 50,400 | 22,800 | 418,000 | 50,400 | 10   | 416 | 40,46 |
|  | 9:15  | 48,000 | 22,400 | 418,000 | 47,600 | 10   | 416 | 40,46 |
|  | 9:30  | 46,400 | 22,400 | 425,000 | 46,400 | 9,6  | 423 | 40,46 |
|  | 9:45  | 47,200 | 21,600 | 410,000 | 46,800 | 8,8  | 408 | 40,46 |
|  | 10:00 | 49,600 | 22,400 | 418,000 | 49,200 | 9,6  | 416 | 40,46 |
|  | 10:15 | 50,000 | 22,800 | 425,000 | 49,600 | 10,8 | 423 | 40,46 |
|  | 10:30 | 48,000 | 23,200 | 410,000 | 47,600 | 10,4 | 408 | 40,46 |
|  | 10:45 | 49,600 | 22,400 | 418,000 | 49,200 | 9,6  | 416 | 40,46 |
|  | 11:00 | 48,400 | 22,000 | 425,000 | 48,000 | 9,6  | 423 | 40,46 |
|  | 11:15 | 48,800 | 21,600 | 410,000 | 48,800 | 8,8  | 408 | 40,46 |
|  | 11:30 | 48,400 | 21,200 | 418,000 | 47,600 | 8,8  | 416 | 40,46 |
|  | 11:45 | 49,600 | 21,600 | 425,000 | 49,600 | 8,8  | 423 | 40,46 |
|  | 12:00 | 49,600 | 21,600 | 410,000 | 49,600 | 8,8  | 408 | 40,46 |
|  | 12:15 | 52,800 | 22,000 | 418,000 | 52,800 | 9,6  | 416 | 40,46 |
|  | 12:30 | 53,200 | 22,000 | 418,000 | 52,800 | 10   | 416 | 40,46 |
|  | 12:45 | 52,800 | 22,000 | 410,000 | 52,400 | 9,6  | 408 | 40,46 |
|  | 13:00 | 50,800 | 22,000 | 425,000 | 50,400 | 9,6  | 423 | 40,46 |
|  | 13:15 | 50,800 | 22,000 | 418,000 | 50,800 | 9,6  | 416 | 40,46 |
|  | 13:30 | 50,800 | 22,400 | 410,000 | 50,400 | 9,6  | 408 | 40,46 |
|  | 13:45 | 52,800 | 22,400 | 425,000 | 52,400 | 10,4 | 423 | 40,46 |
|  | 14:00 | 51,200 | 22,400 | 418,000 | 51,200 | 10   | 416 | 40,46 |
|  | 14:15 | 50,000 | 22,800 | 410,000 | 50,000 | 9,6  | 408 | 40,46 |
|  | 14:30 | 49,600 | 22,400 | 425,000 | 49,200 | 10   | 423 | 40,46 |
|  | 14:45 | 50,000 | 22,800 | 418,000 | 50,000 | 10   | 416 | 40,46 |
|  | 15:00 | 48,800 | 22,800 | 425,000 | 48,400 | 10,4 | 423 | 40,46 |

31.7.2015.

|       |        |        |         |        |      |     |       |
|-------|--------|--------|---------|--------|------|-----|-------|
| 15:15 | 46,800 | 23,200 | 418,000 | 46,400 | 10   | 416 | 40,46 |
| 15:30 | 44,800 | 22,800 | 418,000 | 45,200 | 10   | 416 | 40,46 |
| 15:45 | 46,400 | 23,200 | 410,000 | 46,000 | 10,4 | 408 | 40,46 |
| 16:00 | 46,800 | 23,600 | 425,000 | 46,800 | 10,4 | 423 | 40,46 |
| 16:15 | 42,400 | 22,800 | 418,000 | 42,400 | 10   | 416 | 40,46 |
| 16:30 | 42,000 | 23,200 | 425,000 | 41,600 | 9,6  | 423 | 40,46 |
| 16:45 | 44,400 | 23,200 | 418,000 | 44,400 | 10   | 416 | 40,46 |
| 17:00 | 43,600 | 23,200 | 425,000 | 43,200 | 10   | 423 | 40,46 |
| 17:15 | 43,600 | 23,200 | 418,000 | 43,600 | 10,4 | 416 | 40,46 |
| 17:30 | 47,600 | 23,600 | 425,000 | 47,600 | 10,4 | 423 | 40,46 |
| 17:45 | 44,400 | 23,200 | 418,000 | 44,400 | 10,4 | 416 | 40,46 |
| 18:00 | 43,200 | 23,200 | 425,000 | 42,800 | 10   | 423 | 40,46 |
| 18:15 | 42,800 | 23,600 | 418,000 | 42,800 | 10   | 416 | 40,46 |
| 18:30 | 49,600 | 24,000 | 425,000 | 49,200 | 11,2 | 423 | 40,46 |
| 18:45 | 51,200 | 23,600 | 402,000 | 51,200 | 11,2 | 400 | 40,46 |
| 19:00 | 49,200 | 23,600 | 425,000 | 48,800 | 10,4 | 423 | 40,46 |
| 19:15 | 62,800 | 24,000 | 418,000 | 62,400 | 12,4 | 416 | 40,46 |
| 19:30 | 60,800 | 24,000 | 425,000 | 60,400 | 12,4 | 423 | 40,46 |
| 19:45 | 56,800 | 24,400 | 418,000 | 56,800 | 12   | 416 | 40,46 |
| 20:00 | 56,400 | 24,000 | 425,000 | 56,000 | 11,6 | 423 | 40,46 |
| 20:15 | 53,200 | 24,000 | 418,000 | 53,200 | 11,6 | 416 | 40,46 |
| 20:30 | 53,200 | 24,000 | 425,000 | 52,800 | 11,6 | 423 | 40,46 |
| 20:45 | 52,400 | 22,800 | 418,000 | 52,400 | 10,4 | 416 | 40,46 |
| 21:00 | 54,800 | 21,600 | 410,000 | 54,800 | 9,6  | 408 | 40,46 |
| 21:15 | 55,600 | 24,000 | 425,000 | 55,200 | 12   | 423 | 40,46 |
| 21:30 | 59,200 | 26,800 | 410,000 | 58,800 | 15,2 | 408 | 40,46 |
| 21:45 | 58,800 | 27,200 | 418,000 | 58,400 | 16   | 416 | 40,46 |
| 22:00 | 58,800 | 28,000 | 410,000 | 58,800 | 16,4 | 408 | 40,46 |
| 22:15 | 55,600 | 27,200 | 418,000 | 55,200 | 15,6 | 416 | 40,46 |
| 22:30 | 64,800 | 27,600 | 410,000 | 64,800 | 16,8 | 408 | 40,46 |
| 22:45 | 65,200 | 28,000 | 425,000 | 64,800 | 16,8 | 423 | 40,46 |
| 23:00 | 68,000 | 28,800 | 410,000 | 67,200 | 18   | 408 | 40,46 |
| 23:15 | 67,600 | 28,400 | 418,000 | 67,600 | 18   | 416 | 40,46 |
| 23:30 | 63,600 | 28,400 | 425,000 | 63,200 | 17,2 | 423 | 40,46 |
| 23:45 | 67,200 | 28,400 | 410,000 | 66,800 | 17,6 | 408 | 40,46 |
| 0:00  | 63,600 | 28,000 | 418,000 | 63,200 | 16,8 | 416 | 40,46 |



Tablica P.14. Rezultati proračuna razmijenjene energije za cijeli mjesec srpanj 2015.

| Datum     | Vrijeme | Energija virtualne mjerne točke [MWh] | Ispravljena energija virtualne mjerne točke [MWh] | Ispravak energije [kWh] | Iznos ispravka [EUR] |
|-----------|---------|---------------------------------------|---|-------------------------|----------------------|
| 1.7.2015. | 0:15    | 39,200                                | 39,210  | 9,66                    | 0,39                 |
|           | 0:30    | 36,400                                | 36,414  | 13,75                   | 0,55                 |
|           | 0:45    | 35,600                                | 35,616  | 16,21                   | 0,65                 |
|           | 1:00    | 33,781                                | 33,797  | 16,27                   | 0,65                 |
|           | 1:15    | 42,000                                | 42,017  | 16,72                   | 0,67                 |
|           | 1:30    | 44,581                                | 44,600  | 19,34                   | 0,77                 |
|           | 1:45    | 43,200                                | 43,209  | 9,46                    | 0,38                 |
|           | 2:00    | 46,400                                | 46,422  | 22,11                   | 0,88                 |
|           | 2:15    | 52,800                                | 52,821  | 20,74                   | 0,83                 |
|           | 2:30    | 54,581                                | 54,605  | 23,72                   | 0,95                 |
|           | 2:45    | 53,381                                | 53,409  | 27,46                   | 1,10                 |
|           | 3:00    | 51,600                                | 51,611  | 10,60                   | 0,42                 |
|           | 3:15    | 57,381                                | 57,400  | 18,90                   | 0,76                 |
|           | 3:30    | 57,200                                | 57,213  | 12,75                   | 0,51                 |
|           | 3:45    | 58,581                                | 58,599  | 17,49                   | 0,70                 |
|           | 4:00    | 61,600                                | 61,616  | 15,60                   | 0,62                 |
|           | 4:15    | 60,581                                | 60,594  | 12,41                   | 0,50                 |
|           | 4:30    | 62,181                                | 62,199  | 17,61                   | 0,70                 |
|           | 4:45    | 65,381                                | 65,394  | 12,94                   | 0,52                 |
|           | 5:00    | 73,381                                | 73,403  | 21,79                   | 0,87                 |
|           | 5:15    | 60,800                                | 60,819  | 19,27                   | 0,77                 |
|           | 5:30    | 63,381                                | 63,402  | 21,28                   | 0,85                 |
|           | 5:45    | 62,581                                | 62,608  | 27,09                   | 1,08                 |
|           | 6:00    | 61,200                                | 61,219  | 19,22                   | 0,77                 |
|           | 6:15    | 79,381                                | 79,397  | 15,66                   | 0,63                 |
|           | 6:30    | 71,162                                | 71,186  | 23,47                   | 0,94                 |
|           | 6:45    | 68,981                                | 69,006  | 25,18                   | 1,01                 |
|           | 7:00    | 81,381                                | 81,391  | 9,77                    | 0,39                 |
|           | 7:15    | 87,781                                | 87,795  | 13,67                   | 0,55                 |
|           | 7:30    | 84,362                                | 84,374  | 11,29                   | 0,45                 |
|           | 7:45    | 79,381                                | 79,408  | 26,58                   | 1,06                 |
|           | 8:00    | 87,781                                | 87,806  | 25,20                   | 1,01                 |
|           | 8:15    | 111,162                               | 111,177   | 14,35                   | 0,57                 |
|           | 8:30    | 112,943                               | 112,962   | 18,96                   | 0,76                 |
|           | 8:45    | 110,143                               | 110,170   | 27,09                   | 1,08                 |
|           | 9:00    | 115,162                               | 115,185   | 23,21                   | 0,93                 |
|           | 9:15    | 107,962                               | 107,983   | 20,58                   | 0,82                 |
|           | 9:30    | 98,762                                | 98,774  | 11,96                   | 0,48                 |
|           | 9:45    | 101,562                               | 101,579   | 16,73                   | 0,67                 |
|           | 10:00   | 103,962                               | 103,982   | 19,91                   | 0,80                 |
|           | 10:15   | 108,143                               | 108,170   | 27,10                   | 1,08                 |
|           | 10:30   | 107,962                               | 107,977   | 15,03                   | 0,60                 |
|           | 10:45   | 110,143                               | 110,175   | 31,20                   | 1,25                 |
|           | 11:00   | 113,562                               | 113,589   | 26,87                   | 1,07                 |
|           | 11:15   | 110,762                               | 110,781   | 18,69                   | 0,75                 |
|           | 11:30   | 110,143                               | 110,170   | 27,09                   | 1,08                 |
|           | 11:45   | 109,962                               | 109,981   | 18,41                   | 0,74                 |
|           | 12:00   | 111,162                               | 111,175   | 12,49                   | 0,50                 |
| 12:15     | 103,162 | 103,177                               | 14,78   | 0,59                    |                      |
| 12:30     | 103,743 | 103,761                               | 17,47   | 0,70                    |                      |
| 12:45     | 109,562 | 109,589                               | 26,98   | 1,08                    |                      |
| 13:00     | 112,362 | 112,377                               | 14,24   | 0,57                    |                      |
| 13:15     | 114,943 | 114,974                               | 30,81   | 1,23                    |                      |
| 13:30     | 107,343 | 107,365                               | 21,94   | 0,88                    |                      |
| 13:45     | 112,362 | 112,380                               | 17,27   | 0,69                    |                      |
| 14:00     | 104,362 | 104,388                               | 25,82   | 1,03                    |                      |
| 14:15     | 111,162 | 111,176                               | 13,63   | 0,54                    |                      |
| 14:30     | 119,743 | 119,766                               | 22,39   | 0,90                    |                      |
| 14:45     | 123,925 | 123,945                               | 20,39   | 0,81                    |                      |
| 15:00     | 129,743 | 129,771                               | 27,23   | 1,09                    |                      |

|           |       |         |         |       |      |
|-----------|-------|---------|---------|-------|------|
|           | 15:15 | 126,543 | 126,563 | 19,62 | 0,78 |
|           | 15:30 | 125,343 | 125,370 | 26,99 | 1,08 |
|           | 15:45 | 127,525 | 127,552 | 27,84 | 1,11 |
|           | 16:00 | 119,743 | 119,771 | 27,61 | 1,10 |
|           | 16:15 | 114,362 | 114,385 | 22,64 | 0,90 |
|           | 16:30 | 117,343 | 117,367 | 23,99 | 0,96 |
|           | 16:45 | 124,143 | 124,171 | 27,72 | 1,11 |
|           | 17:00 | 121,162 | 121,190 | 28,00 | 1,12 |
|           | 17:15 | 117,743 | 117,764 | 20,61 | 0,82 |
|           | 17:30 | 120,543 | 120,561 | 17,23 | 0,69 |
|           | 17:45 | 125,743 | 125,758 | 14,24 | 0,57 |
|           | 18:00 | 120,143 | 120,171 | 28,08 | 1,12 |
|           | 18:15 | 124,143 | 124,162 | 18,11 | 0,72 |
|           | 18:30 | 130,943 | 130,960 | 16,52 | 0,66 |
|           | 18:45 | 130,943 | 130,967 | 23,49 | 0,94 |
|           | 19:00 | 123,743 | 123,761 | 17,39 | 0,70 |
|           | 19:15 | 118,543 | 118,557 | 13,31 | 0,53 |
|           | 19:30 | 120,543 | 120,567 | 23,79 | 0,95 |
|           | 19:45 | 115,743 | 115,769 | 25,49 | 1,02 |
|           | 20:00 | 108,181 | 108,203 | 22,04 | 0,88 |
|           | 20:15 | 77,781  | 77,794  | 12,53 | 0,50 |
|           | 20:30 | 69,962  | 69,971  | 8,26  | 0,33 |
|           | 20:45 | 72,981  | 73,009  | 27,84 | 1,11 |
|           | 21:00 | 65,600  | 65,621  | 21,35 | 0,85 |
|           | 21:15 | 64,581  | 64,606  | 24,41 | 0,98 |
|           | 21:30 | 67,781  | 67,809  | 27,83 | 1,11 |
|           | 21:45 | 70,981  | 71,004  | 22,78 | 0,91 |
|           | 22:00 | 63,600  | 63,606  | 6,14  | 0,25 |
|           | 22:15 | 55,781  | 55,793  | 11,95 | 0,48 |
|           | 22:30 | 57,781  | 57,789  | 8,11  | 0,32 |
|           | 22:45 | 59,781  | 59,806  | 25,14 | 1,00 |
|           | 23:00 | 53,600  | 53,611  | 11,21 | 0,45 |
|           | 23:15 | 44,981  | 45,003  | 21,55 | 0,86 |
|           | 23:30 | 43,200  | 43,209  | 9,02  | 0,36 |
|           | 23:45 | 48,800  | 48,822  | 21,56 | 0,86 |
|           | 0:00  | 46,581  | 46,591  | 9,47  | 0,38 |
| 2.7.2015. | 0:15  | 60,800  | 60,818  | 18,36 | 0,72 |
|           | 0:30  | 54,762  | 54,787  | 25,18 | 0,99 |
|           | 0:45  | 55,419  | 55,434  | 15,24 | 0,60 |
|           | 1:00  | 50,362  | 50,375  | 12,24 | 0,48 |
|           | 1:15  | 62,000  | 62,028  | 28,32 | 1,11 |
|           | 1:30  | 62,000  | 62,028  | 27,76 | 1,09 |
|           | 1:45  | 62,981  | 62,994  | 13,02 | 0,51 |
|           | 2:00  | 55,381  | 55,396  | 14,72 | 0,58 |
|           | 2:15  | 56,581  | 56,592  | 11,19 | 0,44 |
|           | 2:30  | 51,600  | 51,622  | 22,13 | 0,87 |
|           | 2:45  | 58,400  | 58,414  | 13,80 | 0,54 |
|           | 3:00  | 58,181  | 58,196  | 14,58 | 0,57 |
|           | 3:15  | 66,181  | 66,199  | 18,31 | 0,72 |
|           | 3:30  | 64,000  | 64,027  | 27,17 | 1,07 |
|           | 3:45  | 62,981  | 63,004  | 22,40 | 0,88 |
|           | 4:00  | 59,781  | 59,794  | 13,06 | 0,51 |
|           | 4:15  | 64,181  | 64,204  | 23,12 | 0,91 |
|           | 4:30  | 65,381  | 65,403  | 21,86 | 0,86 |
|           | 4:45  | 70,981  | 70,998  | 16,98 | 0,67 |
|           | 5:00  | 72,981  | 72,994  | 13,23 | 0,52 |
|           | 5:15  | 67,200  | 67,230  | 29,58 | 1,16 |
|           | 5:30  | 74,181  | 74,197  | 15,63 | 0,61 |
|           | 5:45  | 72,581  | 72,600  | 18,77 | 0,74 |
|           | 6:00  | 66,762  | 66,789  | 26,98 | 1,06 |
|           | 6:15  | 88,181  | 88,197  | 15,59 | 0,61 |
|           | 6:30  | 84,400  | 84,411  | 10,98 | 0,43 |
|           | 6:45  | 81,162  | 81,186  | 23,69 | 0,93 |

|       |         |         |       |      |
|-------|---------|---------|-------|------|
| 7:00  | 78,762  | 78,773  | 11,10 | 0,44 |
| 7:15  | 79,200  | 79,220  | 20,25 | 0,80 |
| 7:30  | 83,162  | 83,185  | 22,60 | 0,89 |
| 7:45  | 82,181  | 82,207  | 26,23 | 1,03 |
| 8:00  | 80,981  | 81,003  | 22,21 | 0,87 |
| 8:15  | 101,343 | 101,375 | 31,60 | 1,24 |
| 8:30  | 98,581  | 98,610  | 28,68 | 1,13 |
| 8:45  | 98,362  | 98,382  | 19,49 | 0,77 |
| 9:00  | 96,362  | 96,383  | 20,75 | 0,82 |
| 9:15  | 96,981  | 97,007  | 25,50 | 1,00 |
| 9:30  | 96,762  | 96,782  | 19,90 | 0,78 |
| 9:45  | 94,362  | 94,390  | 27,30 | 1,07 |
| 10:00 | 95,962  | 95,991  | 28,55 | 1,12 |
| 10:15 | 97,562  | 97,574  | 12,13 | 0,48 |
| 10:30 | 97,962  | 97,983  | 20,67 | 0,81 |
| 10:45 | 98,762  | 98,783  | 21,22 | 0,83 |
| 11:00 | 107,562 | 107,585 | 22,94 | 0,90 |
| 11:15 | 111,743 | 111,762 | 18,71 | 0,74 |
| 11:30 | 107,962 | 107,982 | 20,22 | 0,80 |
| 11:45 | 108,362 | 108,389 | 27,17 | 1,07 |
| 12:00 | 108,762 | 108,781 | 18,29 | 0,72 |
| 12:15 | 103,343 | 103,376 | 32,20 | 1,27 |
| 12:30 | 100,362 | 100,387 | 24,48 | 0,96 |
| 12:45 | 99,381  | 99,399  | 17,89 | 0,70 |
| 13:00 | 97,562  | 97,592  | 30,01 | 1,18 |
| 13:15 | 109,743 | 109,757 | 13,31 | 0,52 |
| 13:30 | 102,543 | 102,559 | 16,09 | 0,63 |
| 13:45 | 107,381 | 107,399 | 17,73 | 0,70 |
| 14:00 | 103,162 | 103,190 | 27,43 | 1,08 |
| 14:15 | 109,743 | 109,763 | 19,33 | 0,76 |
| 14:30 | 110,543 | 110,560 | 16,42 | 0,65 |
| 14:45 | 112,362 | 112,385 | 23,01 | 0,90 |
| 15:00 | 111,343 | 111,361 | 17,95 | 0,71 |
| 15:15 | 130,362 | 130,371 | 8,64  | 0,34 |
| 15:30 | 112,325 | 112,342 | 17,38 | 0,68 |
| 15:45 | 121,962 | 121,973 | 10,82 | 0,43 |
| 16:00 | 167,087 | 167,100 | 13,44 | 0,53 |
| 16:15 | 176,687 | 176,702 | 15,63 | 0,61 |
| 16:30 | 172,287 | 172,301 | 14,49 | 0,57 |
| 16:45 | 162,906 | 162,935 | 29,76 | 1,17 |
| 17:00 | 163,487 | 163,510 | 23,26 | 0,91 |
| 17:15 | 153,306 | 153,331 | 25,02 | 0,98 |
| 17:30 | 168,906 | 168,915 | 9,65  | 0,38 |
| 17:45 | 167,487 | 167,502 | 15,03 | 0,59 |
| 18:00 | 163,887 | 163,897 | 9,90  | 0,39 |
| 18:15 | 162,725 | 162,750 | 25,61 | 1,01 |
| 18:30 | 168,687 | 168,714 | 27,15 | 1,07 |
| 18:45 | 141,125 | 141,152 | 27,41 | 1,08 |
| 19:00 | 115,562 | 115,571 | 8,44  | 0,33 |
| 19:15 | 117,743 | 117,767 | 23,71 | 0,93 |
| 19:30 | 116,943 | 116,955 | 11,72 | 0,46 |
| 19:45 | 115,162 | 115,182 | 19,58 | 0,77 |
| 20:00 | 113,162 | 113,178 | 15,26 | 0,60 |
| 20:15 | 106,943 | 106,956 | 12,28 | 0,48 |
| 20:30 | 88,362  | 88,371  | 8,71  | 0,34 |
| 20:45 | 97,781  | 97,811  | 29,38 | 1,16 |
| 21:00 | 84,362  | 84,386  | 23,66 | 0,93 |
| 21:15 | 86,581  | 86,598  | 17,17 | 0,68 |
| 21:30 | 81,381  | 81,394  | 13,30 | 0,52 |
| 21:45 | 86,181  | 86,196  | 14,55 | 0,57 |
| 22:00 | 85,962  | 85,989  | 27,01 | 1,06 |
| 22:15 | 70,400  | 70,415  | 15,26 | 0,60 |
| 22:30 | 79,562  | 79,579  | 16,45 | 0,65 |

|           |         |         |         |       |      |
|-----------|---------|---------|---------|-------|------|
|           | 22:45   | 81,381  | 81,404  | 23,22 | 0,91 |
|           | 23:00   | 80,181  | 80,193  | 11,96 | 0,47 |
|           | 23:15   | 69,781  | 69,796  | 14,43 | 0,57 |
|           | 23:30   | 66,981  | 66,993  | 11,56 | 0,45 |
|           | 23:45   | 72,181  | 72,210  | 28,77 | 1,13 |
|           | 0:00    | 68,981  | 68,991  | 9,74  | 0,38 |
| 3.7.2015. | 0:15    | 65,381  | 65,406  | 24,56 | 1,14 |
|           | 0:30    | 60,000  | 60,023  | 23,22 | 1,08 |
|           | 0:45    | 63,781  | 63,807  | 26,24 | 1,22 |
|           | 1:00    | 59,381  | 59,404  | 22,58 | 1,05 |
|           | 1:15    | 70,181  | 70,202  | 20,97 | 0,97 |
|           | 1:30    | 66,981  | 67,008  | 26,62 | 1,23 |
|           | 1:45    | 65,600  | 65,617  | 16,53 | 0,77 |
|           | 2:00    | 58,362  | 58,392  | 29,98 | 1,39 |
|           | 2:15    | 64,000  | 64,024  | 23,51 | 1,09 |
|           | 2:30    | 62,581  | 62,601  | 20,06 | 0,93 |
|           | 2:45    | 63,600  | 63,620  | 20,27 | 0,94 |
|           | 3:00    | 65,381  | 65,406  | 25,36 | 1,17 |
|           | 3:15    | 75,781  | 75,795  | 13,87 | 0,64 |
|           | 3:30    | 68,581  | 68,604  | 22,96 | 1,06 |
|           | 3:45    | 67,781  | 67,805  | 24,25 | 1,12 |
|           | 4:00    | 68,800  | 68,822  | 21,60 | 1,00 |
|           | 4:15    | 79,162  | 79,191  | 28,31 | 1,31 |
|           | 4:30    | 80,181  | 80,194  | 12,73 | 0,59 |
|           | 4:45    | 82,181  | 82,192  | 10,58 | 0,49 |
|           | 5:00    | 88,362  | 88,380  | 17,71 | 0,82 |
|           | 5:15    | 80,981  | 81,010  | 29,04 | 1,35 |
|           | 5:30    | 77,962  | 77,982  | 20,05 | 0,93 |
|           | 5:45    | 79,200  | 79,226  | 25,83 | 1,20 |
|           | 6:00    | 85,781  | 85,810  | 28,82 | 1,34 |
|           | 6:15    | 82,362  | 82,387  | 25,04 | 1,16 |
|           | 6:30    | 89,562  | 89,582  | 20,05 | 0,93 |
|           | 6:45    | 94,181  | 94,210  | 29,35 | 1,36 |
|           | 7:00    | 116,943 | 116,953 | 9,92  | 0,46 |
|           | 7:15    | 132,943 | 132,973 | 29,87 | 1,38 |
|           | 7:30    | 137,743 | 137,760 | 16,19 | 0,75 |
|           | 7:45    | 131,343 | 131,358 | 14,31 | 0,66 |
|           | 8:00    | 126,725 | 126,751 | 26,20 | 1,21 |
|           | 8:15    | 130,943 | 130,971 | 27,55 | 1,28 |
|           | 8:30    | 136,143 | 136,156 | 12,41 | 0,58 |
|           | 8:45    | 142,106 | 142,121 | 15,58 | 0,72 |
|           | 9:00    | 142,325 | 142,356 | 31,61 | 1,46 |
|           | 9:15    | 131,743 | 131,760 | 16,63 | 0,77 |
|           | 9:30    | 131,343 | 131,368 | 24,90 | 1,15 |
|           | 9:45    | 126,943 | 126,957 | 14,02 | 0,65 |
|           | 10:00   | 124,943 | 124,955 | 11,94 | 0,55 |
| 10:15     | 139,706 | 139,736 | 30,63   | 1,42  |      |
| 10:30     | 133,962 | 133,990 | 27,98   | 1,30  |      |
| 10:45     | 132,325 | 132,339 | 14,10   | 0,65  |      |
| 11:00     | 138,325 | 138,346 | 21,61   | 1,00  |      |
| 11:15     | 141,925 | 141,957 | 32,27   | 1,50  |      |
| 11:30     | 144,725 | 144,744 | 19,62   | 0,91  |      |
| 11:45     | 145,343 | 145,370 | 26,26   | 1,22  |      |
| 12:00     | 146,506 | 146,521 | 14,98   | 0,69  |      |
| 12:15     | 137,925 | 137,952 | 27,72   | 1,28  |      |
| 12:30     | 140,725 | 140,742 | 17,57   | 0,81  |      |
| 12:45     | 150,725 | 150,745 | 20,06   | 0,93  |      |
| 13:00     | 141,306 | 141,330 | 23,86   | 1,11  |      |
| 13:15     | 156,906 | 156,932 | 26,71   | 1,24  |      |
| 13:30     | 151,925 | 151,943 | 18,01   | 0,83  |      |
| 13:45     | 155,706 | 155,713 | 7,28    | 0,34  |      |
| 14:00     | 153,306 | 153,331 | 25,38   | 1,18  |      |
| 14:15     | 143,743 | 143,774 | 30,92   | 1,43  |      |

|           |       |         |         |       |      |
|-----------|-------|---------|---------|-------|------|
|           | 14:30 | 141,125 | 141,142 | 17,75 | 0,82 |
|           | 14:45 | 135,125 | 135,150 | 25,68 | 1,19 |
|           | 15:00 | 142,725 | 142,733 | 8,67  | 0,40 |
|           | 15:15 | 135,343 | 135,363 | 19,46 | 0,90 |
|           | 15:30 | 137,525 | 137,534 | 9,70  | 0,45 |
|           | 15:45 | 135,125 | 135,144 | 19,39 | 0,90 |
|           | 16:00 | 134,943 | 134,962 | 19,01 | 0,88 |
|           | 16:15 | 121,743 | 121,767 | 23,35 | 1,08 |
|           | 16:30 | 127,743 | 127,752 | 8,23  | 0,38 |
|           | 16:45 | 126,543 | 126,565 | 21,33 | 0,99 |
|           | 17:00 | 127,925 | 127,950 | 25,26 | 1,17 |
|           | 17:15 | 128,543 | 128,568 | 24,31 | 1,13 |
|           | 17:30 | 126,943 | 126,953 | 9,26  | 0,43 |
|           | 17:45 | 124,943 | 124,959 | 15,26 | 0,71 |
|           | 18:00 | 129,343 | 129,373 | 29,64 | 1,37 |
|           | 18:15 | 135,343 | 135,349 | 5,36  | 0,25 |
|           | 18:30 | 144,906 | 144,930 | 24,73 | 1,15 |
|           | 18:45 | 147,925 | 147,933 | 8,66  | 0,40 |
|           | 19:00 | 152,325 | 152,347 | 22,48 | 1,04 |
|           | 19:15 | 149,306 | 149,335 | 29,62 | 1,37 |
|           | 19:30 | 114,943 | 114,960 | 16,21 | 0,75 |
|           | 19:45 | 114,362 | 114,388 | 25,63 | 1,19 |
|           | 20:00 | 112,543 | 112,571 | 27,24 | 1,26 |
|           | 20:15 | 107,962 | 107,982 | 19,41 | 0,90 |
|           | 20:30 | 101,562 | 101,590 | 27,62 | 1,28 |
|           | 20:45 | 102,981 | 103,007 | 26,22 | 1,21 |
|           | 21:00 | 102,543 | 102,572 | 28,27 | 1,31 |
|           | 21:15 | 95,962  | 95,983  | 20,97 | 0,97 |
|           | 21:30 | 100,981 | 100,990 | 8,69  | 0,40 |
|           | 21:45 | 104,543 | 104,561 | 18,00 | 0,83 |
|           | 22:00 | 106,762 | 106,774 | 11,90 | 0,55 |
|           | 22:15 | 90,581  | 90,610  | 28,84 | 1,34 |
|           | 22:30 | 89,162  | 89,188  | 26,18 | 1,21 |
|           | 22:45 | 96,362  | 96,384  | 21,59 | 1,00 |
|           | 23:00 | 93,381  | 93,394  | 13,06 | 0,60 |
|           | 23:15 | 73,962  | 73,967  | 5,20  | 0,24 |
|           | 23:30 | 65,600  | 65,616  | 15,55 | 0,72 |
|           | 23:45 | 70,181  | 70,206  | 24,68 | 1,14 |
|           | 0:00  | 69,381  | 69,397  | 15,73 | 0,73 |
| 4.7.2015. | 0:15  | 68,400  | 68,410  | 10,14 | 0,40 |
|           | 0:30  | 73,962  | 73,972  | 9,71  | 0,38 |
|           | 0:45  | 60,000  | 60,022  | 22,22 | 0,87 |
|           | 1:00  | 58,581  | 58,605  | 23,50 | 0,92 |
|           | 1:15  | 55,781  | 55,784  | 3,05  | 0,12 |
|           | 1:30  | 62,581  | 62,609  | 27,85 | 1,09 |
|           | 1:45  | 70,581  | 70,600  | 18,82 | 0,74 |
|           | 2:00  | 68,181  | 68,205  | 24,19 | 0,95 |
|           | 2:15  | 64,981  | 64,996  | 14,47 | 0,57 |
|           | 2:30  | 57,200  | 57,215  | 14,83 | 0,58 |
|           | 2:45  | 60,400  | 60,404  | 3,97  | 0,16 |
|           | 3:00  | 64,762  | 64,781  | 18,36 | 0,72 |
|           | 3:15  | 74,581  | 74,612  | 31,28 | 1,23 |
|           | 3:30  | 67,381  | 67,401  | 20,18 | 0,79 |
|           | 3:45  | 68,181  | 68,188  | 6,83  | 0,27 |
|           | 4:00  | 66,800  | 66,826  | 26,43 | 1,04 |
|           | 4:15  | 74,581  | 74,607  | 25,97 | 1,02 |
|           | 4:30  | 70,981  | 71,001  | 19,63 | 0,77 |
|           | 4:45  | 69,781  | 69,804  | 22,66 | 0,89 |
|           | 5:00  | 78,362  | 78,367  | 4,87  | 0,19 |
|           | 5:15  | 93,781  | 93,811  | 29,68 | 1,16 |
|           | 5:30  | 78,581  | 78,596  | 14,50 | 0,57 |
|           | 5:45  | 75,781  | 75,793  | 12,09 | 0,47 |
|           | 6:00  | 77,162  | 77,183  | 21,18 | 0,83 |

|       |         |         |       |      |
|-------|---------|---------|-------|------|
| 6:15  | 88,981  | 88,988  | 6,73  | 0,26 |
| 6:30  | 81,962  | 81,975  | 12,66 | 0,50 |
| 6:45  | 99,562  | 99,589  | 26,39 | 1,04 |
| 7:00  | 109,162 | 109,188 | 25,46 | 1,00 |
| 7:15  | 96,362  | 96,389  | 26,28 | 1,03 |
| 7:30  | 86,981  | 87,003  | 22,06 | 0,87 |
| 7:45  | 83,962  | 83,971  | 8,31  | 0,33 |
| 8:00  | 93,162  | 93,187  | 25,13 | 0,99 |
| 8:15  | 93,600  | 93,627  | 27,38 | 1,07 |
| 8:30  | 94,762  | 94,787  | 24,91 | 0,98 |
| 8:45  | 86,362  | 86,374  | 11,88 | 0,47 |
| 9:00  | 79,562  | 79,574  | 11,69 | 0,46 |
| 9:15  | 86,981  | 87,013  | 32,04 | 1,26 |
| 9:30  | 88,762  | 88,790  | 27,88 | 1,09 |
| 9:45  | 83,781  | 83,806  | 25,09 | 0,98 |
| 10:00 | 85,562  | 85,580  | 17,62 | 0,69 |
| 10:15 | 86,181  | 86,213  | 32,04 | 1,26 |
| 10:30 | 86,362  | 86,378  | 16,11 | 0,63 |
| 10:45 | 84,581  | 84,605  | 24,08 | 0,94 |
| 11:00 | 82,581  | 82,607  | 26,35 | 1,03 |
| 11:15 | 87,162  | 87,178  | 15,25 | 0,60 |
| 11:30 | 83,781  | 83,801  | 19,85 | 0,78 |
| 11:45 | 89,162  | 89,182  | 20,00 | 0,78 |
| 12:00 | 86,581  | 86,590  | 8,57  | 0,34 |
| 12:15 | 77,962  | 77,984  | 22,22 | 0,87 |
| 12:30 | 74,000  | 74,027  | 26,70 | 1,05 |
| 12:45 | 70,181  | 70,208  | 26,80 | 1,05 |
| 13:00 | 71,781  | 71,804  | 22,43 | 0,88 |
| 13:15 | 78,362  | 78,376  | 13,42 | 0,53 |
| 13:30 | 80,981  | 80,996  | 14,56 | 0,57 |
| 13:45 | 85,381  | 85,403  | 22,04 | 0,86 |
| 14:00 | 83,562  | 83,587  | 25,03 | 0,98 |
| 14:15 | 80,181  | 80,204  | 22,95 | 0,90 |
| 14:30 | 71,381  | 71,398  | 16,83 | 0,66 |
| 14:45 | 74,581  | 74,592  | 11,15 | 0,44 |
| 15:00 | 75,562  | 75,576  | 13,25 | 0,52 |
| 15:15 | 73,200  | 73,219  | 18,51 | 0,73 |
| 15:30 | 77,162  | 77,185  | 22,33 | 0,88 |
| 15:45 | 77,381  | 77,412  | 30,86 | 1,21 |
| 16:00 | 75,781  | 75,794  | 13,31 | 0,52 |
| 16:15 | 75,600  | 75,632  | 31,92 | 1,25 |
| 16:30 | 74,581  | 74,595  | 14,20 | 0,56 |
| 16:45 | 75,962  | 75,988  | 26,03 | 1,02 |
| 17:00 | 74,981  | 75,000  | 18,58 | 0,73 |
| 17:15 | 66,981  | 66,992  | 10,92 | 0,43 |
| 17:30 | 72,981  | 73,010  | 28,77 | 1,13 |
| 17:45 | 73,781  | 73,806  | 24,86 | 0,98 |
| 18:00 | 75,962  | 75,975  | 12,41 | 0,49 |
| 18:15 | 72,000  | 72,010  | 9,86  | 0,39 |
| 18:30 | 76,981  | 76,988  | 6,84  | 0,27 |
| 18:45 | 81,962  | 81,977  | 15,03 | 0,59 |
| 19:00 | 80,181  | 80,191  | 9,55  | 0,37 |
| 19:15 | 74,981  | 75,008  | 27,34 | 1,07 |
| 19:30 | 81,781  | 81,801  | 19,91 | 0,78 |
| 19:45 | 57,781  | 57,811  | 29,80 | 1,17 |
| 20:00 | 57,600  | 57,620  | 20,35 | 0,80 |
| 20:15 | 58,400  | 58,409  | 9,32  | 0,37 |
| 20:30 | 54,181  | 54,192  | 10,38 | 0,41 |
| 20:45 | 57,381  | 57,391  | 9,74  | 0,38 |
| 21:00 | 52,181  | 52,206  | 25,13 | 0,99 |
| 21:15 | 54,800  | 54,820  | 20,17 | 0,79 |
| 21:30 | 66,981  | 67,004  | 23,23 | 0,91 |
| 21:45 | 63,781  | 63,806  | 25,02 | 0,98 |

|           |        |        |        |       |      |
|-----------|--------|--------|--------|-------|------|
|           | 22:00  | 61,600 | 61,611 | 11,34 | 0,44 |
|           | 22:15  | 56,181 | 56,197 | 16,11 | 0,63 |
|           | 22:30  | 63,381 | 63,407 | 25,64 | 1,01 |
|           | 22:45  | 66,400 | 66,407 | 6,61  | 0,26 |
|           | 23:00  | 66,362 | 66,380 | 17,47 | 0,69 |
|           | 23:15  | 55,600 | 55,611 | 11,07 | 0,43 |
|           | 23:30  | 54,400 | 54,426 | 26,25 | 1,03 |
|           | 23:45  | 56,981 | 57,007 | 25,91 | 1,02 |
|           | 0:00   | 55,381 | 55,398 | 17,05 | 0,67 |
| 5.7.2015. | 0:15   | 54,181 | 54,195 | 14,13 | 0,51 |
|           | 0:30   | 53,419 | 53,430 | 11,05 | 0,40 |
|           | 0:45   | 56,362 | 56,370 | 8,12  | 0,29 |
|           | 1:00   | 52,800 | 52,823 | 22,87 | 0,83 |
|           | 1:15   | 55,381 | 55,413 | 31,41 | 1,14 |
|           | 1:30   | 44,800 | 44,806 | 6,17  | 0,22 |
|           | 1:45   | 46,181 | 46,202 | 20,46 | 0,74 |
|           | 2:00   | 45,200 | 45,207 | 6,60  | 0,24 |
|           | 2:15   | 50,581 | 50,600 | 18,53 | 0,67 |
|           | 2:30   | 50,400 | 50,420 | 20,03 | 0,72 |
|           | 2:45   | 50,400 | 50,420 | 19,77 | 0,71 |
|           | 3:00   | 50,981 | 50,991 | 9,37  | 0,34 |
|           | 3:15   | 50,000 | 50,014 | 13,57 | 0,49 |
|           | 3:30   | 44,400 | 44,416 | 15,66 | 0,57 |
|           | 3:45   | 45,162 | 45,181 | 18,85 | 0,68 |
|           | 4:00   | 46,400 | 46,419 | 19,48 | 0,70 |
|           | 4:15   | 53,781 | 53,802 | 20,82 | 0,75 |
|           | 4:30   | 53,200 | 53,209 | 9,43  | 0,34 |
|           | 4:45   | 60,400 | 60,418 | 17,69 | 0,64 |
|           | 5:00   | 54,581 | 54,604 | 23,30 | 0,84 |
|           | 5:15   | 58,981 | 59,000 | 18,71 | 0,68 |
|           | 5:30   | 53,781 | 53,797 | 16,14 | 0,58 |
|           | 5:45   | 52,800 | 52,828 | 28,17 | 1,02 |
|           | 6:00   | 56,181 | 56,199 | 17,88 | 0,65 |
|           | 6:15   | 58,000 | 58,022 | 22,24 | 0,80 |
|           | 6:30   | 58,581 | 58,598 | 16,51 | 0,60 |
|           | 6:45   | 58,581 | 58,596 | 14,61 | 0,53 |
|           | 7:00   | 70,800 | 70,817 | 17,39 | 0,63 |
|           | 7:15   | 67,381 | 67,409 | 27,62 | 1,00 |
|           | 7:30   | 66,181 | 66,206 | 24,59 | 0,89 |
|           | 7:45   | 58,000 | 58,022 | 21,88 | 0,79 |
|           | 8:00   | 56,181 | 56,201 | 19,57 | 0,71 |
|           | 8:15   | 53,200 | 53,217 | 16,61 | 0,60 |
|           | 8:30   | 47,781 | 47,800 | 19,30 | 0,70 |
|           | 8:45   | 49,781 | 49,804 | 23,24 | 0,84 |
|           | 9:00   | 47,600 | 47,615 | 15,36 | 0,55 |
|           | 9:15   | 53,600 | 53,628 | 28,28 | 1,02 |
|           | 9:30   | 57,781 | 57,790 | 8,80  | 0,32 |
|           | 9:45   | 54,800 | 54,822 | 22,13 | 0,80 |
|           | 10:00  | 54,181 | 54,193 | 11,96 | 0,43 |
| 10:15     | 60,981 | 61,002 | 20,39  | 0,74  |      |
| 10:30     | 55,600 | 55,627 | 27,47  | 0,99  |      |
| 10:45     | 56,581 | 56,602 | 21,27  | 0,77  |      |
| 11:00     | 58,181 | 58,195 | 13,66  | 0,49  |      |
| 11:15     | 61,600 | 61,628 | 28,21  | 1,02  |      |
| 11:30     | 64,581 | 64,600 | 19,35  | 0,70  |      |
| 11:45     | 58,362 | 58,371 | 9,19   | 0,33  |      |
| 12:00     | 59,600 | 59,622 | 22,32  | 0,81  |      |
| 12:15     | 63,381 | 63,405 | 23,96  | 0,87  |      |
| 12:30     | 63,600 | 63,626 | 25,97  | 0,94  |      |
| 12:45     | 62,181 | 62,191 | 9,90   | 0,36  |      |
| 13:00     | 62,181 | 62,200 | 18,52  | 0,67  |      |
| 13:15     | 59,600 | 59,611 | 10,61  | 0,38  |      |
| 13:30     | 60,181 | 60,193 | 11,50  | 0,42  |      |

|           |        |        |        |       |      |
|-----------|--------|--------|--------|-------|------|
|           | 13:45  | 66,981 | 66,988 | 7,07  | 0,26 |
|           | 14:00  | 63,200 | 63,210 | 10,27 | 0,37 |
|           | 14:15  | 73,562 | 73,583 | 20,42 | 0,74 |
|           | 14:30  | 70,400 | 70,424 | 24,12 | 0,87 |
|           | 14:45  | 63,562 | 63,584 | 21,43 | 0,77 |
|           | 15:00  | 65,600 | 65,614 | 13,93 | 0,50 |
|           | 15:15  | 59,781 | 59,797 | 15,94 | 0,58 |
|           | 15:30  | 53,381 | 53,401 | 19,87 | 0,72 |
|           | 15:45  | 52,800 | 52,806 | 5,67  | 0,21 |
|           | 16:00  | 53,781 | 53,804 | 23,34 | 0,84 |
|           | 16:15  | 57,381 | 57,392 | 10,99 | 0,40 |
|           | 16:30  | 52,400 | 52,418 | 18,27 | 0,66 |
|           | 16:45  | 53,600 | 53,626 | 26,37 | 0,95 |
|           | 17:00  | 51,781 | 51,806 | 24,84 | 0,90 |
|           | 17:15  | 41,600 | 41,612 | 11,81 | 0,43 |
|           | 17:30  | 42,400 | 42,423 | 23,40 | 0,85 |
|           | 17:45  | 42,981 | 42,993 | 11,90 | 0,43 |
|           | 18:00  | 47,600 | 47,613 | 13,37 | 0,48 |
|           | 18:15  | 49,200 | 49,218 | 18,21 | 0,66 |
|           | 18:30  | 48,362 | 48,370 | 8,14  | 0,29 |
|           | 18:45  | 47,200 | 47,211 | 11,22 | 0,41 |
|           | 19:00  | 53,781 | 53,790 | 8,58  | 0,31 |
|           | 19:15  | 53,200 | 53,222 | 22,29 | 0,81 |
|           | 19:30  | 61,200 | 61,227 | 27,16 | 0,98 |
|           | 19:45  | 61,781 | 61,793 | 11,41 | 0,41 |
|           | 20:00  | 58,181 | 58,206 | 24,65 | 0,89 |
|           | 20:15  | 38,800 | 38,822 | 22,41 | 0,81 |
|           | 20:30  | 42,400 | 42,420 | 19,84 | 0,72 |
|           | 20:45  | 43,381 | 43,398 | 17,25 | 0,62 |
|           | 21:00  | 36,400 | 36,408 | 8,34  | 0,30 |
|           | 21:15  | 39,600 | 39,610 | 10,22 | 0,37 |
|           | 21:30  | 50,000 | 50,024 | 24,12 | 0,87 |
|           | 21:45  | 50,981 | 50,998 | 16,42 | 0,59 |
|           | 22:00  | 48,400 | 48,407 | 7,33  | 0,26 |
|           | 22:15  | 40,400 | 40,423 | 22,68 | 0,82 |
|           | 22:30  | 44,981 | 44,994 | 12,76 | 0,46 |
|           | 22:45  | 50,981 | 50,990 | 9,27  | 0,33 |
|           | 23:00  | 50,400 | 50,417 | 17,45 | 0,63 |
|           | 23:15  | 56,800 | 56,821 | 21,21 | 0,77 |
|           | 23:30  | 53,781 | 53,790 | 8,96  | 0,32 |
|           | 23:45  | 52,581 | 52,604 | 22,55 | 0,81 |
|           | 0:00   | 52,000 | 52,008 | 8,48  | 0,31 |
| 6.7.2015. | 0:15   | 52,981 | 53,004 | 23,25 | 1,17 |
|           | 0:30   | 49,200 | 49,214 | 14,46 | 0,73 |
|           | 0:45   | 44,181 | 44,190 | 9,32  | 0,47 |
|           | 1:00   | 46,619 | 46,644 | 24,65 | 1,24 |
|           | 1:15   | 54,981 | 55,004 | 23,15 | 1,16 |
|           | 1:30   | 52,181 | 52,199 | 17,85 | 0,90 |
|           | 1:45   | 60,400 | 60,430 | 30,27 | 1,52 |
|           | 2:00   | 53,381 | 53,406 | 24,41 | 1,23 |
|           | 2:15   | 54,581 | 54,605 | 23,65 | 1,19 |
|           | 2:30   | 47,600 | 47,616 | 15,72 | 0,79 |
|           | 2:45   | 50,400 | 50,421 | 21,28 | 1,07 |
|           | 3:00   | 49,381 | 49,394 | 12,81 | 0,64 |
|           | 3:15   | 57,200 | 57,213 | 13,19 | 0,66 |
|           | 3:30   | 52,581 | 52,598 | 16,50 | 0,83 |
|           | 3:45   | 53,781 | 53,804 | 22,71 | 1,14 |
|           | 4:00   | 53,781 | 53,790 | 8,65  | 0,43 |
|           | 4:15   | 56,400 | 56,418 | 17,94 | 0,90 |
|           | 4:30   | 54,000 | 54,014 | 14,21 | 0,71 |
| 4:45      | 54,981 | 55,004 | 22,86  | 1,15  |      |
| 5:00      | 58,581 | 58,608 | 26,72  | 1,34  |      |
| 5:15      | 60,000 | 60,023 | 22,54  | 1,13  |      |



|       |         |         |       |      |
|-------|---------|---------|-------|------|
| 5:30  | 56,581  | 56,598  | 17,12 | 0,86 |
| 5:45  | 49,781  | 49,800  | 18,50 | 0,93 |
| 6:00  | 50,400  | 50,412  | 12,21 | 0,61 |
| 6:15  | 65,381  | 65,402  | 20,49 | 1,03 |
| 6:30  | 64,981  | 65,007  | 25,52 | 1,28 |
| 6:45  | 70,000  | 70,025  | 25,37 | 1,27 |
| 7:00  | 81,781  | 81,807  | 25,37 | 1,27 |
| 7:15  | 95,562  | 95,579  | 16,92 | 0,85 |
| 7:30  | 96,943  | 96,970  | 26,72 | 1,34 |
| 7:45  | 100,581 | 100,596 | 14,76 | 0,74 |
| 8:00  | 97,562  | 97,590  | 28,21 | 1,42 |
| 8:15  | 100,762 | 100,788 | 25,98 | 1,30 |
| 8:30  | 100,762 | 100,778 | 15,63 | 0,78 |
| 8:45  | 91,562  | 91,579  | 16,24 | 0,82 |
| 9:00  | 100,762 | 100,771 | 9,16  | 0,46 |
| 9:15  | 109,562 | 109,579 | 16,53 | 0,83 |
| 9:30  | 107,162 | 107,177 | 14,80 | 0,74 |
| 9:45  | 103,562 | 103,585 | 22,82 | 1,15 |
| 10:00 | 105,562 | 105,581 | 18,59 | 0,93 |
| 10:15 | 107,343 | 107,358 | 14,67 | 0,74 |
| 10:30 | 105,962 | 105,989 | 26,33 | 1,32 |
| 10:45 | 102,762 | 102,789 | 26,74 | 1,34 |
| 11:00 | 107,743 | 107,772 | 28,94 | 1,45 |
| 11:15 | 107,962 | 107,995 | 32,50 | 1,63 |
| 11:30 | 108,943 | 108,953 | 10,05 | 0,50 |
| 11:45 | 111,962 | 111,977 | 15,22 | 0,76 |
| 12:00 | 112,143 | 112,168 | 24,79 | 1,25 |
| 12:15 | 113,162 | 113,174 | 11,89 | 0,60 |
| 12:30 | 113,343 | 113,358 | 14,15 | 0,71 |
| 12:45 | 114,143 | 114,147 | 3,35  | 0,17 |
| 13:00 | 114,362 | 114,390 | 28,15 | 1,41 |
| 13:15 | 124,943 | 124,958 | 15,02 | 0,75 |
| 13:30 | 123,125 | 123,158 | 33,65 | 1,69 |
| 13:45 | 126,143 | 126,156 | 12,85 | 0,65 |
| 14:00 | 127,125 | 127,134 | 9,03  | 0,45 |
| 14:15 | 103,162 | 103,191 | 28,86 | 1,45 |
| 14:30 | 98,362  | 98,386  | 23,87 | 1,20 |
| 14:45 | 95,962  | 95,973  | 10,80 | 0,54 |
| 15:00 | 96,181  | 96,195  | 13,72 | 0,69 |
| 15:15 | 97,743  | 97,760  | 16,46 | 0,83 |
| 15:30 | 97,562  | 97,575  | 12,40 | 0,62 |
| 15:45 | 99,962  | 99,990  | 27,29 | 1,37 |
| 16:00 | 99,562  | 99,585  | 22,93 | 1,15 |
| 16:15 | 99,962  | 99,986  | 23,38 | 1,17 |
| 16:30 | 102,943 | 102,949 | 5,62  | 0,28 |
| 16:45 | 103,781 | 103,797 | 15,46 | 0,78 |
| 17:00 | 98,943  | 98,953  | 9,22  | 0,46 |
| 17:15 | 97,962  | 97,977  | 14,90 | 0,75 |
| 17:30 | 96,362  | 96,378  | 15,96 | 0,80 |
| 17:45 | 98,181  | 98,196  | 14,59 | 0,73 |
| 18:00 | 100,762 | 100,773 | 11,09 | 0,56 |
| 18:15 | 93,743  | 93,757  | 13,16 | 0,66 |
| 18:30 | 94,181  | 94,214  | 33,22 | 1,67 |
| 18:45 | 94,181  | 94,212  | 30,60 | 1,54 |
| 19:00 | 91,962  | 91,989  | 26,85 | 1,35 |
| 19:15 | 95,962  | 95,973  | 10,95 | 0,55 |
| 19:30 | 94,362  | 94,373  | 10,54 | 0,53 |
| 19:45 | 92,762  | 92,777  | 14,37 | 0,72 |
| 20:00 | 91,381  | 91,403  | 21,86 | 1,10 |
| 20:15 | 87,562  | 87,584  | 21,44 | 1,08 |
| 20:30 | 83,200  | 83,210  | 9,87  | 0,50 |
| 20:45 | 85,343  | 85,362  | 18,89 | 0,95 |
| 21:00 | 80,181  | 80,196  | 14,59 | 0,73 |

|           |         |         |        |       |      |
|-----------|---------|---------|--------|-------|------|
|           | 21:15   | 74,181  | 74,200 | 18,90 | 0,95 |
|           | 21:30   | 78,981  | 78,997 | 15,72 | 0,79 |
|           | 21:45   | 75,381  | 75,398 | 17,18 | 0,86 |
|           | 22:00   | 76,581  | 76,585 | 3,65  | 0,18 |
|           | 22:15   | 64,762  | 64,771 | 9,20  | 0,46 |
|           | 22:30   | 75,200  | 75,210 | 10,18 | 0,51 |
|           | 22:45   | 78,981  | 78,989 | 7,82  | 0,39 |
|           | 23:00   | 79,381  | 79,408 | 26,54 | 1,33 |
|           | 23:15   | 64,181  | 64,192 | 11,13 | 0,56 |
|           | 23:30   | 53,781  | 53,795 | 14,06 | 0,71 |
|           | 23:45   | 62,181  | 62,190 | 9,06  | 0,46 |
|           | 0:00    | 57,600  | 57,627 | 26,86 | 1,35 |
| 7.7.2015. | 0:15    | 51,381  | 51,392 | 11,24 | 0,77 |
|           | 0:30    | 52,400  | 52,410 | 10,04 | 0,69 |
|           | 0:45    | 50,581  | 50,597 | 16,29 | 1,12 |
|           | 1:00    | 50,800  | 50,812 | 11,98 | 0,82 |
|           | 1:15    | 59,781  | 59,808 | 27,10 | 1,86 |
|           | 1:30    | 54,581  | 54,594 | 13,22 | 0,91 |
|           | 1:45    | 45,600  | 45,619 | 19,39 | 1,33 |
|           | 2:00    | 48,981  | 48,986 | 4,83  | 0,33 |
|           | 2:15    | 55,600  | 55,628 | 28,07 | 1,93 |
|           | 2:30    | 48,581  | 48,584 | 3,00  | 0,21 |
|           | 2:45    | 51,600  | 51,612 | 12,24 | 0,84 |
|           | 3:00    | 46,000  | 46,010 | 9,76  | 0,67 |
|           | 3:15    | 49,381  | 49,402 | 21,15 | 1,45 |
|           | 3:30    | 51,381  | 51,396 | 14,71 | 1,01 |
|           | 3:45    | 56,581  | 56,596 | 14,70 | 1,01 |
|           | 4:00    | 56,400  | 56,411 | 10,94 | 0,75 |
|           | 4:15    | 52,581  | 52,595 | 13,87 | 0,95 |
|           | 4:30    | 55,600  | 55,617 | 17,12 | 1,18 |
|           | 4:45    | 55,781  | 55,801 | 19,82 | 1,36 |
|           | 5:00    | 56,181  | 56,190 | 8,66  | 0,59 |
|           | 5:15    | 45,600  | 45,625 | 24,63 | 1,69 |
|           | 5:30    | 50,581  | 50,592 | 10,95 | 0,75 |
|           | 5:45    | 43,200  | 43,203 | 2,60  | 0,18 |
|           | 6:00    | 47,600  | 47,624 | 23,75 | 1,63 |
|           | 6:15    | 67,381  | 67,408 | 26,87 | 1,85 |
|           | 6:30    | 60,581  | 60,590 | 9,33  | 0,64 |
|           | 6:45    | 64,981  | 65,005 | 23,61 | 1,62 |
|           | 7:00    | 62,181  | 62,191 | 10,10 | 0,69 |
|           | 7:15    | 82,181  | 82,194 | 12,73 | 0,87 |
|           | 7:30    | 90,362  | 90,383 | 20,47 | 1,41 |
|           | 7:45    | 88,581  | 88,602 | 20,51 | 1,41 |
|           | 8:00    | 89,962  | 89,982 | 20,17 | 1,39 |
|           | 8:15    | 95,162  | 95,169 | 6,52  | 0,45 |
|           | 8:30    | 96,581  | 96,587 | 5,97  | 0,41 |
|           | 8:45    | 97,743  | 97,765 | 21,97 | 1,51 |
|           | 9:00    | 98,981  | 98,993 | 11,63 | 0,80 |
|           | 9:15    | 97,962  | 97,980 | 17,48 | 1,20 |
|           | 9:30    | 98,762  | 98,779 | 16,49 | 1,13 |
|           | 9:45    | 93,562  | 93,586 | 23,43 | 1,61 |
|           | 10:00   | 95,562  | 95,579 | 16,61 | 1,14 |
| 10:15     | 102,362 | 102,369 | 6,76   | 0,46  |      |
| 10:30     | 105,162 | 105,170 | 8,11   | 0,56  |      |
| 10:45     | 106,543 | 106,565 | 21,84  | 1,50  |      |
| 11:00     | 105,781 | 105,802 | 20,94  | 1,44  |      |
| 11:15     | 108,543 | 108,571 | 28,06  | 1,93  |      |
| 11:30     | 103,562 | 103,578 | 15,28  | 1,05  |      |
| 11:45     | 104,943 | 104,951 | 7,85   | 0,54  |      |
| 12:00     | 106,362 | 106,377 | 15,05  | 1,03  |      |
| 12:15     | 108,943 | 108,947 | 3,88   | 0,27  |      |
| 12:30     | 105,962 | 105,987 | 24,34  | 1,67  |      |
| 12:45     | 108,362 | 108,375 | 12,95  | 0,89  |      |

|           |        |         |         |       |       |
|-----------|--------|---------|---------|-------|-------|
|           | 13:00  | 106,143 | 106,150 | 6,91  | 0,47  |
|           | 13:15  | 111,562 | 111,585 | 22,92 | 1,57  |
|           | 13:30  | 110,943 | 110,953 | 9,11  | 0,63  |
|           | 13:45  | 111,343 | 111,358 | 15,08 | 1,04  |
|           | 14:00  | 117,343 | 117,353 | 9,39  | 0,65  |
|           | 14:15  | 114,362 | 114,389 | 26,56 | 1,83  |
|           | 14:30  | 111,743 | 111,757 | 13,49 | 0,93  |
|           | 14:45  | 113,743 | 113,764 | 20,52 | 1,41  |
|           | 15:00  | 113,962 | 113,991 | 28,72 | 1,97  |
|           | 15:15  | 106,943 | 106,950 | 6,91  | 0,48  |
|           | 15:30  | 105,562 | 105,595 | 32,53 | 2,24  |
|           | 15:45  | 112,943 | 112,960 | 16,14 | 1,11  |
|           | 16:00  | 112,543 | 112,551 | 7,98  | 0,55  |
|           | 16:15  | 110,181 | 110,214 | 32,96 | 2,27  |
|           | 16:30  | 116,725 | 116,750 | 25,13 | 1,73  |
|           | 16:45  | 118,943 | 118,951 | 7,12  | 0,49  |
|           | 17:00  | 121,743 | 121,765 | 21,81 | 1,50  |
|           | 17:15  | 116,762 | 116,788 | 26,21 | 1,80  |
|           | 17:30  | 119,925 | 119,952 | 27,40 | 1,88  |
|           | 17:45  | 122,943 | 122,945 | 1,28  | 0,09  |
|           | 18:00  | 118,143 | 118,175 | 31,70 | 2,18  |
|           | 18:15  | 113,962 | 113,994 | 31,29 | 2,15  |
|           | 18:30  | 118,725 | 118,737 | 12,62 | 0,87  |
|           | 18:45  | 120,362 | 120,375 | 13,03 | 0,90  |
|           | 19:00  | 119,343 | 119,364 | 20,86 | 1,43  |
|           | 19:15  | 118,143 | 118,175 | 31,51 | 2,17  |
|           | 19:30  | 115,162 | 115,167 | 4,79  | 0,33  |
|           | 19:45  | 112,143 | 112,152 | 8,71  | 0,60  |
|           | 20:00  | 112,943 | 112,955 | 11,46 | 0,79  |
|           | 20:15  | 101,781 | 101,810 | 28,53 | 1,96  |
|           | 20:30  | 97,562  | 97,576  | 13,47 | 0,93  |
|           | 20:45  | 92,762  | 92,794  | 31,49 | 2,16  |
|           | 21:00  | 95,562  | 95,568  | 5,61  | 0,39  |
|           | 21:15  | 84,581  | 84,589  | 8,34  | 0,57  |
|           | 21:30  | 81,381  | 81,412  | 30,67 | 2,11  |
|           | 21:45  | 82,362  | 82,360  | -2,43 | -0,17 |
|           | 22:00  | 82,181  | 82,191  | 10,06 | 0,69  |
|           | 22:15  | 74,762  | 74,768  | 5,47  | 0,38  |
|           | 22:30  | 82,181  | 82,184  | 3,05  | 0,21  |
|           | 22:45  | 83,562  | 83,593  | 30,90 | 2,12  |
|           | 23:00  | 75,381  | 75,401  | 20,37 | 1,40  |
|           | 23:15  | 71,600  | 71,615  | 14,89 | 1,02  |
|           | 23:30  | 69,962  | 69,964  | 2,13  | 0,15  |
|           | 23:45  | 67,600  | 67,625  | 24,98 | 1,72  |
|           | 0:00   | 69,381  | 69,403  | 21,57 | 1,48  |
| 8.7.2015. | 0:15   | 62,762  | 62,792  | 29,83 | 1,69  |
|           | 0:30   | 58,000  | 58,013  | 13,18 | 0,75  |
|           | 0:45   | 55,600  | 55,624  | 24,49 | 1,39  |
|           | 1:00   | 57,381  | 57,401  | 19,82 | 1,12  |
|           | 1:15   | 53,381  | 53,397  | 16,17 | 0,92  |
|           | 1:30   | 54,581  | 54,604  | 23,23 | 1,31  |
|           | 1:45   | 60,800  | 60,804  | 3,97  | 0,22  |
|           | 2:00   | 49,381  | 49,408  | 26,97 | 1,53  |
|           | 2:15   | 49,200  | 49,204  | 3,67  | 0,21  |
|           | 2:30   | 43,781  | 43,797  | 15,37 | 0,87  |
|           | 2:45   | 41,600  | 41,621  | 20,61 | 1,17  |
|           | 3:00   | 43,781  | 43,804  | 22,96 | 1,30  |
|           | 3:15   | 48,000  | 48,028  | 28,00 | 1,59  |
|           | 3:30   | 50,981  | 50,993  | 11,52 | 0,65  |
|           | 3:45   | 48,000  | 48,012  | 11,67 | 0,66  |
|           | 4:00   | 47,381  | 47,400  | 18,97 | 1,07  |
|           | 4:15   | 49,381  | 49,398  | 17,22 | 0,98  |
| 4:30      | 52,400 | 52,427  | 26,57   | 1,50  |       |

|       |         |         |       |       |
|-------|---------|---------|-------|-------|
| 4:45  | 52,800  | 52,828  | 27,54 | 1,56  |
| 5:00  | 54,362  | 54,375  | 13,15 | 0,74  |
| 5:15  | 66,800  | 66,808  | 8,37  | 0,47  |
| 5:30  | 57,781  | 57,791  | 9,88  | 0,56  |
| 5:45  | 57,381  | 57,388  | 6,76  | 0,38  |
| 6:00  | 56,581  | 56,594  | 12,42 | 0,70  |
| 6:15  | 69,200  | 69,231  | 30,71 | 1,74  |
| 6:30  | 70,981  | 71,002  | 21,10 | 1,19  |
| 6:45  | 63,962  | 63,982  | 19,85 | 1,12  |
| 7:00  | 71,381  | 71,411  | 29,49 | 1,67  |
| 7:15  | 80,581  | 80,612  | 31,04 | 1,76  |
| 7:30  | 88,181  | 88,212  | 30,79 | 1,74  |
| 7:45  | 85,962  | 85,986  | 23,97 | 1,36  |
| 8:00  | 93,162  | 93,179  | 17,01 | 0,96  |
| 8:15  | 103,781 | 103,794 | 13,13 | 0,74  |
| 8:30  | 102,543 | 102,562 | 18,84 | 1,07  |
| 8:45  | 105,162 | 105,169 | 6,89  | 0,39  |
| 9:00  | 106,362 | 106,380 | 17,84 | 1,01  |
| 9:15  | 108,143 | 108,166 | 22,32 | 1,26  |
| 9:30  | 103,162 | 103,172 | 10,18 | 0,58  |
| 9:45  | 105,562 | 105,580 | 17,67 | 1,00  |
| 10:00 | 101,562 | 101,582 | 19,27 | 1,09  |
| 10:15 | 101,343 | 101,370 | 26,47 | 1,50  |
| 10:30 | 101,162 | 101,184 | 21,47 | 1,22  |
| 10:45 | 103,562 | 103,580 | 17,50 | 0,99  |
| 11:00 | 112,362 | 112,386 | 23,76 | 1,35  |
| 11:15 | 109,743 | 109,771 | 28,04 | 1,59  |
| 11:30 | 106,543 | 106,555 | 11,37 | 0,64  |
| 11:45 | 106,943 | 106,972 | 28,20 | 1,60  |
| 12:00 | 106,362 | 106,362 | -0,58 | -0,03 |
| 12:15 | 104,362 | 104,381 | 19,11 | 1,08  |
| 12:30 | 107,743 | 107,774 | 30,84 | 1,75  |
| 12:45 | 108,543 | 108,558 | 14,11 | 0,80  |
| 13:00 | 106,362 | 106,393 | 30,90 | 1,75  |
| 13:15 | 112,943 | 112,960 | 17,07 | 0,97  |
| 13:30 | 113,925 | 113,930 | 5,79  | 0,33  |
| 13:45 | 113,962 | 113,963 | 1,14  | 0,06  |
| 14:00 | 112,143 | 112,164 | 20,29 | 1,15  |
| 14:15 | 115,743 | 115,751 | 7,44  | 0,42  |
| 14:30 | 114,143 | 114,149 | 6,04  | 0,34  |
| 14:45 | 118,143 | 118,154 | 10,96 | 0,62  |
| 15:00 | 118,725 | 118,758 | 33,53 | 1,90  |
| 15:15 | 119,343 | 119,356 | 12,68 | 0,72  |
| 15:30 | 118,943 | 118,977 | 33,59 | 1,90  |
| 15:45 | 120,143 | 120,164 | 20,60 | 1,17  |
| 16:00 | 122,543 | 122,579 | 35,54 | 2,01  |
| 16:15 | 121,525 | 121,550 | 25,74 | 1,46  |
| 16:30 | 120,325 | 120,347 | 22,90 | 1,30  |
| 16:45 | 115,962 | 115,984 | 21,42 | 1,21  |
| 17:00 | 110,943 | 110,977 | 33,56 | 1,90  |
| 17:15 | 105,743 | 105,757 | 13,43 | 0,76  |
| 17:30 | 111,562 | 111,566 | 3,51  | 0,20  |
| 17:45 | 108,943 | 108,958 | 14,64 | 0,83  |
| 18:00 | 105,162 | 105,173 | 10,67 | 0,60  |
| 18:15 | 102,762 | 102,762 | -0,56 | -0,03 |
| 18:30 | 101,162 | 101,176 | 13,55 | 0,77  |
| 18:45 | 99,962  | 99,966  | 4,11  | 0,23  |
| 19:00 | 98,143  | 98,162  | 18,55 | 1,05  |
| 19:15 | 98,181  | 98,195  | 13,64 | 0,77  |
| 19:30 | 100,543 | 100,562 | 18,32 | 1,04  |
| 19:45 | 99,562  | 99,568  | 5,70  | 0,32  |
| 20:00 | 94,581  | 94,597  | 15,88 | 0,90  |
| 20:15 | 88,943  | 88,970  | 26,42 | 1,50  |

|           |       |        |        |       |       |
|-----------|-------|--------|--------|-------|-------|
|           | 20:30 | 78,581 | 78,597 | 16,08 | 0,91  |
|           | 20:45 | 90,981 | 90,980 | -1,61 | -0,09 |
|           | 21:00 | 85,962 | 85,980 | 17,72 | 1,00  |
|           | 21:15 | 83,562 | 83,596 | 33,51 | 1,90  |
|           | 21:30 | 86,181 | 86,200 | 18,64 | 1,06  |
|           | 21:45 | 82,181 | 82,184 | 3,34  | 0,19  |
|           | 22:00 | 77,962 | 77,966 | 3,81  | 0,22  |
|           | 22:15 | 64,981 | 64,985 | 4,12  | 0,23  |
|           | 22:30 | 72,581 | 72,604 | 22,73 | 1,29  |
|           | 22:45 | 75,781 | 75,792 | 11,13 | 0,63  |
|           | 23:00 | 66,181 | 66,182 | 0,80  | 0,05  |
|           | 23:15 | 48,981 | 49,001 | 19,37 | 1,10  |
|           | 23:30 | 44,400 | 44,424 | 23,94 | 1,36  |
|           | 23:45 | 51,343 | 51,345 | 1,60  | 0,09  |
|           | 0:00  | 42,581 | 42,591 | 9,47  | 0,54  |
| 9.7.2015. | 0:15  | 42,581 | 42,594 | 13,00 | 0,56  |
|           | 0:30  | 53,381 | 53,387 | 5,62  | 0,24  |
|           | 0:45  | 57,781 | 57,786 | 4,94  | 0,21  |
|           | 1:00  | 51,381 | 51,389 | 7,65  | 0,33  |
|           | 1:15  | 52,581 | 52,608 | 26,94 | 1,16  |
|           | 1:30  | 51,200 | 51,218 | 17,66 | 0,76  |
|           | 1:45  | 50,581 | 50,604 | 22,66 | 0,97  |
|           | 2:00  | 44,581 | 44,596 | 14,42 | 0,62  |
|           | 2:15  | 45,200 | 45,212 | 11,63 | 0,50  |
|           | 2:30  | 42,000 | 42,029 | 28,96 | 1,24  |
|           | 2:45  | 46,581 | 46,600 | 18,50 | 0,79  |
|           | 3:00  | 42,400 | 42,411 | 11,34 | 0,49  |
|           | 3:15  | 47,381 | 47,388 | 6,64  | 0,29  |
|           | 3:30  | 48,181 | 48,207 | 25,38 | 1,09  |
|           | 3:45  | 43,019 | 43,028 | 9,35  | 0,40  |
|           | 4:00  | 46,581 | 46,596 | 15,31 | 0,66  |
|           | 4:15  | 49,200 | 49,211 | 10,51 | 0,45  |
|           | 4:30  | 52,181 | 52,202 | 21,36 | 0,92  |
|           | 4:45  | 51,781 | 51,792 | 10,52 | 0,45  |
|           | 5:00  | 56,581 | 56,585 | 3,89  | 0,17  |
|           | 5:15  | 55,600 | 55,629 | 28,98 | 1,24  |
|           | 5:30  | 45,600 | 45,612 | 11,82 | 0,51  |
|           | 5:45  | 47,381 | 47,391 | 9,61  | 0,41  |
|           | 6:00  | 49,781 | 49,794 | 12,77 | 0,55  |
|           | 6:15  | 62,800 | 62,824 | 24,15 | 1,04  |
|           | 6:30  | 65,381 | 65,397 | 16,00 | 0,69  |
|           | 6:45  | 62,181 | 62,189 | 8,04  | 0,35  |
|           | 7:00  | 62,981 | 62,998 | 16,54 | 0,71  |
|           | 7:15  | 65,781 | 65,793 | 11,99 | 0,51  |
|           | 7:30  | 65,781 | 65,786 | 5,00  | 0,21  |
|           | 7:45  | 75,381 | 75,392 | 10,80 | 0,46  |
|           | 8:00  | 70,581 | 70,590 | 9,26  | 0,40  |
|           | 8:15  | 83,562 | 83,589 | 26,76 | 1,15  |
|           | 8:30  | 80,581 | 80,594 | 12,39 | 0,53  |
|           | 8:45  | 75,781 | 75,800 | 18,79 | 0,81  |
|           | 9:00  | 78,981 | 78,995 | 13,54 | 0,58  |
|           | 9:15  | 83,162 | 83,183 | 21,22 | 0,91  |
|           | 9:30  | 80,362 | 80,378 | 15,29 | 0,66  |
|           | 9:45  | 80,181 | 80,210 | 29,06 | 1,25  |
|           | 10:00 | 81,381 | 81,403 | 21,69 | 0,93  |
|           | 10:15 | 86,981 | 86,983 | 2,07  | 0,09  |
|           | 10:30 | 86,943 | 86,962 | 18,95 | 0,81  |
|           | 10:45 | 88,762 | 88,770 | 8,08  | 0,35  |
|           | 11:00 | 88,181 | 88,209 | 27,78 | 1,19  |
|           | 11:15 | 90,762 | 90,764 | 1,77  | 0,08  |
|           | 11:30 | 94,181 | 94,207 | 25,50 | 1,09  |
|           | 11:45 | 91,562 | 91,567 | 5,23  | 0,22  |
|           | 12:00 | 94,581 | 94,586 | 4,75  | 0,20  |

|            |        |        |        |       |      |
|------------|--------|--------|--------|-------|------|
|            | 12:15  | 97,743 | 97,768 | 24,60 | 1,06 |
|            | 12:30  | 94,581 | 94,585 | 4,02  | 0,17 |
|            | 12:45  | 88,143 | 88,169 | 25,41 | 1,09 |
|            | 13:00  | 91,162 | 91,174 | 11,88 | 0,51 |
|            | 13:15  | 91,962 | 91,976 | 13,37 | 0,57 |
|            | 13:30  | 91,381 | 91,388 | 7,09  | 0,30 |
|            | 13:45  | 92,581 | 92,600 | 19,25 | 0,83 |
|            | 14:00  | 89,343 | 89,369 | 25,36 | 1,09 |
|            | 14:15  | 86,181 | 86,195 | 13,74 | 0,59 |
|            | 14:30  | 83,162 | 83,176 | 13,57 | 0,58 |
|            | 14:45  | 88,181 | 88,199 | 17,82 | 0,77 |
|            | 15:00  | 90,362 | 90,395 | 32,51 | 1,40 |
|            | 15:15  | 94,762 | 94,769 | 6,61  | 0,28 |
|            | 15:30  | 91,381 | 91,383 | 2,18  | 0,09 |
|            | 15:45  | 91,962 | 91,968 | 5,86  | 0,25 |
|            | 16:00  | 89,562 | 89,579 | 16,51 | 0,71 |
|            | 16:15  | 87,962 | 87,988 | 25,94 | 1,11 |
|            | 16:30  | 85,381 | 85,406 | 25,34 | 1,09 |
|            | 16:45  | 83,781 | 83,799 | 17,59 | 0,76 |
|            | 17:00  | 96,362 | 96,375 | 12,73 | 0,55 |
|            | 17:15  | 91,962 | 91,991 | 28,51 | 1,22 |
|            | 17:30  | 81,381 | 81,393 | 12,16 | 0,52 |
|            | 17:45  | 80,581 | 80,606 | 24,56 | 1,05 |
|            | 18:00  | 82,362 | 82,389 | 26,57 | 1,14 |
|            | 18:15  | 68,181 | 68,209 | 27,61 | 1,19 |
|            | 18:30  | 68,581 | 68,598 | 16,92 | 0,73 |
|            | 18:45  | 66,981 | 67,006 | 24,49 | 1,05 |
|            | 19:00  | 68,581 | 68,600 | 19,22 | 0,83 |
|            | 19:15  | 62,981 | 62,999 | 18,26 | 0,78 |
|            | 19:30  | 63,200 | 63,213 | 13,21 | 0,57 |
|            | 19:45  | 61,562 | 61,566 | 4,09  | 0,18 |
|            | 20:00  | 66,000 | 66,003 | 2,58  | 0,11 |
|            | 20:15  | 60,981 | 60,992 | 10,84 | 0,47 |
|            | 20:30  | 56,981 | 57,006 | 24,41 | 1,05 |
|            | 20:45  | 54,800 | 54,821 | 21,02 | 0,90 |
|            | 21:00  | 57,781 | 57,790 | 9,36  | 0,40 |
|            | 21:15  | 61,781 | 61,809 | 27,73 | 1,19 |
|            | 21:30  | 61,781 | 61,785 | 3,43  | 0,15 |
|            | 21:45  | 62,181 | 62,207 | 26,30 | 1,13 |
|            | 22:00  | 58,400 | 58,412 | 11,75 | 0,50 |
|            | 22:15  | 44,981 | 44,986 | 5,16  | 0,22 |
|            | 22:30  | 55,600 | 55,618 | 17,80 | 0,76 |
|            | 22:45  | 54,181 | 54,193 | 12,14 | 0,52 |
|            | 23:00  | 49,600 | 49,605 | 4,80  | 0,21 |
|            | 23:15  | 52,181 | 52,191 | 10,08 | 0,43 |
|            | 23:30  | 44,181 | 44,209 | 27,89 | 1,20 |
|            | 23:45  | 48,400 | 48,418 | 17,54 | 0,75 |
|            | 0:00   | 45,200 | 45,217 | 17,07 | 0,73 |
| 10.7.2015. | 0:15   | 41,381 | 41,388 | 7,20  | 0,39 |
|            | 0:30   | 37,600 | 37,627 | 27,37 | 1,49 |
|            | 0:45   | 34,981 | 34,994 | 13,14 | 0,71 |
|            | 1:00   | 32,800 | 32,820 | 20,41 | 1,11 |
|            | 1:15   | 32,800 | 32,819 | 18,57 | 1,01 |
|            | 1:30   | 35,781 | 35,788 | 7,02  | 0,38 |
|            | 1:45   | 42,400 | 42,423 | 23,46 | 1,27 |
|            | 2:00   | 40,800 | 40,828 | 27,86 | 1,51 |
|            | 2:15   | 32,981 | 33,003 | 22,21 | 1,21 |
|            | 2:30   | 32,619 | 32,639 | 19,70 | 1,07 |
|            | 2:45   | 32,981 | 33,003 | 22,24 | 1,21 |
|            | 3:00   | 34,000 | 34,008 | 7,75  | 0,42 |
|            | 3:15   | 37,200 | 37,223 | 23,09 | 1,25 |
|            | 3:30   | 34,000 | 34,011 | 10,53 | 0,57 |
| 3:45       | 38,181 | 38,190 | 8,39   | 0,46  |      |

|       |        |        |       |      |
|-------|--------|--------|-------|------|
| 4:00  | 40,581 | 40,591 | 10,27 | 0,56 |
| 4:15  | 41,019 | 41,037 | 18,33 | 1,00 |
| 4:30  | 44,362 | 44,386 | 23,25 | 1,26 |
| 4:45  | 48,400 | 48,408 | 8,34  | 0,45 |
| 5:00  | 45,200 | 45,215 | 14,57 | 0,79 |
| 5:15  | 48,581 | 48,595 | 14,16 | 0,77 |
| 5:30  | 46,800 | 46,802 | 1,52  | 0,08 |
| 5:45  | 46,981 | 47,003 | 22,19 | 1,21 |
| 6:00  | 42,400 | 42,406 | 6,35  | 0,34 |
| 6:15  | 53,200 | 53,224 | 23,53 | 1,28 |
| 6:30  | 53,781 | 53,802 | 21,19 | 1,15 |
| 6:45  | 72,362 | 72,373 | 10,93 | 0,59 |
| 7:00  | 69,200 | 69,223 | 23,01 | 1,25 |
| 7:15  | 67,381 | 67,405 | 23,76 | 1,29 |
| 7:30  | 63,781 | 63,798 | 16,77 | 0,91 |
| 7:45  | 66,581 | 66,595 | 14,37 | 0,78 |
| 8:00  | 60,000 | 60,010 | 9,57  | 0,52 |
| 8:15  | 67,162 | 67,189 | 26,94 | 1,46 |
| 8:30  | 60,400 | 60,413 | 13,39 | 0,73 |
| 8:45  | 59,781 | 59,805 | 23,80 | 1,29 |
| 9:00  | 61,381 | 61,394 | 12,74 | 0,69 |
| 9:15  | 70,981 | 70,989 | 8,20  | 0,45 |
| 9:30  | 70,981 | 70,996 | 14,98 | 0,81 |
| 9:45  | 67,781 | 67,794 | 13,10 | 0,71 |
| 10:00 | 67,781 | 67,786 | 4,86  | 0,26 |
| 10:15 | 67,381 | 67,400 | 18,55 | 1,01 |
| 10:30 | 61,200 | 61,229 | 28,77 | 1,56 |
| 10:45 | 64,362 | 64,380 | 18,17 | 0,99 |
| 11:00 | 63,381 | 63,384 | 2,58  | 0,14 |
| 11:15 | 63,200 | 63,226 | 26,30 | 1,43 |
| 11:30 | 64,181 | 64,203 | 22,04 | 1,20 |
| 11:45 | 62,181 | 62,207 | 26,30 | 1,43 |
| 12:00 | 62,581 | 62,597 | 16,02 | 0,87 |
| 12:15 | 56,581 | 56,594 | 13,26 | 0,72 |
| 12:30 | 54,181 | 54,195 | 13,58 | 0,74 |
| 12:45 | 57,600 | 57,622 | 21,97 | 1,19 |
| 13:00 | 56,000 | 56,006 | 5,57  | 0,30 |
| 13:15 | 60,581 | 60,587 | 5,81  | 0,32 |
| 13:30 | 58,362 | 58,387 | 25,03 | 1,36 |
| 13:45 | 60,400 | 60,427 | 26,98 | 1,47 |
| 14:00 | 56,981 | 57,005 | 24,16 | 1,31 |
| 14:15 | 56,981 | 57,005 | 24,23 | 1,32 |
| 14:30 | 59,600 | 59,614 | 13,94 | 0,76 |
| 14:45 | 58,181 | 58,198 | 17,36 | 0,94 |
| 15:00 | 57,781 | 57,787 | 5,97  | 0,32 |
| 15:15 | 58,181 | 58,194 | 13,31 | 0,72 |
| 15:30 | 55,600 | 55,630 | 29,61 | 1,61 |
| 15:45 | 61,781 | 61,792 | 10,99 | 0,60 |
| 16:00 | 61,562 | 61,569 | 6,41  | 0,35 |
| 16:15 | 62,000 | 62,026 | 25,89 | 1,41 |
| 16:30 | 60,181 | 60,204 | 22,44 | 1,22 |
| 16:45 | 60,800 | 60,814 | 13,95 | 0,76 |
| 17:00 | 60,981 | 60,993 | 12,18 | 0,66 |
| 17:15 | 53,200 | 53,210 | 10,40 | 0,56 |
| 17:30 | 58,581 | 58,600 | 18,53 | 1,01 |
| 17:45 | 63,962 | 63,973 | 10,77 | 0,58 |
| 18:00 | 57,600 | 57,608 | 7,74  | 0,42 |
| 18:15 | 58,581 | 58,589 | 8,35  | 0,45 |
| 18:30 | 62,000 | 62,011 | 10,71 | 0,58 |
| 18:45 | 58,981 | 58,998 | 16,76 | 0,91 |
| 19:00 | 63,381 | 63,390 | 9,07  | 0,49 |
| 19:15 | 52,181 | 52,197 | 15,70 | 0,85 |
| 19:30 | 48,800 | 48,817 | 17,36 | 0,94 |

|            |        |        |        |       |      |
|------------|--------|--------|--------|-------|------|
|            | 19:45  | 48,581 | 48,600 | 19,30 | 1,05 |
|            | 20:00  | 44,800 | 44,818 | 17,80 | 0,97 |
|            | 20:15  | 42,581 | 42,604 | 22,63 | 1,23 |
|            | 20:30  | 34,219 | 34,245 | 26,06 | 1,42 |
|            | 20:45  | 34,981 | 35,000 | 18,94 | 1,03 |
|            | 21:00  | 36,981 | 36,998 | 17,04 | 0,93 |
|            | 21:15  | 42,400 | 42,426 | 25,88 | 1,41 |
|            | 21:30  | 38,400 | 38,422 | 22,49 | 1,22 |
|            | 21:45  | 40,400 | 40,422 | 22,15 | 1,20 |
|            | 22:00  | 40,981 | 40,994 | 12,85 | 0,70 |
|            | 22:15  | 35,419 | 35,426 | 7,00  | 0,38 |
|            | 22:30  | 39,381 | 39,388 | 7,25  | 0,39 |
|            | 22:45  | 43,781 | 43,804 | 22,87 | 1,24 |
|            | 23:00  | 40,800 | 40,823 | 23,46 | 1,27 |
|            | 23:15  | 46,581 | 46,604 | 22,45 | 1,22 |
|            | 23:30  | 33,200 | 33,226 | 26,19 | 1,42 |
|            | 23:45  | 36,000 | 36,020 | 20,03 | 1,09 |
|            | 0:00   | 37,200 | 37,228 | 27,72 | 1,51 |
| 11.7.2015. | 0:15   | 38,981 | 38,985 | 4,04  | 0,16 |
|            | 0:30   | 32,800 | 32,819 | 19,04 | 0,75 |
|            | 0:45   | 28,581 | 28,586 | 4,69  | 0,18 |
|            | 1:00   | 27,200 | 27,210 | 10,37 | 0,41 |
|            | 1:15   | 29,419 | 29,426 | 6,76  | 0,26 |
|            | 1:30   | 34,181 | 34,202 | 21,34 | 0,84 |
|            | 1:45   | 45,781 | 45,799 | 18,12 | 0,71 |
|            | 2:00   | 36,800 | 36,814 | 13,56 | 0,53 |
|            | 2:15   | 32,000 | 32,010 | 9,70  | 0,38 |
|            | 2:30   | 18,400 | 18,421 | 20,60 | 0,81 |
|            | 2:45   | 23,381 | 23,382 | 0,96  | 0,04 |
|            | 3:00   | 21,600 | 21,621 | 20,80 | 0,82 |
|            | 3:15   | 24,000 | 24,007 | 6,63  | 0,26 |
|            | 3:30   | 21,819 | 21,820 | 0,69  | 0,03 |
|            | 3:45   | 22,981 | 23,003 | 22,26 | 0,87 |
|            | 4:00   | 26,400 | 26,409 | 9,17  | 0,36 |
|            | 4:15   | 31,600 | 31,623 | 23,21 | 0,91 |
|            | 4:30   | 33,381 | 33,399 | 17,48 | 0,69 |
|            | 4:45   | 34,400 | 34,424 | 24,30 | 0,95 |
|            | 5:00   | 43,200 | 43,222 | 22,32 | 0,88 |
|            | 5:15   | 44,181 | 44,207 | 26,29 | 1,03 |
|            | 5:30   | 44,800 | 44,820 | 19,80 | 0,78 |
|            | 5:45   | 36,181 | 36,184 | 2,69  | 0,11 |
|            | 6:00   | 43,200 | 43,213 | 12,60 | 0,49 |
|            | 6:15   | 45,600 | 45,616 | 15,75 | 0,62 |
|            | 6:30   | 39,200 | 39,208 | 8,37  | 0,33 |
|            | 6:45   | 50,762 | 50,772 | 10,04 | 0,39 |
|            | 7:00   | 49,019 | 49,045 | 25,91 | 1,02 |
|            | 7:15   | 46,400 | 46,414 | 14,45 | 0,57 |
|            | 7:30   | 42,362 | 42,378 | 15,83 | 0,62 |
|            | 7:45   | 35,600 | 35,611 | 10,61 | 0,42 |
|            | 8:00   | 43,200 | 43,216 | 16,20 | 0,64 |
|            | 8:15   | 64,000 | 64,008 | 8,07  | 0,32 |
|            | 8:30   | 53,162 | 53,177 | 14,26 | 0,56 |
|            | 8:45   | 52,000 | 52,004 | 4,42  | 0,17 |
|            | 9:00   | 49,381 | 49,408 | 27,19 | 1,07 |
| 9:15       | 64,000 | 64,008 | 7,71   | 0,30  |      |
| 9:30       | 58,362 | 58,369 | 7,21   | 0,28  |      |
| 9:45       | 52,400 | 52,408 | 7,80   | 0,31  |      |
| 10:00      | 55,781 | 55,806 | 25,09  | 0,98  |      |
| 10:15      | 59,200 | 59,218 | 17,98  | 0,71  |      |
| 10:30      | 60,181 | 60,200 | 18,82  | 0,74  |      |
| 10:45      | 58,181 | 58,203 | 21,95  | 0,86  |      |
| 11:00      | 56,981 | 57,002 | 20,88  | 0,82  |      |
| 11:15      | 58,181 | 58,203 | 21,41  | 0,84  |      |



|            |       |        |        |       |      |
|------------|-------|--------|--------|-------|------|
|            | 11:30 | 65,600 | 65,626 | 25,56 | 1,00 |
|            | 11:45 | 58,000 | 58,011 | 10,96 | 0,43 |
|            | 12:00 | 60,581 | 60,605 | 23,78 | 0,93 |
|            | 12:15 | 62,762 | 62,771 | 8,48  | 0,33 |
|            | 12:30 | 60,800 | 60,825 | 24,92 | 0,98 |
|            | 12:45 | 56,581 | 56,597 | 15,94 | 0,62 |
|            | 13:00 | 54,581 | 54,600 | 18,41 | 0,72 |
|            | 13:15 | 52,400 | 52,406 | 6,11  | 0,24 |
|            | 13:30 | 47,781 | 47,801 | 20,10 | 0,79 |
|            | 13:45 | 50,400 | 50,402 | 1,73  | 0,07 |
|            | 14:00 | 47,781 | 47,802 | 21,00 | 0,82 |
|            | 14:15 | 58,581 | 58,586 | 5,05  | 0,20 |
|            | 14:30 | 56,800 | 56,819 | 19,01 | 0,75 |
|            | 14:45 | 56,581 | 56,600 | 18,44 | 0,72 |
|            | 15:00 | 54,581 | 54,593 | 11,81 | 0,46 |
|            | 15:15 | 66,000 | 66,015 | 15,03 | 0,59 |
|            | 15:30 | 63,962 | 63,972 | 9,36  | 0,37 |
|            | 15:45 | 58,800 | 58,807 | 7,29  | 0,29 |
|            | 16:00 | 58,181 | 58,206 | 24,46 | 0,96 |
|            | 16:15 | 55,200 | 55,222 | 22,50 | 0,88 |
|            | 16:30 | 47,781 | 47,796 | 14,38 | 0,56 |
|            | 16:45 | 46,000 | 46,009 | 9,40  | 0,37 |
|            | 17:00 | 48,981 | 49,005 | 24,06 | 0,94 |
|            | 17:15 | 56,000 | 56,024 | 24,44 | 0,96 |
|            | 17:30 | 57,562 | 57,575 | 12,99 | 0,51 |
|            | 17:45 | 58,400 | 58,420 | 20,12 | 0,79 |
|            | 18:00 | 61,781 | 61,803 | 22,26 | 0,87 |
|            | 18:15 | 45,600 | 45,624 | 23,79 | 0,93 |
|            | 18:30 | 57,381 | 57,406 | 24,66 | 0,97 |
|            | 18:45 | 54,581 | 54,595 | 14,03 | 0,55 |
|            | 19:00 | 52,400 | 52,425 | 25,28 | 0,99 |
|            | 19:15 | 53,381 | 53,406 | 24,73 | 0,97 |
|            | 19:30 | 52,400 | 52,425 | 24,91 | 0,98 |
|            | 19:45 | 51,200 | 51,213 | 13,33 | 0,52 |
|            | 20:00 | 42,581 | 42,593 | 12,01 | 0,47 |
|            | 20:15 | 36,800 | 36,809 | 9,32  | 0,37 |
|            | 20:30 | 38,000 | 38,019 | 18,98 | 0,74 |
|            | 20:45 | 35,781 | 35,795 | 13,92 | 0,55 |
|            | 21:00 | 36,000 | 36,022 | 22,05 | 0,86 |
|            | 21:15 | 42,000 | 42,027 | 27,13 | 1,06 |
|            | 21:30 | 45,381 | 45,385 | 3,75  | 0,15 |
|            | 21:45 | 41,600 | 41,608 | 8,39  | 0,33 |
|            | 22:00 | 36,800 | 36,815 | 15,42 | 0,60 |
|            | 22:15 | 18,800 | 18,823 | 22,75 | 0,89 |
|            | 22:30 | 23,381 | 23,389 | 8,16  | 0,32 |
|            | 22:45 | 26,800 | 26,802 | 1,72  | 0,07 |
|            | 23:00 | 31,600 | 31,619 | 19,37 | 0,76 |
|            | 23:15 | 34,000 | 34,005 | 4,84  | 0,19 |
|            | 23:30 | 29,781 | 29,797 | 15,60 | 0,61 |
|            | 23:45 | 28,219 | 28,239 | 20,31 | 0,80 |
|            | 0:00  | 28,800 | 28,806 | 5,51  | 0,22 |
| 12.7.2015. | 0:15  | 26,581 | 26,592 | 11,25 | 0,46 |
|            | 0:30  | 27,600 | 27,621 | 21,43 | 0,87 |
|            | 0:45  | 23,200 | 23,206 | 6,49  | 0,26 |
|            | 1:00  | 20,000 | 20,016 | 16,02 | 0,65 |
|            | 1:15  | 30,800 | 30,823 | 22,78 | 0,93 |
|            | 1:30  | 23,200 | 23,209 | 9,18  | 0,37 |
|            | 1:45  | 25,781 | 25,791 | 10,03 | 0,41 |
|            | 2:00  | 24,800 | 24,820 | 19,72 | 0,80 |
|            | 2:15  | 36,219 | 36,226 | 7,46  | 0,30 |
|            | 2:30  | 37,381 | 37,391 | 10,36 | 0,42 |
|            | 2:45  | 34,400 | 34,414 | 14,13 | 0,57 |
|            | 3:00  | 31,600 | 31,620 | 19,94 | 0,81 |

|       |        |        |       |      |
|-------|--------|--------|-------|------|
| 3:15  | 28,000 | 28,019 | 19,44 | 0,79 |
| 3:30  | 28,181 | 28,194 | 13,04 | 0,53 |
| 3:45  | 28,000 | 28,008 | 7,90  | 0,32 |
| 4:00  | 26,400 | 26,414 | 13,63 | 0,55 |
| 4:15  | 32,800 | 32,821 | 20,84 | 0,85 |
| 4:30  | 37,200 | 37,217 | 16,69 | 0,68 |
| 4:45  | 35,381 | 35,399 | 17,93 | 0,73 |
| 5:00  | 38,000 | 38,025 | 24,76 | 1,01 |
| 5:15  | 41,200 | 41,221 | 20,98 | 0,85 |
| 5:30  | 39,381 | 39,393 | 11,76 | 0,48 |
| 5:45  | 37,419 | 37,427 | 8,25  | 0,34 |
| 6:00  | 37,381 | 37,404 | 23,11 | 0,94 |
| 6:15  | 34,800 | 34,813 | 13,43 | 0,55 |
| 6:30  | 33,781 | 33,807 | 25,63 | 1,04 |
| 6:45  | 31,200 | 31,222 | 21,67 | 0,88 |
| 7:00  | 42,400 | 42,415 | 14,98 | 0,61 |
| 7:15  | 44,400 | 44,426 | 25,97 | 1,06 |
| 7:30  | 43,781 | 43,792 | 10,49 | 0,43 |
| 7:45  | 45,600 | 45,622 | 21,58 | 0,88 |
| 8:00  | 41,200 | 41,213 | 13,34 | 0,54 |
| 8:15  | 53,781 | 53,801 | 20,30 | 0,83 |
| 8:30  | 50,400 | 50,409 | 9,05  | 0,37 |
| 8:45  | 50,581 | 50,606 | 24,83 | 1,01 |
| 9:00  | 49,781 | 49,794 | 13,35 | 0,54 |
| 9:15  | 54,400 | 54,422 | 21,78 | 0,89 |
| 9:30  | 51,200 | 51,209 | 8,78  | 0,36 |
| 9:45  | 48,981 | 49,000 | 19,02 | 0,77 |
| 10:00 | 49,600 | 49,624 | 23,68 | 0,96 |
| 10:15 | 55,200 | 55,223 | 23,26 | 0,95 |
| 10:30 | 46,181 | 46,202 | 20,45 | 0,83 |
| 10:45 | 45,381 | 45,398 | 16,92 | 0,69 |
| 11:00 | 48,400 | 48,411 | 11,43 | 0,46 |
| 11:15 | 48,181 | 48,189 | 7,45  | 0,30 |
| 11:30 | 52,800 | 52,809 | 9,27  | 0,38 |
| 11:45 | 51,600 | 51,627 | 26,78 | 1,09 |
| 12:00 | 48,981 | 49,008 | 27,21 | 1,11 |
| 12:15 | 52,581 | 52,594 | 12,73 | 0,52 |
| 12:30 | 51,200 | 51,223 | 23,11 | 0,94 |
| 12:45 | 50,581 | 50,604 | 22,38 | 0,91 |
| 13:00 | 50,800 | 50,823 | 22,80 | 0,93 |
| 13:15 | 46,800 | 46,828 | 27,81 | 1,13 |
| 13:30 | 45,781 | 45,794 | 12,49 | 0,51 |
| 13:45 | 46,400 | 46,406 | 6,34  | 0,26 |
| 14:00 | 44,981 | 45,005 | 23,46 | 0,95 |
| 14:15 | 48,800 | 48,818 | 18,09 | 0,74 |
| 14:30 | 44,800 | 44,815 | 14,75 | 0,60 |
| 14:45 | 46,981 | 46,999 | 17,43 | 0,71 |
| 15:00 | 49,200 | 49,219 | 19,09 | 0,78 |
| 15:15 | 44,981 | 45,000 | 19,23 | 0,78 |
| 15:30 | 41,200 | 41,216 | 15,60 | 0,63 |
| 15:45 | 48,981 | 49,002 | 20,86 | 0,85 |
| 16:00 | 48,800 | 48,813 | 13,32 | 0,54 |
| 16:15 | 48,000 | 48,017 | 16,87 | 0,69 |
| 16:30 | 43,781 | 43,803 | 21,87 | 0,89 |
| 16:45 | 44,000 | 44,018 | 17,92 | 0,73 |
| 17:00 | 45,200 | 45,224 | 23,53 | 0,96 |
| 17:15 | 35,381 | 35,402 | 20,55 | 0,84 |
| 17:30 | 38,000 | 38,008 | 7,62  | 0,31 |
| 17:45 | 41,600 | 41,623 | 23,18 | 0,94 |
| 18:00 | 42,981 | 43,004 | 22,76 | 0,93 |
| 18:15 | 29,019 | 29,041 | 21,71 | 0,88 |
| 18:30 | 37,381 | 37,405 | 24,14 | 0,98 |
| 18:45 | 39,600 | 39,608 | 8,08  | 0,33 |

|            |       |         |         |       |      |
|------------|-------|---------|---------|-------|------|
|            | 19:00 | 28,800  | 28,813  | 13,07 | 0,53 |
|            | 19:15 | 26,581  | 26,593  | 11,64 | 0,47 |
|            | 19:30 | 30,219  | 30,234  | 15,54 | 0,63 |
|            | 19:45 | 28,400  | 28,418  | 17,95 | 0,73 |
|            | 20:00 | 30,181  | 30,200  | 18,51 | 0,75 |
|            | 20:15 | 33,600  | 33,608  | 8,41  | 0,34 |
|            | 20:30 | 29,600  | 29,611  | 11,41 | 0,46 |
|            | 20:45 | 33,200  | 33,208  | 7,68  | 0,31 |
|            | 21:00 | 34,800  | 34,812  | 12,38 | 0,50 |
|            | 21:15 | 34,981  | 34,996  | 14,91 | 0,61 |
|            | 21:30 | 36,400  | 36,417  | 16,63 | 0,68 |
|            | 21:45 | 38,400  | 38,409  | 9,02  | 0,37 |
|            | 22:00 | 37,200  | 37,215  | 15,22 | 0,62 |
|            | 22:15 | 32,000  | 32,021  | 21,13 | 0,86 |
|            | 22:30 | 39,781  | 39,799  | 17,93 | 0,73 |
|            | 22:45 | 44,000  | 44,013  | 13,16 | 0,54 |
|            | 23:00 | 37,381  | 37,397  | 16,00 | 0,65 |
|            | 23:15 | 36,000  | 36,022  | 21,99 | 0,89 |
|            | 23:30 | 33,200  | 33,207  | 7,28  | 0,30 |
|            | 23:45 | 34,981  | 34,987  | 5,50  | 0,22 |
|            | 0:00  | 31,600  | 31,618  | 17,65 | 0,72 |
|            | 0:15  | 39,600  | 39,607  | 7,39  | 0,32 |
|            | 0:30  | 32,800  | 32,818  | 18,06 | 0,79 |
|            | 0:45  | 38,000  | 38,009  | 9,11  | 0,40 |
|            | 1:00  | 36,400  | 36,409  | 9,20  | 0,40 |
|            | 1:15  | 36,400  | 36,410  | 10,39 | 0,46 |
|            | 1:30  | 36,981  | 37,005  | 23,40 | 1,03 |
|            | 1:45  | 43,600  | 43,621  | 21,10 | 0,93 |
|            | 2:00  | 41,381  | 41,395  | 14,12 | 0,62 |
|            | 2:15  | 38,800  | 38,822  | 21,61 | 0,95 |
|            | 2:30  | 35,381  | 35,400  | 19,15 | 0,84 |
|            | 2:45  | 34,219  | 34,240  | 20,73 | 0,91 |
|            | 3:00  | 30,400  | 30,412  | 11,94 | 0,52 |
|            | 3:15  | 36,800  | 36,814  | 13,62 | 0,60 |
|            | 3:30  | 33,600  | 33,614  | 13,50 | 0,59 |
|            | 3:45  | 38,581  | 38,592  | 11,03 | 0,48 |
|            | 4:00  | 40,800  | 40,815  | 15,19 | 0,67 |
|            | 4:15  | 45,381  | 45,399  | 17,48 | 0,77 |
|            | 4:30  | 47,200  | 47,219  | 18,63 | 0,82 |
|            | 4:45  | 49,381  | 49,390  | 8,44  | 0,37 |
|            | 5:00  | 49,600  | 49,610  | 9,91  | 0,43 |
|            | 5:15  | 52,400  | 52,419  | 18,98 | 0,83 |
| 13.7.2015. | 5:30  | 49,781  | 49,800  | 18,67 | 0,82 |
|            | 5:45  | 48,000  | 48,017  | 17,35 | 0,76 |
|            | 6:00  | 46,981  | 47,000  | 18,56 | 0,81 |
|            | 6:15  | 65,781  | 65,805  | 23,38 | 1,03 |
|            | 6:30  | 73,781  | 73,803  | 22,25 | 0,98 |
|            | 6:45  | 78,000  | 78,026  | 26,03 | 1,14 |
|            | 7:00  | 81,962  | 81,986  | 23,54 | 1,03 |
|            | 7:15  | 96,762  | 96,793  | 31,23 | 1,37 |
|            | 7:30  | 94,981  | 95,003  | 21,52 | 0,94 |
|            | 7:45  | 89,962  | 89,983  | 20,94 | 0,92 |
|            | 8:00  | 88,581  | 88,597  | 15,90 | 0,70 |
|            | 8:15  | 91,562  | 91,573  | 10,84 | 0,48 |
|            | 8:30  | 85,162  | 85,188  | 25,58 | 1,12 |
|            | 8:45  | 80,000  | 80,024  | 24,24 | 1,06 |
|            | 9:00  | 83,162  | 83,176  | 13,76 | 0,60 |
|            | 9:15  | 89,781  | 89,807  | 25,74 | 1,13 |
|            | 9:30  | 97,162  | 97,190  | 28,04 | 1,23 |
|            | 9:45  | 95,162  | 95,188  | 25,79 | 1,13 |
|            | 10:00 | 94,762  | 94,781  | 19,07 | 0,84 |
|            | 10:15 | 104,362 | 104,395 | 33,00 | 1,45 |
|            | 10:30 | 103,162 | 103,178 | 15,95 | 0,70 |

|            |       |         |         |       |      |
|------------|-------|---------|---------|-------|------|
|            | 10:45 | 103,962 | 103,980 | 17,82 | 0,78 |
|            | 11:00 | 104,762 | 104,783 | 20,86 | 0,92 |
|            | 11:15 | 111,962 | 111,997 | 34,54 | 1,52 |
|            | 11:30 | 108,943 | 108,959 | 16,02 | 0,70 |
|            | 11:45 | 109,962 | 109,980 | 17,77 | 0,78 |
|            | 12:00 | 108,762 | 108,780 | 17,72 | 0,78 |
|            | 12:15 | 109,562 | 109,588 | 25,59 | 1,12 |
|            | 12:30 | 105,162 | 105,186 | 24,03 | 1,05 |
|            | 12:45 | 103,562 | 103,584 | 21,91 | 0,96 |
|            | 13:00 | 104,543 | 104,559 | 15,16 | 0,67 |
|            | 13:15 | 107,562 | 107,588 | 25,29 | 1,11 |
|            | 13:30 | 106,581 | 106,600 | 18,40 | 0,81 |
|            | 13:45 | 106,143 | 106,164 | 20,25 | 0,89 |
|            | 14:00 | 106,762 | 106,791 | 28,75 | 1,26 |
|            | 14:15 | 97,162  | 97,173  | 11,10 | 0,49 |
|            | 14:30 | 91,781  | 91,805  | 24,03 | 1,05 |
|            | 14:45 | 94,181  | 94,208  | 27,11 | 1,19 |
|            | 15:00 | 95,743  | 95,760  | 16,78 | 0,74 |
|            | 15:15 | 88,981  | 88,989  | 8,33  | 0,37 |
|            | 15:30 | 92,362  | 92,385  | 22,57 | 0,99 |
|            | 15:45 | 95,962  | 95,979  | 17,21 | 0,76 |
|            | 16:00 | 92,981  | 93,006  | 25,14 | 1,10 |
|            | 16:15 | 99,162  | 99,189  | 26,30 | 1,15 |
|            | 16:30 | 90,762  | 90,792  | 29,94 | 1,31 |
|            | 16:45 | 94,981  | 95,000  | 19,16 | 0,84 |
|            | 17:00 | 93,562  | 93,573  | 10,66 | 0,47 |
|            | 17:15 | 95,562  | 95,573  | 10,49 | 0,46 |
|            | 17:30 | 98,362  | 98,382  | 19,75 | 0,87 |
|            | 17:45 | 95,381  | 95,402  | 21,28 | 0,93 |
|            | 18:00 | 99,162  | 99,176  | 13,32 | 0,58 |
|            | 18:15 | 86,981  | 86,997  | 16,20 | 0,71 |
|            | 18:30 | 86,362  | 86,388  | 25,30 | 1,11 |
|            | 18:45 | 95,962  | 95,976  | 13,99 | 0,61 |
|            | 19:00 | 100,762 | 100,792 | 29,59 | 1,30 |
|            | 19:15 | 94,981  | 94,996  | 14,96 | 0,66 |
|            | 19:30 | 91,962  | 91,974  | 11,42 | 0,50 |
|            | 19:45 | 74,181  | 74,206  | 25,00 | 1,10 |
|            | 20:00 | 72,181  | 72,194  | 12,69 | 0,56 |
|            | 20:15 | 68,000  | 68,027  | 26,59 | 1,17 |
|            | 20:30 | 66,581  | 66,611  | 30,07 | 1,32 |
|            | 20:45 | 67,962  | 67,987  | 25,05 | 1,10 |
|            | 21:00 | 62,800  | 62,829  | 28,88 | 1,27 |
|            | 21:15 | 70,581  | 70,605  | 23,42 | 1,03 |
|            | 21:30 | 70,181  | 70,192  | 10,58 | 0,46 |
|            | 21:45 | 72,181  | 72,195  | 13,91 | 0,61 |
|            | 22:00 | 73,600  | 73,618  | 17,69 | 0,78 |
|            | 22:15 | 65,962  | 65,982  | 19,95 | 0,88 |
|            | 22:30 | 72,800  | 72,821  | 21,34 | 0,94 |
|            | 22:45 | 75,162  | 75,186  | 23,45 | 1,03 |
|            | 23:00 | 69,381  | 69,397  | 16,34 | 0,72 |
|            | 23:15 | 53,381  | 53,393  | 11,70 | 0,51 |
|            | 23:30 | 52,000  | 52,015  | 14,95 | 0,66 |
|            | 23:45 | 50,800  | 50,817  | 17,37 | 0,76 |
|            | 0:00  | 43,781  | 43,807  | 25,68 | 1,13 |
| 14.7.2015. | 0:15  | 38,400  | 38,418  | 18,46 | 0,96 |
|            | 0:30  | 38,400  | 38,416  | 16,00 | 0,84 |
|            | 0:45  | 37,200  | 37,202  | 1,74  | 0,09 |
|            | 1:00  | 39,381  | 39,391  | 9,73  | 0,51 |
|            | 1:15  | 43,381  | 43,401  | 20,03 | 1,05 |
|            | 1:30  | 45,200  | 45,206  | 6,43  | 0,34 |
|            | 1:45  | 51,381  | 51,393  | 11,83 | 0,62 |
|            | 2:00  | 45,600  | 45,609  | 9,12  | 0,48 |
|            | 2:15  | 46,800  | 46,809  | 8,69  | 0,45 |

|       |         |         |       |      |
|-------|---------|---------|-------|------|
| 2:30  | 42,800  | 42,823  | 22,75 | 1,19 |
| 2:45  | 36,981  | 37,001  | 19,65 | 1,03 |
| 3:00  | 42,400  | 42,414  | 13,72 | 0,72 |
| 3:15  | 38,581  | 38,594  | 13,33 | 0,70 |
| 3:30  | 40,400  | 40,413  | 13,34 | 0,70 |
| 3:45  | 39,600  | 39,608  | 8,38  | 0,44 |
| 4:00  | 35,381  | 35,397  | 15,73 | 0,82 |
| 4:15  | 44,800  | 44,827  | 27,34 | 1,43 |
| 4:30  | 50,000  | 50,010  | 9,90  | 0,52 |
| 4:45  | 53,381  | 53,399  | 18,32 | 0,96 |
| 5:00  | 53,600  | 53,620  | 20,16 | 1,05 |
| 5:15  | 48,581  | 48,593  | 11,45 | 0,60 |
| 5:30  | 50,000  | 50,021  | 20,97 | 1,09 |
| 5:45  | 49,381  | 49,401  | 20,08 | 1,05 |
| 6:00  | 48,181  | 48,197  | 16,33 | 0,85 |
| 6:15  | 62,800  | 62,822  | 21,68 | 1,13 |
| 6:30  | 54,400  | 54,425  | 24,78 | 1,29 |
| 6:45  | 50,581  | 50,600  | 19,28 | 1,01 |
| 7:00  | 59,381  | 59,399  | 17,73 | 0,93 |
| 7:15  | 69,381  | 69,406  | 24,86 | 1,30 |
| 7:30  | 86,181  | 86,200  | 19,33 | 1,01 |
| 7:45  | 84,181  | 84,206  | 24,40 | 1,27 |
| 8:00  | 77,381  | 77,403  | 21,76 | 1,14 |
| 8:15  | 109,343 | 109,367 | 23,41 | 1,22 |
| 8:30  | 105,962 | 105,982 | 19,42 | 1,01 |
| 8:45  | 105,562 | 105,587 | 24,94 | 1,30 |
| 9:00  | 101,962 | 101,982 | 19,92 | 1,04 |
| 9:15  | 107,962 | 107,982 | 20,13 | 1,05 |
| 9:30  | 103,562 | 103,590 | 27,71 | 1,45 |
| 9:45  | 99,162  | 99,180  | 17,86 | 0,93 |
| 10:00 | 107,562 | 107,585 | 23,07 | 1,20 |
| 10:15 | 103,162 | 103,184 | 22,04 | 1,15 |
| 10:30 | 105,343 | 105,371 | 27,64 | 1,44 |
| 10:45 | 103,562 | 103,595 | 32,63 | 1,70 |
| 11:00 | 108,762 | 108,780 | 17,98 | 0,94 |
| 11:15 | 107,562 | 107,588 | 26,02 | 1,36 |
| 11:30 | 108,762 | 108,785 | 22,66 | 1,18 |
| 11:45 | 106,762 | 106,787 | 24,39 | 1,27 |
| 12:00 | 108,543 | 108,565 | 21,93 | 1,14 |
| 12:15 | 106,762 | 106,785 | 22,96 | 1,20 |
| 12:30 | 105,962 | 105,989 | 26,27 | 1,37 |
| 12:45 | 107,343 | 107,371 | 27,90 | 1,46 |
| 13:00 | 107,562 | 107,590 | 27,45 | 1,43 |
| 13:15 | 110,762 | 110,775 | 12,76 | 0,67 |
| 13:30 | 107,743 | 107,766 | 22,28 | 1,16 |
| 13:45 | 116,362 | 116,380 | 17,69 | 0,92 |
| 14:00 | 111,562 | 111,578 | 15,60 | 0,81 |
| 14:15 | 109,743 | 109,754 | 10,33 | 0,54 |
| 14:30 | 112,943 | 112,968 | 24,31 | 1,27 |
| 14:45 | 113,562 | 113,593 | 30,82 | 1,61 |
| 15:00 | 110,362 | 110,383 | 20,39 | 1,06 |
| 15:15 | 108,362 | 108,390 | 27,73 | 1,45 |
| 15:30 | 108,143 | 108,175 | 31,93 | 1,67 |
| 15:45 | 110,762 | 110,773 | 10,28 | 0,54 |
| 16:00 | 113,743 | 113,765 | 21,51 | 1,12 |
| 16:15 | 111,962 | 111,990 | 28,19 | 1,47 |
| 16:30 | 114,943 | 114,962 | 18,50 | 0,97 |
| 16:45 | 112,943 | 112,968 | 24,38 | 1,27 |
| 17:00 | 114,981 | 115,009 | 27,41 | 1,43 |
| 17:15 | 112,943 | 112,968 | 25,04 | 1,31 |
| 17:30 | 113,562 | 113,593 | 30,82 | 1,61 |
| 17:45 | 109,743 | 109,754 | 10,45 | 0,55 |
| 18:00 | 111,962 | 111,988 | 26,05 | 1,36 |

|            |         |         |         |       |      |
|------------|---------|---------|---------|-------|------|
|            | 18:15   | 109,743 | 109,758 | 14,54 | 0,76 |
|            | 18:30   | 114,762 | 114,778 | 16,05 | 0,84 |
|            | 18:45   | 114,143 | 114,170 | 26,76 | 1,40 |
|            | 19:00   | 113,562 | 113,581 | 18,33 | 0,96 |
|            | 19:15   | 101,962 | 101,979 | 16,87 | 0,88 |
|            | 19:30   | 92,981  | 93,004  | 22,68 | 1,18 |
|            | 19:45   | 79,962  | 79,976  | 13,57 | 0,71 |
|            | 20:00   | 78,181  | 78,212  | 30,67 | 1,60 |
|            | 20:15   | 60,181  | 60,203  | 21,73 | 1,13 |
|            | 20:30   | 55,200  | 55,216  | 16,41 | 0,86 |
|            | 20:45   | 54,181  | 54,193  | 11,84 | 0,62 |
|            | 21:00   | 54,000  | 54,026  | 26,24 | 1,37 |
|            | 21:15   | 54,000  | 54,009  | 9,26  | 0,48 |
|            | 21:30   | 64,762  | 64,789  | 27,08 | 1,41 |
|            | 21:45   | 65,600  | 65,616  | 16,04 | 0,84 |
|            | 22:00   | 64,800  | 64,807  | 7,37  | 0,38 |
|            | 22:15   | 57,562  | 57,585  | 22,39 | 1,17 |
|            | 22:30   | 60,400  | 60,418  | 18,34 | 0,96 |
|            | 22:45   | 63,381  | 63,386  | 5,13  | 0,27 |
|            | 23:00   | 64,581  | 64,589  | 7,67  | 0,40 |
|            | 23:15   | 48,400  | 48,414  | 13,82 | 0,72 |
|            | 23:30   | 50,981  | 50,988  | 7,22  | 0,38 |
|            | 23:45   | 63,381  | 63,391  | 9,82  | 0,51 |
|            | 0:00    | 53,200  | 53,213  | 13,22 | 0,69 |
| 15.7.2015. | 0:15    | 49,781  | 49,796  | 15,32 | 1,03 |
|            | 0:30    | 49,600  | 49,626  | 26,16 | 1,76 |
|            | 0:45    | 54,581  | 54,597  | 16,22 | 1,09 |
|            | 1:00    | 52,800  | 52,819  | 18,54 | 1,25 |
|            | 1:15    | 52,981  | 52,990  | 9,00  | 0,61 |
|            | 1:30    | 54,000  | 54,028  | 28,24 | 1,90 |
|            | 1:45    | 55,781  | 55,801  | 19,71 | 1,33 |
|            | 2:00    | 48,181  | 48,195  | 13,76 | 0,93 |
|            | 2:15    | 48,000  | 48,008  | 7,76  | 0,52 |
|            | 2:30    | 50,400  | 50,414  | 14,15 | 0,95 |
|            | 2:45    | 54,181  | 54,197  | 15,69 | 1,06 |
|            | 3:00    | 50,000  | 50,027  | 26,71 | 1,80 |
|            | 3:15    | 52,581  | 52,585  | 3,94  | 0,27 |
|            | 3:30    | 54,000  | 54,017  | 17,37 | 1,17 |
|            | 3:45    | 49,962  | 49,977  | 14,85 | 1,00 |
|            | 4:00    | 50,800  | 50,812  | 12,29 | 0,83 |
|            | 4:15    | 51,200  | 51,209  | 9,46  | 0,64 |
|            | 4:30    | 52,581  | 52,597  | 16,04 | 1,08 |
|            | 4:45    | 52,800  | 52,823  | 22,98 | 1,55 |
|            | 5:00    | 57,781  | 57,802  | 20,63 | 1,39 |
|            | 5:15    | 54,400  | 54,420  | 19,62 | 1,32 |
|            | 5:30    | 53,600  | 53,607  | 7,25  | 0,49 |
|            | 5:45    | 51,162  | 51,174  | 11,64 | 0,78 |
|            | 6:00    | 47,200  | 47,205  | 5,05  | 0,34 |
|            | 6:15    | 60,981  | 60,996  | 14,92 | 1,00 |
|            | 6:30    | 60,800  | 60,815  | 14,52 | 0,98 |
|            | 6:45    | 66,181  | 66,193  | 11,44 | 0,77 |
|            | 7:00    | 71,381  | 71,408  | 26,47 | 1,78 |
|            | 7:15    | 88,581  | 88,601  | 19,61 | 1,32 |
|            | 7:30    | 90,762  | 90,792  | 29,94 | 2,02 |
|            | 7:45    | 84,362  | 84,383  | 20,73 | 1,40 |
|            | 8:00    | 94,581  | 94,610  | 28,82 | 1,94 |
|            | 8:15    | 107,962 | 107,978 | 16,17 | 1,09 |
|            | 8:30    | 103,743 | 103,761 | 17,24 | 1,16 |
|            | 8:45    | 105,162 | 105,186 | 23,30 | 1,57 |
|            | 9:00    | 101,162 | 101,188 | 25,68 | 1,73 |
| 9:15       | 106,362 | 106,380 | 17,81   | 1,20  |      |
| 9:30       | 103,162 | 103,181 | 18,34   | 1,24  |      |
| 9:45       | 101,562 | 101,579 | 16,66   | 1,12  |      |

|            |       |         |         |       |      |
|------------|-------|---------|---------|-------|------|
|            | 10:00 | 103,162 | 103,181 | 18,76 | 1,26 |
|            | 10:15 | 109,343 | 109,373 | 29,95 | 2,02 |
|            | 10:30 | 112,762 | 112,790 | 27,33 | 1,84 |
|            | 10:45 | 112,943 | 112,959 | 16,01 | 1,08 |
|            | 11:00 | 105,962 | 105,994 | 31,55 | 2,13 |
|            | 11:15 | 107,962 | 107,974 | 11,70 | 0,79 |
|            | 11:30 | 110,543 | 110,569 | 25,14 | 1,69 |
|            | 11:45 | 106,762 | 106,790 | 27,25 | 1,84 |
|            | 12:00 | 110,362 | 110,373 | 10,84 | 0,73 |
|            | 12:15 | 110,143 | 110,172 | 28,96 | 1,95 |
|            | 12:30 | 108,362 | 108,386 | 24,03 | 1,62 |
|            | 12:45 | 108,143 | 108,164 | 20,95 | 1,41 |
|            | 13:00 | 108,943 | 108,969 | 25,40 | 1,71 |
|            | 13:15 | 111,162 | 111,192 | 29,77 | 2,01 |
|            | 13:30 | 109,162 | 109,185 | 22,48 | 1,51 |
|            | 13:45 | 109,743 | 109,764 | 20,16 | 1,36 |
|            | 14:00 | 114,362 | 114,389 | 26,97 | 1,82 |
|            | 14:15 | 111,743 | 111,771 | 27,49 | 1,85 |
|            | 14:30 | 113,162 | 113,180 | 17,55 | 1,18 |
|            | 14:45 | 110,543 | 110,561 | 17,58 | 1,18 |
|            | 15:00 | 113,162 | 113,180 | 17,55 | 1,18 |
|            | 15:15 | 104,362 | 104,374 | 11,37 | 0,77 |
|            | 15:30 | 106,543 | 106,569 | 25,55 | 1,72 |
|            | 15:45 | 109,162 | 109,186 | 23,46 | 1,58 |
|            | 16:00 | 113,343 | 113,379 | 35,14 | 2,37 |
|            | 16:15 | 105,781 | 105,802 | 20,45 | 1,38 |
|            | 16:30 | 109,743 | 109,767 | 23,35 | 1,57 |
|            | 16:45 | 106,943 | 106,956 | 13,01 | 0,88 |
|            | 17:00 | 110,581 | 110,610 | 28,72 | 1,94 |
|            | 17:15 | 104,143 | 104,157 | 13,87 | 0,93 |
|            | 17:30 | 103,162 | 103,195 | 32,27 | 2,17 |
|            | 17:45 | 100,762 | 100,788 | 26,23 | 1,77 |
|            | 18:00 | 101,162 | 101,190 | 27,39 | 1,85 |
|            | 18:15 | 103,162 | 103,193 | 31,11 | 2,10 |
|            | 18:30 | 103,962 | 103,987 | 25,04 | 1,69 |
|            | 18:45 | 101,962 | 101,988 | 25,74 | 1,73 |
|            | 19:00 | 97,962  | 97,991  | 28,44 | 1,92 |
|            | 19:15 | 104,362 | 104,379 | 16,90 | 1,14 |
|            | 19:30 | 104,181 | 104,206 | 25,32 | 1,71 |
|            | 19:45 | 92,762  | 92,791  | 28,68 | 1,93 |
|            | 20:00 | 81,781  | 81,798  | 17,08 | 1,15 |
|            | 20:15 | 75,162  | 75,176  | 14,08 | 0,95 |
|            | 20:30 | 74,000  | 74,010  | 9,85  | 0,66 |
|            | 20:45 | 68,581  | 68,610  | 28,96 | 1,95 |
|            | 21:00 | 66,981  | 66,999  | 17,79 | 1,20 |
|            | 21:15 | 72,181  | 72,193  | 11,39 | 0,77 |
|            | 21:30 | 72,981  | 72,996  | 14,70 | 0,99 |
|            | 21:45 | 76,762  | 76,782  | 19,68 | 1,33 |
|            | 22:00 | 78,581  | 78,610  | 28,68 | 1,93 |
|            | 22:15 | 73,781  | 73,809  | 27,69 | 1,87 |
|            | 22:30 | 74,981  | 74,994  | 13,19 | 0,89 |
|            | 22:45 | 73,781  | 73,808  | 27,32 | 1,84 |
|            | 23:00 | 78,762  | 78,776  | 13,61 | 0,92 |
|            | 23:15 | 70,581  | 70,588  | 7,00  | 0,47 |
|            | 23:30 | 63,600  | 63,616  | 15,63 | 1,05 |
|            | 23:45 | 66,981  | 67,002  | 21,36 | 1,44 |
|            | 0:00  | 61,381  | 61,405  | 24,14 | 1,63 |
| 16.7.2015. | 0:15  | 60,181  | 60,186  | 4,68  | 0,30 |
|            | 0:30  | 59,381  | 59,390  | 8,83  | 0,57 |
|            | 0:45  | 60,400  | 60,403  | 2,90  | 0,19 |
|            | 1:00  | 58,581  | 58,589  | 7,89  | 0,51 |
|            | 1:15  | 57,381  | 57,387  | 6,34  | 0,41 |
|            | 1:30  | 58,181  | 58,205  | 24,32 | 1,57 |

|       |         |         |       |      |
|-------|---------|---------|-------|------|
| 1:45  | 60,000  | 60,026  | 26,08 | 1,68 |
| 2:00  | 54,800  | 54,817  | 16,86 | 1,08 |
| 2:15  | 58,181  | 58,201  | 19,69 | 1,27 |
| 2:30  | 59,381  | 59,406  | 24,93 | 1,60 |
| 2:45  | 60,581  | 60,599  | 17,73 | 1,14 |
| 3:00  | 59,381  | 59,406  | 24,86 | 1,60 |
| 3:15  | 64,181  | 64,199  | 17,53 | 1,13 |
| 3:30  | 58,981  | 58,985  | 4,06  | 0,26 |
| 3:45  | 55,200  | 55,212  | 12,45 | 0,80 |
| 4:00  | 60,981  | 60,999  | 18,00 | 1,16 |
| 4:15  | 59,381  | 59,398  | 16,91 | 1,09 |
| 4:30  | 57,200  | 57,215  | 14,62 | 0,94 |
| 4:45  | 58,762  | 58,783  | 21,05 | 1,35 |
| 5:00  | 57,200  | 57,212  | 12,31 | 0,79 |
| 5:15  | 62,981  | 62,986  | 5,18  | 0,33 |
| 5:30  | 57,381  | 57,408  | 26,91 | 1,73 |
| 5:45  | 54,800  | 54,824  | 23,59 | 1,52 |
| 6:00  | 56,581  | 56,597  | 15,87 | 1,02 |
| 6:15  | 65,600  | 65,626  | 25,56 | 1,64 |
| 6:30  | 64,581  | 64,608  | 26,60 | 1,71 |
| 6:45  | 73,962  | 73,982  | 19,26 | 1,24 |
| 7:00  | 81,381  | 81,401  | 19,83 | 1,28 |
| 7:15  | 98,543  | 98,556  | 12,15 | 0,78 |
| 7:30  | 102,762 | 102,792 | 30,14 | 1,94 |
| 7:45  | 94,981  | 94,996  | 14,58 | 0,94 |
| 8:00  | 99,962  | 99,975  | 13,14 | 0,85 |
| 8:15  | 108,362 | 108,376 | 13,32 | 0,86 |
| 8:30  | 103,162 | 103,177 | 15,01 | 0,97 |
| 8:45  | 105,743 | 105,769 | 25,72 | 1,66 |
| 9:00  | 105,562 | 105,574 | 11,31 | 0,73 |
| 9:15  | 106,543 | 106,559 | 15,86 | 1,02 |
| 9:30  | 105,962 | 105,989 | 26,62 | 1,71 |
| 9:45  | 105,162 | 105,193 | 30,41 | 1,96 |
| 10:00 | 106,543 | 106,556 | 12,20 | 0,79 |
| 10:15 | 106,762 | 106,783 | 20,42 | 1,31 |
| 10:30 | 106,762 | 106,773 | 10,31 | 0,66 |
| 10:45 | 104,543 | 104,561 | 17,95 | 1,16 |
| 11:00 | 105,162 | 105,192 | 29,94 | 1,93 |
| 11:15 | 106,143 | 106,149 | 5,88  | 0,38 |
| 11:30 | 109,962 | 109,989 | 26,67 | 1,72 |
| 11:45 | 113,343 | 113,373 | 29,29 | 1,88 |
| 12:00 | 116,362 | 116,396 | 34,23 | 2,20 |
| 12:15 | 113,743 | 113,755 | 11,54 | 0,74 |
| 12:30 | 109,343 | 109,361 | 17,95 | 1,16 |
| 12:45 | 109,743 | 109,770 | 26,20 | 1,69 |
| 13:00 | 112,362 | 112,382 | 20,10 | 1,29 |
| 13:15 | 111,343 | 111,364 | 20,55 | 1,32 |
| 13:30 | 113,562 | 113,591 | 28,99 | 1,87 |
| 13:45 | 113,562 | 113,592 | 29,36 | 1,89 |
| 14:00 | 108,943 | 108,953 | 9,69  | 0,62 |
| 14:15 | 113,743 | 113,769 | 25,95 | 1,67 |
| 14:30 | 111,962 | 111,982 | 20,21 | 1,30 |
| 14:45 | 114,543 | 114,573 | 29,88 | 1,92 |
| 15:00 | 110,762 | 110,788 | 25,96 | 1,67 |
| 15:15 | 106,725 | 106,754 | 29,85 | 1,92 |
| 15:30 | 115,162 | 115,191 | 29,18 | 1,88 |
| 15:45 | 116,543 | 116,566 | 22,26 | 1,43 |
| 16:00 | 114,362 | 114,388 | 25,50 | 1,64 |
| 16:15 | 119,743 | 119,755 | 11,57 | 0,74 |
| 16:30 | 119,525 | 119,550 | 25,22 | 1,62 |
| 16:45 | 120,362 | 120,397 | 34,80 | 2,24 |
| 17:00 | 116,543 | 116,559 | 15,84 | 1,02 |
| 17:15 | 109,343 | 109,355 | 11,27 | 0,72 |



|            |         |         |         |       |      |
|------------|---------|---------|---------|-------|------|
|            | 17:30   | 110,762 | 110,790 | 27,47 | 1,77 |
|            | 17:45   | 110,762 | 110,790 | 27,79 | 1,79 |
|            | 18:00   | 105,562 | 105,581 | 18,76 | 1,21 |
|            | 18:15   | 95,743  | 95,764  | 20,29 | 1,31 |
|            | 18:30   | 97,781  | 97,800  | 18,91 | 1,22 |
|            | 18:45   | 99,743  | 99,759  | 15,12 | 0,97 |
|            | 19:00   | 98,581  | 98,611  | 30,25 | 1,95 |
|            | 19:15   | 97,562  | 97,576  | 13,66 | 0,88 |
|            | 19:30   | 97,562  | 97,573  | 10,96 | 0,71 |
|            | 19:45   | 97,962  | 97,980  | 17,89 | 1,15 |
|            | 20:00   | 81,381  | 81,409  | 27,99 | 1,80 |
|            | 20:15   | 74,181  | 74,205  | 23,66 | 1,52 |
|            | 20:30   | 71,781  | 71,797  | 16,03 | 1,03 |
|            | 20:45   | 71,781  | 71,811  | 29,48 | 1,90 |
|            | 21:00   | 69,600  | 69,626  | 26,07 | 1,68 |
|            | 21:15   | 69,562  | 69,586  | 24,09 | 1,55 |
|            | 21:30   | 72,981  | 72,993  | 11,44 | 0,74 |
|            | 21:45   | 68,981  | 68,998  | 16,93 | 1,09 |
|            | 22:00   | 69,381  | 69,390  | 8,74  | 0,56 |
|            | 22:15   | 63,600  | 63,623  | 22,59 | 1,45 |
|            | 22:30   | 58,181  | 58,202  | 20,96 | 1,35 |
|            | 22:45   | 70,762  | 70,784  | 21,68 | 1,39 |
|            | 23:00   | 62,000  | 62,020  | 19,80 | 1,27 |
|            | 23:15   | 53,200  | 53,207  | 7,32  | 0,47 |
|            | 23:30   | 52,981  | 52,990  | 8,41  | 0,54 |
|            | 23:45   | 60,581  | 60,606  | 24,86 | 1,60 |
|            | 0:00    | 53,781  | 53,792  | 10,37 | 0,67 |
| 17.7.2015. | 0:15    | 67,781  | 67,797  | 16,24 | 1,19 |
|            | 0:30    | 71,200  | 71,208  | 8,03  | 0,59 |
|            | 0:45    | 69,562  | 69,579  | 16,80 | 1,23 |
|            | 1:00    | 70,800  | 70,821  | 21,24 | 1,56 |
|            | 1:15    | 73,781  | 73,798  | 16,67 | 1,22 |
|            | 1:30    | 73,381  | 73,384  | 3,36  | 0,25 |
|            | 1:45    | 75,562  | 75,581  | 18,73 | 1,37 |
|            | 2:00    | 72,800  | 72,826  | 26,45 | 1,94 |
|            | 2:15    | 77,562  | 77,581  | 19,16 | 1,40 |
|            | 2:30    | 75,381  | 75,403  | 21,69 | 1,59 |
|            | 2:45    | 78,981  | 78,992  | 11,24 | 0,82 |
|            | 3:00    | 78,762  | 78,777  | 14,53 | 1,06 |
|            | 3:15    | 85,381  | 85,390  | 8,65  | 0,63 |
|            | 3:30    | 84,181  | 84,200  | 18,39 | 1,35 |
|            | 3:45    | 83,562  | 83,578  | 15,92 | 1,17 |
|            | 4:00    | 79,381  | 79,406  | 24,83 | 1,82 |
|            | 4:15    | 84,581  | 84,612  | 30,54 | 2,24 |
|            | 4:30    | 86,362  | 86,380  | 18,09 | 1,33 |
|            | 4:45    | 82,581  | 82,615  | 34,07 | 2,50 |
|            | 5:00    | 83,162  | 83,172  | 9,26  | 0,68 |
|            | 5:15    | 86,981  | 87,006  | 25,02 | 1,83 |
|            | 5:30    | 81,781  | 81,798  | 16,52 | 1,21 |
|            | 5:45    | 73,781  | 73,797  | 16,02 | 1,17 |
|            | 6:00    | 72,181  | 72,199  | 18,24 | 1,34 |
|            | 6:15    | 90,362  | 90,390  | 28,01 | 2,05 |
|            | 6:30    | 102,762 | 102,782 | 19,84 | 1,45 |
|            | 6:45    | 105,962 | 105,991 | 28,84 | 2,11 |
|            | 7:00    | 101,962 | 101,980 | 18,17 | 1,33 |
|            | 7:15    | 104,362 | 104,378 | 15,44 | 1,13 |
|            | 7:30    | 118,943 | 118,959 | 15,34 | 1,12 |
|            | 7:45    | 114,543 | 114,576 | 32,86 | 2,41 |
|            | 8:00    | 116,762 | 116,792 | 29,58 | 2,17 |
|            | 8:15    | 118,762 | 118,779 | 16,25 | 1,19 |
| 8:30       | 117,525 | 117,543 | 18,36   | 1,35  |      |
| 8:45       | 117,562 | 117,588 | 25,57   | 1,87  |      |
| 9:00       | 114,943 | 114,952 | 8,49    | 0,62  |      |

|            |       |         |         |       |      |
|------------|-------|---------|---------|-------|------|
|            | 9:15  | 122,725 | 122,746 | 21,74 | 1,59 |
|            | 9:30  | 120,762 | 120,776 | 13,79 | 1,01 |
|            | 9:45  | 118,943 | 118,956 | 12,23 | 0,90 |
|            | 10:00 | 116,362 | 116,379 | 16,67 | 1,22 |
|            | 10:15 | 116,943 | 116,952 | 8,17  | 0,60 |
|            | 10:30 | 117,925 | 117,954 | 29,81 | 2,18 |
|            | 10:45 | 118,762 | 118,773 | 10,34 | 0,76 |
|            | 11:00 | 120,943 | 120,957 | 13,32 | 0,98 |
|            | 11:15 | 122,943 | 122,958 | 15,00 | 1,10 |
|            | 11:30 | 123,743 | 123,763 | 19,49 | 1,43 |
|            | 11:45 | 122,543 | 122,575 | 31,22 | 2,29 |
|            | 12:00 | 118,143 | 118,151 | 7,55  | 0,55 |
|            | 12:15 | 112,143 | 112,157 | 13,58 | 0,99 |
|            | 12:30 | 120,943 | 120,957 | 14,08 | 1,03 |
|            | 12:45 | 125,343 | 125,373 | 29,52 | 2,16 |
|            | 13:00 | 124,143 | 124,166 | 22,70 | 1,66 |
|            | 13:15 | 131,125 | 131,149 | 24,07 | 1,76 |
|            | 13:30 | 130,143 | 130,160 | 16,75 | 1,23 |
|            | 13:45 | 134,725 | 134,738 | 13,53 | 0,99 |
|            | 14:00 | 134,325 | 134,339 | 14,11 | 1,03 |
|            | 14:15 | 144,725 | 144,738 | 13,81 | 1,01 |
|            | 14:30 | 141,306 | 141,318 | 12,81 | 0,94 |
|            | 14:45 | 141,743 | 141,756 | 12,57 | 0,92 |
|            | 15:00 | 141,706 | 141,740 | 34,20 | 2,51 |
|            | 15:15 | 133,743 | 133,750 | 6,41  | 0,47 |
|            | 15:30 | 127,925 | 127,956 | 31,02 | 2,27 |
|            | 15:45 | 128,943 | 128,968 | 24,23 | 1,77 |
|            | 16:00 | 127,925 | 127,953 | 28,83 | 2,11 |
|            | 16:15 | 126,943 | 126,954 | 10,50 | 0,77 |
|            | 16:30 | 128,325 | 128,339 | 13,98 | 1,02 |
|            | 16:45 | 130,143 | 130,152 | 8,57  | 0,63 |
|            | 17:00 | 141,525 | 141,543 | 18,56 | 1,36 |
|            | 17:15 | 147,125 | 147,136 | 11,48 | 0,84 |
|            | 17:30 | 146,106 | 146,117 | 11,27 | 0,83 |
|            | 17:45 | 146,325 | 146,335 | 10,97 | 0,80 |
|            | 18:00 | 147,306 | 147,317 | 11,48 | 0,84 |
|            | 18:15 | 141,525 | 141,552 | 27,57 | 2,02 |
|            | 18:30 | 148,106 | 148,133 | 27,05 | 1,98 |
|            | 18:45 | 137,525 | 137,554 | 29,49 | 2,16 |
|            | 19:00 | 135,343 | 135,351 | 7,95  | 0,58 |
|            | 19:15 | 120,543 | 120,556 | 12,44 | 0,91 |
|            | 19:30 | 110,762 | 110,779 | 16,48 | 1,21 |
|            | 19:45 | 108,762 | 108,774 | 11,40 | 0,83 |
|            | 20:00 | 110,143 | 110,173 | 29,64 | 2,17 |
|            | 20:15 | 106,543 | 106,572 | 28,76 | 2,11 |
|            | 20:30 | 108,762 | 108,785 | 22,41 | 1,64 |
|            | 20:45 | 108,181 | 108,208 | 27,29 | 2,00 |
|            | 21:00 | 108,943 | 108,956 | 13,01 | 0,95 |
|            | 21:15 | 105,562 | 105,582 | 20,07 | 1,47 |
|            | 21:30 | 106,762 | 106,783 | 21,13 | 1,55 |
|            | 21:45 | 105,162 | 105,184 | 22,18 | 1,62 |
|            | 22:00 | 99,962  | 99,989  | 26,34 | 1,93 |
|            | 22:15 | 85,562  | 85,591  | 28,92 | 2,12 |
|            | 22:30 | 86,981  | 87,006  | 25,31 | 1,85 |
|            | 22:45 | 88,981  | 89,003  | 21,73 | 1,59 |
|            | 23:00 | 85,962  | 85,994  | 31,92 | 2,34 |
|            | 23:15 | 83,962  | 83,992  | 29,82 | 2,18 |
|            | 23:30 | 79,781  | 79,797  | 16,13 | 1,18 |
|            | 23:45 | 79,562  | 79,593  | 30,83 | 2,26 |
|            | 0:00  | 78,000  | 78,027  | 26,53 | 1,94 |
| 18.7.2015. | 0:15  | 61,162  | 61,182  | 19,44 | 1,16 |
|            | 0:30  | 66,000  | 66,011  | 11,16 | 0,67 |
|            | 0:45  | 65,381  | 65,400  | 18,68 | 1,12 |

|       |        |        |       |      |
|-------|--------|--------|-------|------|
| 1:00  | 67,381 | 67,394 | 12,54 | 0,75 |
| 1:15  | 70,581 | 70,594 | 12,77 | 0,76 |
| 1:30  | 64,181 | 64,193 | 11,49 | 0,69 |
| 1:45  | 62,981 | 62,992 | 11,14 | 0,67 |
| 2:00  | 65,200 | 65,230 | 30,09 | 1,80 |
| 2:15  | 66,981 | 67,001 | 19,58 | 1,17 |
| 2:30  | 60,181 | 60,208 | 26,92 | 1,61 |
| 2:45  | 66,400 | 66,408 | 8,16  | 0,49 |
| 3:00  | 60,362 | 60,371 | 9,18  | 0,55 |
| 3:15  | 65,781 | 65,790 | 9,00  | 0,54 |
| 3:30  | 64,800 | 64,827 | 26,66 | 1,59 |
| 3:45  | 65,781 | 65,796 | 14,96 | 0,89 |
| 4:00  | 65,781 | 65,802 | 21,36 | 1,28 |
| 4:15  | 68,981 | 68,998 | 16,40 | 0,98 |
| 4:30  | 66,181 | 66,189 | 8,11  | 0,48 |
| 4:45  | 64,981 | 65,000 | 19,36 | 1,16 |
| 5:00  | 64,000 | 64,005 | 4,69  | 0,28 |
| 5:15  | 65,962 | 65,974 | 11,67 | 0,70 |
| 5:30  | 73,381 | 73,408 | 26,81 | 1,60 |
| 5:45  | 67,781 | 67,784 | 3,29  | 0,20 |
| 6:00  | 64,800 | 64,823 | 23,46 | 1,40 |
| 6:15  | 72,581 | 72,588 | 7,00  | 0,42 |
| 6:30  | 72,981 | 72,996 | 14,39 | 0,86 |
| 6:45  | 71,562 | 71,576 | 13,92 | 0,83 |
| 7:00  | 63,600 | 63,606 | 5,80  | 0,35 |
| 7:15  | 76,981 | 76,995 | 13,62 | 0,81 |
| 7:30  | 77,162 | 77,180 | 17,44 | 1,04 |
| 7:45  | 70,800 | 70,822 | 22,48 | 1,34 |
| 8:00  | 70,581 | 70,604 | 22,42 | 1,34 |
| 8:15  | 78,362 | 78,392 | 30,22 | 1,80 |
| 8:30  | 78,981 | 79,003 | 21,50 | 1,28 |
| 8:45  | 77,381 | 77,401 | 19,96 | 1,19 |
| 9:00  | 77,781 | 77,799 | 17,77 | 1,06 |
| 9:15  | 77,162 | 77,187 | 25,00 | 1,49 |
| 9:30  | 78,981 | 78,994 | 12,78 | 0,76 |
| 9:45  | 79,381 | 79,402 | 21,26 | 1,27 |
| 10:00 | 83,562 | 83,573 | 10,58 | 0,63 |
| 10:15 | 85,781 | 85,792 | 10,78 | 0,64 |
| 10:30 | 81,781 | 81,786 | 5,30  | 0,32 |
| 10:45 | 82,581 | 82,593 | 11,58 | 0,69 |
| 11:00 | 81,562 | 81,567 | 5,23  | 0,31 |
| 11:15 | 81,381 | 81,409 | 27,57 | 1,65 |
| 11:30 | 84,981 | 84,997 | 15,93 | 0,95 |
| 11:45 | 79,962 | 79,973 | 11,11 | 0,66 |
| 12:00 | 81,562 | 81,582 | 20,21 | 1,21 |
| 12:15 | 87,381 | 87,412 | 31,25 | 1,87 |
| 12:30 | 78,581 | 78,608 | 26,82 | 1,60 |
| 12:45 | 85,381 | 85,390 | 9,36  | 0,56 |
| 13:00 | 83,962 | 83,971 | 8,31  | 0,50 |
| 13:15 | 91,162 | 91,167 | 5,03  | 0,30 |
| 13:30 | 85,562 | 85,580 | 18,16 | 1,08 |
| 13:45 | 88,981 | 88,992 | 10,66 | 0,64 |
| 14:00 | 88,762 | 88,785 | 23,03 | 1,38 |
| 14:15 | 89,962 | 89,969 | 6,72  | 0,40 |
| 14:30 | 88,981 | 89,009 | 27,91 | 1,67 |
| 14:45 | 87,962 | 87,986 | 23,41 | 1,40 |
| 15:00 | 88,181 | 88,197 | 15,39 | 0,92 |
| 15:15 | 83,162 | 83,181 | 18,64 | 1,11 |
| 15:30 | 85,381 | 85,410 | 28,98 | 1,73 |
| 15:45 | 84,181 | 84,200 | 18,39 | 1,10 |
| 16:00 | 84,762 | 84,784 | 21,43 | 1,28 |
| 16:15 | 83,381 | 83,400 | 18,63 | 1,11 |
| 16:30 | 75,962 | 75,992 | 30,22 | 1,80 |

|            |        |        |        |       |       |
|------------|--------|--------|--------|-------|-------|
|            | 16:45  | 80,981 | 80,985 | 3,67  | 0,22  |
|            | 17:00  | 79,381 | 79,412 | 30,61 | 1,83  |
|            | 17:15  | 69,781 | 69,801 | 19,68 | 1,18  |
|            | 17:30  | 76,581 | 76,607 | 25,64 | 1,53  |
|            | 17:45  | 78,762 | 78,784 | 21,60 | 1,29  |
|            | 18:00  | 79,200 | 79,231 | 31,26 | 1,87  |
|            | 18:15  | 73,162 | 73,177 | 14,46 | 0,86  |
|            | 18:30  | 71,781 | 71,806 | 25,37 | 1,51  |
|            | 18:45  | 73,200 | 73,215 | 14,60 | 0,87  |
|            | 19:00  | 75,962 | 75,981 | 18,52 | 1,11  |
|            | 19:15  | 86,981 | 87,000 | 18,99 | 1,13  |
|            | 19:30  | 84,362 | 84,375 | 12,95 | 0,77  |
|            | 19:45  | 77,200 | 77,203 | 2,69  | 0,16  |
|            | 20:00  | 77,562 | 77,582 | 19,39 | 1,16  |
|            | 20:15  | 76,581 | 76,591 | 9,98  | 0,60  |
|            | 20:30  | 72,762 | 72,783 | 20,38 | 1,22  |
|            | 20:45  | 76,800 | 76,808 | 8,48  | 0,51  |
|            | 21:00  | 76,581 | 76,605 | 24,31 | 1,45  |
|            | 21:15  | 79,562 | 79,587 | 24,31 | 1,45  |
|            | 21:30  | 79,381 | 79,402 | 20,42 | 1,22  |
|            | 21:45  | 83,781 | 83,800 | 18,82 | 1,12  |
|            | 22:00  | 80,981 | 80,996 | 14,75 | 0,88  |
|            | 22:15  | 68,362 | 68,383 | 20,63 | 1,23  |
|            | 22:30  | 69,381 | 69,398 | 17,07 | 1,02  |
|            | 22:45  | 76,800 | 76,813 | 12,91 | 0,77  |
|            | 23:00  | 70,981 | 70,993 | 12,17 | 0,73  |
|            | 23:15  | 65,781 | 65,788 | 6,53  | 0,39  |
|            | 23:30  | 58,181 | 58,180 | -0,64 | -0,04 |
|            | 23:45  | 57,781 | 57,799 | 18,36 | 1,10  |
|            | 0:00   | 58,400 | 58,412 | 12,03 | 0,72  |
| 19.7.2015. | 0:15   | 62,581 | 62,602 | 21,19 | 1,15  |
|            | 0:30   | 62,181 | 62,193 | 11,53 | 0,63  |
|            | 0:45   | 61,381 | 61,398 | 16,86 | 0,92  |
|            | 1:00   | 59,600 | 59,620 | 19,57 | 1,06  |
|            | 1:15   | 56,181 | 56,192 | 10,53 | 0,57  |
|            | 1:30   | 55,381 | 55,408 | 27,01 | 1,47  |
|            | 1:45   | 49,781 | 49,809 | 28,05 | 1,52  |
|            | 2:00   | 50,800 | 50,819 | 18,74 | 1,02  |
|            | 2:15   | 48,800 | 48,807 | 6,92  | 0,38  |
|            | 2:30   | 44,581 | 44,589 | 8,33  | 0,45  |
|            | 2:45   | 43,200 | 43,211 | 10,57 | 0,57  |
|            | 3:00   | 43,381 | 43,405 | 23,38 | 1,27  |
|            | 3:15   | 48,000 | 48,018 | 18,35 | 1,00  |
|            | 3:30   | 48,181 | 48,187 | 5,84  | 0,32  |
|            | 3:45   | 46,000 | 46,019 | 19,37 | 1,05  |
|            | 4:00   | 43,781 | 43,806 | 24,71 | 1,34  |
|            | 4:15   | 45,600 | 45,620 | 20,34 | 1,10  |
|            | 4:30   | 45,781 | 45,803 | 21,51 | 1,17  |
|            | 4:45   | 48,800 | 48,821 | 20,58 | 1,12  |
|            | 5:00   | 49,200 | 49,213 | 12,69 | 0,69  |
|            | 5:15   | 63,162 | 63,169 | 6,90  | 0,37  |
|            | 5:30   | 51,600 | 51,615 | 14,60 | 0,79  |
|            | 5:45   | 51,381 | 51,400 | 18,85 | 1,02  |
|            | 6:00   | 51,200 | 51,219 | 18,86 | 1,02  |
|            | 6:15   | 65,381 | 65,393 | 11,86 | 0,64  |
|            | 6:30   | 61,781 | 61,801 | 19,83 | 1,08  |
|            | 6:45   | 66,581 | 66,598 | 16,84 | 0,91  |
|            | 7:00   | 60,581 | 60,611 | 29,86 | 1,62  |
|            | 7:15   | 72,981 | 72,992 | 10,51 | 0,57  |
|            | 7:30   | 72,181 | 72,206 | 24,74 | 1,34  |
| 7:45       | 67,200 | 67,219 | 18,58  | 1,01  |       |
| 8:00       | 67,781 | 67,793 | 12,09  | 0,66  |       |
| 8:15       | 77,381 | 77,398 | 17,23  | 0,94  |       |

|       |        |        |       |      |
|-------|--------|--------|-------|------|
| 8:30  | 71,962 | 71,976 | 13,84 | 0,75 |
| 8:45  | 72,400 | 72,411 | 10,52 | 0,57 |
| 9:00  | 71,162 | 71,183 | 21,15 | 1,15 |
| 9:15  | 67,381 | 67,401 | 20,36 | 1,11 |
| 9:30  | 67,381 | 67,408 | 26,60 | 1,44 |
| 9:45  | 66,800 | 66,816 | 16,30 | 0,89 |
| 10:00 | 65,562 | 65,587 | 24,66 | 1,34 |
| 10:15 | 70,981 | 71,002 | 20,73 | 1,13 |
| 10:30 | 70,000 | 70,015 | 14,86 | 0,81 |
| 10:45 | 73,781 | 73,795 | 14,17 | 0,77 |
| 11:00 | 68,981 | 68,999 | 17,82 | 0,97 |
| 11:15 | 72,362 | 72,384 | 22,15 | 1,20 |
| 11:30 | 74,400 | 74,419 | 18,67 | 1,01 |
| 11:45 | 71,562 | 71,585 | 22,24 | 1,21 |
| 12:00 | 70,581 | 70,602 | 20,67 | 1,12 |
| 12:15 | 74,981 | 74,998 | 17,29 | 0,94 |
| 12:30 | 72,400 | 72,427 | 26,82 | 1,46 |
| 12:45 | 67,962 | 67,976 | 13,54 | 0,73 |
| 13:00 | 70,581 | 70,588 | 7,00  | 0,38 |
| 13:15 | 67,781 | 67,783 | 1,40  | 0,08 |
| 13:30 | 68,581 | 68,606 | 24,93 | 1,35 |
| 13:45 | 68,181 | 68,203 | 22,13 | 1,20 |
| 14:00 | 64,981 | 65,000 | 18,73 | 1,02 |
| 14:15 | 67,381 | 67,408 | 27,01 | 1,47 |
| 14:30 | 67,200 | 67,208 | 8,39  | 0,46 |
| 14:45 | 66,762 | 66,781 | 19,15 | 1,04 |
| 15:00 | 73,200 | 73,223 | 22,98 | 1,25 |
| 15:15 | 73,162 | 73,173 | 10,75 | 0,58 |
| 15:30 | 73,781 | 73,814 | 32,61 | 1,77 |
| 15:45 | 71,781 | 71,789 | 7,45  | 0,40 |
| 16:00 | 68,181 | 68,195 | 13,97 | 0,76 |
| 16:15 | 66,181 | 66,204 | 22,71 | 1,23 |
| 16:30 | 68,581 | 68,609 | 27,98 | 1,52 |
| 16:45 | 71,781 | 71,789 | 7,92  | 0,43 |
| 17:00 | 71,781 | 71,797 | 15,48 | 0,84 |
| 17:15 | 72,581 | 72,604 | 23,21 | 1,26 |
| 17:30 | 73,781 | 73,806 | 25,18 | 1,37 |
| 17:45 | 73,781 | 73,796 | 14,69 | 0,80 |
| 18:00 | 73,381 | 73,407 | 26,10 | 1,42 |
| 18:15 | 73,962 | 73,970 | 7,99  | 0,43 |
| 18:30 | 76,800 | 76,810 | 10,05 | 0,55 |
| 18:45 | 77,562 | 77,576 | 14,14 | 0,77 |
| 19:00 | 77,381 | 77,402 | 20,39 | 1,11 |
| 19:15 | 70,000 | 70,032 | 32,31 | 1,75 |
| 19:30 | 73,162 | 73,186 | 24,12 | 1,31 |
| 19:45 | 73,200 | 73,231 | 30,64 | 1,66 |
| 20:00 | 71,962 | 71,978 | 15,78 | 0,86 |
| 20:15 | 75,381 | 75,392 | 11,17 | 0,61 |
| 20:30 | 72,400 | 72,427 | 27,19 | 1,48 |
| 20:45 | 73,962 | 73,990 | 27,35 | 1,48 |
| 21:00 | 76,181 | 76,195 | 13,78 | 0,75 |
| 21:15 | 70,981 | 71,007 | 25,84 | 1,40 |
| 21:30 | 74,981 | 75,009 | 27,93 | 1,52 |
| 21:45 | 78,762 | 78,787 | 24,88 | 1,35 |
| 22:00 | 74,800 | 74,819 | 18,95 | 1,03 |
| 22:15 | 65,781 | 65,803 | 21,67 | 1,18 |
| 22:30 | 70,981 | 71,004 | 23,30 | 1,26 |
| 22:45 | 68,981 | 69,001 | 20,07 | 1,09 |
| 23:00 | 64,981 | 64,998 | 17,28 | 0,94 |
| 23:15 | 58,581 | 58,596 | 14,77 | 0,80 |
| 23:30 | 56,400 | 56,406 | 5,75  | 0,31 |
| 23:45 | 61,381 | 61,401 | 19,51 | 1,06 |
| 0:00  | 55,600 | 55,627 | 27,28 | 1,48 |

|            |        |        |        |       |      |
|------------|--------|--------|--------|-------|------|
| 20.7.2015. | 0:15   | 58,581 | 58,598 | 16,48 | 1,15 |
|            | 0:30   | 59,962 | 59,968 | 5,27  | 0,37 |
|            | 0:45   | 56,000 | 56,005 | 4,84  | 0,34 |
|            | 1:00   | 59,600 | 59,619 | 19,20 | 1,34 |
|            | 1:15   | 60,181 | 60,195 | 14,06 | 0,98 |
|            | 1:30   | 61,781 | 61,789 | 8,15  | 0,57 |
|            | 1:45   | 66,581 | 66,607 | 26,00 | 1,82 |
|            | 2:00   | 64,181 | 64,191 | 9,78  | 0,68 |
|            | 2:15   | 63,600 | 63,632 | 32,12 | 2,24 |
|            | 2:30   | 57,781 | 57,795 | 13,57 | 0,95 |
|            | 2:45   | 57,381 | 57,389 | 7,93  | 0,55 |
|            | 3:00   | 58,000 | 58,011 | 10,57 | 0,74 |
|            | 3:15   | 60,981 | 60,994 | 13,08 | 0,91 |
|            | 3:30   | 62,181 | 62,208 | 26,70 | 1,87 |
|            | 3:45   | 59,781 | 59,787 | 5,74  | 0,40 |
|            | 4:00   | 57,781 | 57,791 | 9,52  | 0,67 |
|            | 4:15   | 60,400 | 60,416 | 15,68 | 1,10 |
|            | 4:30   | 60,981 | 60,998 | 17,05 | 1,19 |
|            | 4:45   | 62,800 | 62,812 | 12,25 | 0,86 |
|            | 5:00   | 58,762 | 58,778 | 15,97 | 1,12 |
|            | 5:15   | 66,000 | 66,024 | 24,26 | 1,69 |
|            | 5:30   | 62,581 | 62,609 | 28,28 | 1,98 |
|            | 5:45   | 62,181 | 62,209 | 27,40 | 1,91 |
|            | 6:00   | 56,400 | 56,420 | 20,26 | 1,42 |
|            | 6:15   | 75,381 | 75,396 | 14,51 | 1,01 |
|            | 6:30   | 77,781 | 77,794 | 12,78 | 0,89 |
|            | 6:45   | 81,962 | 81,975 | 13,03 | 0,91 |
|            | 7:00   | 79,562 | 79,570 | 7,35  | 0,51 |
|            | 7:15   | 81,781 | 81,793 | 12,04 | 0,84 |
|            | 7:30   | 82,181 | 82,195 | 14,28 | 1,00 |
|            | 7:45   | 83,381 | 83,402 | 20,84 | 1,46 |
|            | 8:00   | 83,781 | 83,806 | 25,14 | 1,76 |
|            | 8:15   | 91,562 | 91,570 | 7,25  | 0,51 |
|            | 8:30   | 96,762 | 96,780 | 18,05 | 1,26 |
|            | 8:45   | 90,181 | 90,193 | 11,42 | 0,80 |
|            | 9:00   | 92,362 | 92,387 | 25,09 | 1,75 |
|            | 9:15   | 85,562 | 85,577 | 15,10 | 1,06 |
|            | 9:30   | 80,981 | 80,984 | 3,30  | 0,23 |
|            | 9:45   | 84,762 | 84,766 | 3,48  | 0,24 |
|            | 10:00  | 84,981 | 84,992 | 11,06 | 0,77 |
| 10:15      | 88,762 | 88,782 | 19,25  | 1,35  |      |
| 10:30      | 85,781 | 85,797 | 15,88  | 1,11  |      |
| 10:45      | 86,581 | 86,597 | 16,14  | 1,13  |      |
| 11:00      | 86,543 | 86,550 | 6,77   | 0,47  |      |
| 11:15      | 86,581 | 86,610 | 28,99  | 2,03  |      |
| 11:30      | 88,981 | 88,997 | 16,34  | 1,14  |      |
| 11:45      | 88,362 | 88,375 | 12,93  | 0,90  |      |
| 12:00      | 90,362 | 90,371 | 8,39   | 0,59  |      |
| 12:15      | 89,962 | 89,978 | 15,52  | 1,08  |      |
| 12:30      | 86,981 | 86,998 | 16,47  | 1,15  |      |
| 12:45      | 87,343 | 87,355 | 11,36  | 0,79  |      |
| 13:00      | 83,781 | 83,788 | 6,47   | 0,45  |      |
| 13:15      | 83,781 | 83,809 | 27,40  | 1,91  |      |
| 13:30      | 81,781 | 81,797 | 15,60  | 1,09  |      |
| 13:45      | 85,343 | 85,372 | 28,59  | 2,00  |      |
| 14:00      | 85,781 | 85,787 | 6,12   | 0,43  |      |
| 14:15      | 84,362 | 84,382 | 19,83  | 1,39  |      |
| 14:30      | 82,981 | 82,987 | 5,95   | 0,42  |      |
| 14:45      | 83,562 | 83,577 | 15,08  | 1,05  |      |
| 15:00      | 85,381 | 85,383 | 1,87   | 0,13  |      |
| 15:15      | 85,962 | 85,973 | 10,55  | 0,74  |      |
| 15:30      | 84,581 | 84,612 | 31,06  | 2,17  |      |
| 15:45      | 85,781 | 85,807 | 26,29  | 1,84  |      |

|            |        |        |        |       |      |
|------------|--------|--------|--------|-------|------|
|            | 16:00  | 86,943 | 86,961 | 17,18 | 1,20 |
|            | 16:15  | 87,962 | 87,970 | 7,62  | 0,53 |
|            | 16:30  | 82,400 | 82,417 | 16,91 | 1,18 |
|            | 16:45  | 83,962 | 83,969 | 6,55  | 0,46 |
|            | 17:00  | 84,981 | 84,990 | 9,32  | 0,65 |
|            | 17:15  | 85,962 | 85,975 | 13,18 | 0,92 |
|            | 17:30  | 85,381 | 85,404 | 23,00 | 1,61 |
|            | 17:45  | 85,162 | 85,164 | 1,45  | 0,10 |
|            | 18:00  | 85,962 | 85,975 | 13,18 | 0,92 |
|            | 18:15  | 85,381 | 85,406 | 25,00 | 1,75 |
|            | 18:30  | 87,562 | 87,571 | 8,93  | 0,62 |
|            | 18:45  | 87,781 | 87,790 | 8,84  | 0,62 |
|            | 19:00  | 86,362 | 86,378 | 15,71 | 1,10 |
|            | 19:15  | 91,562 | 91,580 | 17,41 | 1,22 |
|            | 19:30  | 90,981 | 91,005 | 24,08 | 1,68 |
|            | 19:45  | 86,762 | 86,780 | 17,84 | 1,25 |
|            | 20:00  | 87,381 | 87,402 | 21,22 | 1,48 |
|            | 20:15  | 85,381 | 85,406 | 25,37 | 1,77 |
|            | 20:30  | 83,962 | 83,985 | 23,17 | 1,62 |
|            | 20:45  | 86,362 | 86,381 | 18,83 | 1,32 |
|            | 21:00  | 87,381 | 87,410 | 28,40 | 1,98 |
|            | 21:15  | 84,762 | 84,788 | 25,26 | 1,76 |
|            | 21:30  | 91,381 | 91,400 | 18,74 | 1,31 |
|            | 21:45  | 92,762 | 92,774 | 11,87 | 0,83 |
|            | 22:00  | 94,362 | 94,374 | 11,42 | 0,80 |
|            | 22:15  | 88,581 | 88,596 | 14,40 | 1,01 |
|            | 22:30  | 91,162 | 91,170 | 7,26  | 0,51 |
|            | 22:45  | 90,181 | 90,201 | 19,60 | 1,37 |
|            | 23:00  | 87,562 | 87,581 | 19,10 | 1,33 |
|            | 23:15  | 92,181 | 92,191 | 9,52  | 0,66 |
|            | 23:30  | 87,962 | 87,972 | 9,83  | 0,69 |
|            | 23:45  | 89,162 | 89,180 | 17,95 | 1,25 |
|            | 0:00   | 86,581 | 86,610 | 28,67 | 2,00 |
| 21.7.2015. | 0:15   | 80,581 | 80,586 | 4,41  | 0,31 |
|            | 0:30   | 78,181 | 78,184 | 3,37  | 0,23 |
|            | 0:45   | 73,781 | 73,811 | 30,32 | 2,11 |
|            | 1:00   | 72,762 | 72,786 | 23,73 | 1,65 |
|            | 1:15   | 67,600 | 67,606 | 6,20  | 0,43 |
|            | 1:30   | 67,781 | 67,806 | 25,19 | 1,75 |
|            | 1:45   | 68,181 | 68,186 | 5,26  | 0,37 |
|            | 2:00   | 66,981 | 66,989 | 7,99  | 0,56 |
|            | 2:15   | 66,181 | 66,193 | 11,88 | 0,83 |
|            | 2:30   | 63,600 | 63,632 | 32,10 | 2,24 |
|            | 2:45   | 64,762 | 64,767 | 4,48  | 0,31 |
|            | 3:00   | 63,600 | 63,632 | 31,73 | 2,21 |
|            | 3:15   | 74,581 | 74,599 | 18,34 | 1,28 |
|            | 3:30   | 71,381 | 71,391 | 9,96  | 0,69 |
|            | 3:45   | 70,981 | 70,991 | 9,54  | 0,66 |
|            | 4:00   | 70,000 | 70,008 | 7,76  | 0,54 |
|            | 4:15   | 69,162 | 69,180 | 18,13 | 1,26 |
|            | 4:30   | 72,181 | 72,211 | 29,62 | 2,06 |
|            | 4:45   | 76,400 | 76,413 | 12,98 | 0,90 |
|            | 5:00   | 72,762 | 72,775 | 13,05 | 0,91 |
|            | 5:15   | 76,581 | 76,601 | 20,19 | 1,41 |
|            | 5:30   | 79,781 | 79,810 | 28,73 | 2,00 |
|            | 5:45   | 76,581 | 76,611 | 29,56 | 2,06 |
|            | 6:00   | 72,981 | 73,001 | 19,45 | 1,35 |
|            | 6:15   | 80,581 | 80,602 | 21,32 | 1,49 |
|            | 6:30   | 77,381 | 77,404 | 22,63 | 1,58 |
|            | 6:45   | 77,562 | 77,594 | 31,31 | 2,18 |
|            | 7:00   | 79,381 | 79,400 | 19,02 | 1,33 |
| 7:15       | 86,181 | 86,208 | 26,60  | 1,85  |      |
| 7:30       | 85,562 | 85,579 | 16,84  | 1,17  |      |

|       |        |        |       |      |
|-------|--------|--------|-------|------|
| 7:45  | 82,181 | 82,191 | 10,08 | 0,70 |
| 8:00  | 86,981 | 87,014 | 32,92 | 2,29 |
| 8:15  | 87,962 | 87,980 | 17,59 | 1,23 |
| 8:30  | 87,781 | 87,807 | 26,08 | 1,82 |
| 8:45  | 85,962 | 85,978 | 16,22 | 1,13 |
| 9:00  | 88,362 | 88,375 | 12,37 | 0,86 |
| 9:15  | 88,181 | 88,205 | 23,90 | 1,67 |
| 9:30  | 83,562 | 83,588 | 26,08 | 1,82 |
| 9:45  | 82,581 | 82,596 | 15,17 | 1,06 |
| 10:00 | 82,181 | 82,192 | 10,46 | 0,73 |
| 10:15 | 80,581 | 80,604 | 23,14 | 1,61 |
| 10:30 | 79,381 | 79,399 | 17,39 | 1,21 |
| 10:45 | 78,981 | 79,007 | 26,32 | 1,83 |
| 11:00 | 81,162 | 81,190 | 27,99 | 1,95 |
| 11:15 | 81,162 | 81,190 | 27,25 | 1,90 |
| 11:30 | 81,381 | 81,394 | 13,31 | 0,93 |
| 11:45 | 79,381 | 79,397 | 16,28 | 1,13 |
| 12:00 | 80,362 | 80,373 | 11,18 | 0,78 |
| 12:15 | 81,381 | 81,408 | 26,98 | 1,88 |
| 12:30 | 80,181 | 80,205 | 23,82 | 1,66 |
| 12:45 | 81,781 | 81,809 | 28,07 | 1,96 |
| 13:00 | 78,362 | 78,393 | 30,74 | 2,14 |
| 13:15 | 79,381 | 79,396 | 15,35 | 1,07 |
| 13:30 | 81,162 | 81,178 | 15,55 | 1,08 |
| 13:45 | 83,381 | 83,400 | 18,89 | 1,32 |
| 14:00 | 80,581 | 80,607 | 25,71 | 1,79 |
| 14:15 | 79,162 | 79,167 | 4,75  | 0,33 |
| 14:30 | 78,981 | 78,990 | 9,16  | 0,64 |
| 14:45 | 78,981 | 78,985 | 4,09  | 0,28 |
| 15:00 | 81,962 | 81,970 | 7,45  | 0,52 |
| 15:15 | 76,581 | 76,604 | 22,72 | 1,58 |
| 15:30 | 77,562 | 77,589 | 26,81 | 1,87 |
| 15:45 | 81,781 | 81,810 | 28,92 | 2,02 |
| 16:00 | 81,381 | 81,393 | 12,09 | 0,84 |
| 16:15 | 80,362 | 80,380 | 17,59 | 1,23 |
| 16:30 | 81,381 | 81,395 | 13,48 | 0,94 |
| 16:45 | 82,762 | 82,776 | 13,88 | 0,97 |
| 17:00 | 82,181 | 82,207 | 26,04 | 1,81 |
| 17:15 | 75,781 | 75,794 | 12,63 | 0,88 |
| 17:30 | 79,562 | 79,582 | 20,17 | 1,41 |
| 17:45 | 80,800 | 80,818 | 18,09 | 1,26 |
| 18:00 | 79,962 | 79,972 | 10,15 | 0,71 |
| 18:15 | 80,981 | 80,994 | 12,53 | 0,87 |
| 18:30 | 78,362 | 78,367 | 4,44  | 0,31 |
| 18:45 | 78,581 | 78,588 | 7,19  | 0,50 |
| 19:00 | 78,181 | 78,187 | 6,25  | 0,44 |
| 19:15 | 74,581 | 74,586 | 5,17  | 0,36 |
| 19:30 | 73,781 | 73,795 | 13,87 | 0,97 |
| 19:45 | 75,381 | 75,411 | 29,93 | 2,09 |
| 20:00 | 76,362 | 76,381 | 19,18 | 1,34 |
| 20:15 | 78,000 | 78,006 | 5,85  | 0,41 |
| 20:30 | 76,762 | 76,765 | 2,50  | 0,17 |
| 20:45 | 80,981 | 80,997 | 15,70 | 1,09 |
| 21:00 | 80,362 | 80,371 | 8,91  | 0,62 |
| 21:15 | 82,981 | 83,009 | 27,80 | 1,94 |
| 21:30 | 84,981 | 84,992 | 11,19 | 0,78 |
| 21:45 | 84,181 | 84,210 | 28,92 | 2,02 |
| 22:00 | 83,562 | 83,581 | 18,70 | 1,30 |
| 22:15 | 76,581 | 76,604 | 22,72 | 1,58 |
| 22:30 | 76,181 | 76,202 | 20,83 | 1,45 |
| 22:45 | 81,381 | 81,390 | 9,04  | 0,63 |
| 23:00 | 81,162 | 81,191 | 29,19 | 2,03 |
| 23:15 | 74,400 | 74,412 | 12,49 | 0,87 |



|            |        |        |        |       |      |
|------------|--------|--------|--------|-------|------|
|            | 23:30  | 71,162 | 71,184 | 22,12 | 1,54 |
|            | 23:45  | 76,981 | 77,001 | 20,01 | 1,39 |
|            | 0:00   | 68,181 | 68,186 | 4,89  | 0,34 |
| 22.7.2015. | 0:15   | 72,981 | 72,992 | 10,90 | 0,98 |
|            | 0:30   | 77,381 | 77,387 | 5,95  | 0,54 |
|            | 0:45   | 78,981 | 79,009 | 27,95 | 2,52 |
|            | 1:00   | 77,781 | 77,788 | 6,84  | 0,62 |
|            | 1:15   | 74,981 | 75,009 | 27,93 | 2,52 |
|            | 1:30   | 76,762 | 76,788 | 25,80 | 2,33 |
|            | 1:45   | 76,400 | 76,413 | 12,57 | 1,13 |
|            | 2:00   | 76,181 | 76,196 | 15,30 | 1,38 |
|            | 2:15   | 74,581 | 74,595 | 14,30 | 1,29 |
|            | 2:30   | 71,162 | 71,195 | 32,96 | 2,97 |
|            | 2:45   | 73,381 | 73,388 | 6,84  | 0,62 |
|            | 3:00   | 68,581 | 68,596 | 15,12 | 1,36 |
|            | 3:15   | 73,781 | 73,794 | 12,44 | 1,12 |
|            | 3:30   | 73,781 | 73,809 | 27,69 | 2,50 |
|            | 3:45   | 70,981 | 71,006 | 25,36 | 2,29 |
|            | 4:00   | 72,981 | 73,012 | 30,80 | 2,78 |
|            | 4:15   | 76,581 | 76,600 | 18,93 | 1,71 |
|            | 4:30   | 78,181 | 78,203 | 22,23 | 2,00 |
|            | 4:45   | 77,381 | 77,392 | 10,73 | 0,97 |
|            | 5:00   | 78,762 | 78,790 | 27,27 | 2,46 |
|            | 5:15   | 85,962 | 85,968 | 5,32  | 0,48 |
|            | 5:30   | 84,581 | 84,599 | 17,91 | 1,61 |
|            | 5:45   | 81,781 | 81,809 | 27,78 | 2,50 |
|            | 6:00   | 77,562 | 77,582 | 19,58 | 1,76 |
|            | 6:15   | 83,781 | 83,797 | 16,01 | 1,44 |
|            | 6:30   | 80,981 | 80,984 | 3,30  | 0,30 |
|            | 6:45   | 80,981 | 81,005 | 24,24 | 2,18 |
|            | 7:00   | 80,762 | 80,784 | 22,05 | 1,99 |
|            | 7:15   | 88,000 | 88,023 | 22,76 | 2,05 |
|            | 7:30   | 87,562 | 87,577 | 14,86 | 1,34 |
|            | 7:45   | 85,381 | 85,399 | 17,56 | 1,58 |
|            | 8:00   | 85,162 | 85,182 | 19,88 | 1,79 |
|            | 8:15   | 97,562 | 97,590 | 27,92 | 2,52 |
|            | 8:30   | 99,162 | 99,181 | 18,56 | 1,67 |
|            | 8:45   | 96,981 | 97,008 | 27,23 | 2,45 |
|            | 9:00   | 96,143 | 96,161 | 17,87 | 1,61 |
|            | 9:15   | 95,562 | 95,583 | 20,76 | 1,87 |
|            | 9:30   | 92,181 | 92,192 | 11,12 | 1,00 |
|            | 9:45   | 89,381 | 89,410 | 28,89 | 2,60 |
|            | 10:00  | 89,562 | 89,573 | 11,13 | 1,00 |
| 10:15      | 90,762 | 90,782 | 20,07  | 1,81  |      |
| 10:30      | 91,781 | 91,811 | 30,23  | 2,73  |      |
| 10:45      | 89,562 | 89,592 | 29,86  | 2,69  |      |
| 11:00      | 94,362 | 94,371 | 8,64   | 0,78  |      |
| 11:15      | 92,981 | 92,999 | 17,40  | 1,57  |      |
| 11:30      | 93,343 | 93,368 | 24,36  | 2,20  |      |
| 11:45      | 93,381 | 93,395 | 13,83  | 1,25  |      |
| 12:00      | 92,362 | 92,386 | 24,07  | 2,17  |      |
| 12:15      | 93,562 | 93,583 | 20,35  | 1,83  |      |
| 12:30      | 95,562 | 95,575 | 12,37  | 1,12  |      |
| 12:45      | 93,562 | 93,582 | 19,91  | 1,79  |      |
| 13:00      | 91,562 | 91,591 | 28,43  | 2,56  |      |
| 13:15      | 95,162 | 95,178 | 15,49  | 1,40  |      |
| 13:30      | 94,762 | 94,789 | 27,21  | 2,45  |      |
| 13:45      | 95,381 | 95,393 | 11,72  | 1,06  |      |
| 14:00      | 92,981 | 93,001 | 20,12  | 1,81  |      |
| 14:15      | 86,362 | 86,390 | 27,83  | 2,51  |      |
| 14:30      | 84,762 | 84,779 | 16,42  | 1,48  |      |
| 14:45      | 84,181 | 84,199 | 17,63  | 1,59  |      |
| 15:00      | 83,962 | 83,988 | 25,38  | 2,29  |      |

|            |       |        |        |       |      |
|------------|-------|--------|--------|-------|------|
|            | 15:15 | 82,581 | 82,603 | 22,10 | 1,99 |
|            | 15:30 | 82,362 | 82,388 | 25,80 | 2,33 |
|            | 15:45 | 83,781 | 83,791 | 9,76  | 0,88 |
|            | 16:00 | 83,962 | 83,978 | 16,23 | 1,46 |
|            | 16:15 | 83,962 | 83,973 | 10,85 | 0,98 |
|            | 16:30 | 84,181 | 84,202 | 21,15 | 1,91 |
|            | 16:45 | 83,381 | 83,387 | 6,36  | 0,57 |
|            | 17:00 | 86,181 | 86,200 | 18,58 | 1,67 |
|            | 17:15 | 88,943 | 88,957 | 13,12 | 1,18 |
|            | 17:30 | 87,781 | 87,807 | 26,33 | 2,37 |
|            | 17:45 | 89,962 | 89,993 | 30,99 | 2,79 |
|            | 18:00 | 95,781 | 95,791 | 9,57  | 0,86 |
|            | 18:15 | 94,143 | 94,154 | 11,08 | 1,00 |
|            | 18:30 | 96,181 | 96,197 | 16,09 | 1,45 |
|            | 18:45 | 95,562 | 95,568 | 6,22  | 0,56 |
|            | 19:00 | 96,762 | 96,788 | 26,01 | 2,34 |
|            | 19:15 | 94,362 | 94,370 | 8,17  | 0,74 |
|            | 19:30 | 93,162 | 93,177 | 14,99 | 1,35 |
|            | 19:45 | 95,381 | 95,405 | 24,33 | 2,19 |
|            | 20:00 | 96,762 | 96,772 | 9,53  | 0,86 |
|            | 20:15 | 95,562 | 95,570 | 8,21  | 0,74 |
|            | 20:30 | 96,981 | 96,990 | 9,23  | 0,83 |
|            | 20:45 | 94,762 | 94,778 | 15,98 | 1,44 |
|            | 21:00 | 99,343 | 99,351 | 7,57  | 0,68 |
|            | 21:15 | 98,762 | 98,778 | 16,03 | 1,45 |
|            | 21:30 | 98,581 | 98,589 | 7,64  | 0,69 |
|            | 21:45 | 97,162 | 97,179 | 16,94 | 1,53 |
|            | 22:00 | 97,562 | 97,587 | 24,84 | 2,24 |
|            | 22:15 | 85,381 | 85,406 | 24,79 | 2,23 |
|            | 22:30 | 88,362 | 88,377 | 14,33 | 1,29 |
|            | 22:45 | 90,762 | 90,785 | 22,39 | 2,02 |
|            | 23:00 | 92,981 | 93,007 | 25,67 | 2,31 |
|            | 23:15 | 81,962 | 81,993 | 30,30 | 2,73 |
|            | 23:30 | 78,000 | 78,020 | 20,09 | 1,81 |
|            | 23:45 | 81,562 | 81,584 | 21,34 | 1,92 |
|            | 0:00  | 79,962 | 79,993 | 30,41 | 2,74 |
| 23.7.2015. | 0:15  | 85,381 | 85,404 | 23,19 | 1,93 |
|            | 0:30  | 85,381 | 85,395 | 14,32 | 1,19 |
|            | 0:45  | 87,781 | 87,791 | 9,59  | 0,80 |
|            | 1:00  | 81,562 | 81,585 | 22,33 | 1,86 |
|            | 1:15  | 78,981 | 78,996 | 14,80 | 1,23 |
|            | 1:30  | 77,781 | 77,812 | 30,82 | 2,56 |
|            | 1:45  | 76,981 | 77,001 | 19,59 | 1,63 |
|            | 2:00  | 77,962 | 77,974 | 11,75 | 0,98 |
|            | 2:15  | 80,981 | 81,000 | 19,21 | 1,60 |
|            | 2:30  | 73,781 | 73,794 | 12,78 | 1,06 |
|            | 2:45  | 75,381 | 75,405 | 23,39 | 1,95 |
|            | 3:00  | 75,562 | 75,563 | 0,62  | 0,05 |
|            | 3:15  | 76,000 | 76,006 | 5,98  | 0,50 |
|            | 3:30  | 69,781 | 69,800 | 18,86 | 1,57 |
|            | 3:45  | 72,981 | 73,004 | 22,95 | 1,91 |
|            | 4:00  | 72,981 | 73,003 | 21,85 | 1,82 |
|            | 4:15  | 72,981 | 72,996 | 14,93 | 1,24 |
|            | 4:30  | 73,162 | 73,166 | 3,45  | 0,29 |
|            | 4:45  | 74,181 | 74,190 | 8,43  | 0,70 |
|            | 5:00  | 76,000 | 76,016 | 16,04 | 1,34 |
|            | 5:15  | 79,162 | 79,171 | 8,93  | 0,74 |
|            | 5:30  | 79,781 | 79,791 | 9,59  | 0,80 |
|            | 5:45  | 79,162 | 79,183 | 20,61 | 1,71 |
|            | 6:00  | 75,781 | 75,814 | 32,87 | 2,74 |
|            | 6:15  | 82,981 | 82,992 | 10,55 | 0,88 |
|            | 6:30  | 81,781 | 81,793 | 12,04 | 1,00 |
|            | 6:45  | 76,581 | 76,595 | 13,51 | 1,12 |

|       |        |        |       |      |
|-------|--------|--------|-------|------|
| 7:00  | 77,962 | 77,987 | 24,49 | 2,04 |
| 7:15  | 88,400 | 88,417 | 16,79 | 1,40 |
| 7:30  | 92,762 | 92,789 | 26,58 | 2,21 |
| 7:45  | 91,962 | 91,982 | 19,60 | 1,63 |
| 8:00  | 91,562 | 91,585 | 22,86 | 1,90 |
| 8:15  | 96,581 | 96,603 | 21,97 | 1,83 |
| 8:30  | 98,762 | 98,774 | 11,82 | 0,98 |
| 8:45  | 97,562 | 97,590 | 27,38 | 2,28 |
| 9:00  | 96,981 | 97,006 | 25,27 | 2,10 |
| 9:15  | 93,162 | 93,189 | 26,81 | 2,23 |
| 9:30  | 92,362 | 92,381 | 18,98 | 1,58 |
| 9:45  | 91,562 | 91,572 | 10,11 | 0,84 |
| 10:00 | 92,762 | 92,791 | 28,89 | 2,40 |
| 10:15 | 86,581 | 86,599 | 17,47 | 1,45 |
| 10:30 | 88,181 | 88,206 | 25,14 | 2,09 |
| 10:45 | 91,562 | 91,587 | 24,57 | 2,04 |
| 11:00 | 93,562 | 93,592 | 30,13 | 2,51 |
| 11:15 | 91,962 | 91,979 | 16,32 | 1,36 |
| 11:30 | 89,562 | 89,581 | 18,26 | 1,52 |
| 11:45 | 88,981 | 89,010 | 29,29 | 2,44 |
| 12:00 | 90,581 | 90,597 | 15,39 | 1,28 |
| 12:15 | 87,962 | 87,985 | 22,28 | 1,85 |
| 12:30 | 85,381 | 85,403 | 21,92 | 1,82 |
| 12:45 | 89,162 | 89,176 | 13,62 | 1,13 |
| 13:00 | 86,581 | 86,609 | 28,31 | 2,36 |
| 13:15 | 89,962 | 89,979 | 16,55 | 1,38 |
| 13:30 | 87,162 | 87,172 | 9,64  | 0,80 |
| 13:45 | 87,781 | 87,799 | 18,30 | 1,52 |
| 14:00 | 88,943 | 88,963 | 19,57 | 1,63 |
| 14:15 | 93,781 | 93,811 | 30,09 | 2,50 |
| 14:30 | 91,562 | 91,569 | 6,39  | 0,53 |
| 14:45 | 89,962 | 89,971 | 8,90  | 0,74 |
| 15:00 | 91,381 | 91,393 | 12,11 | 1,01 |
| 15:15 | 91,162 | 91,175 | 13,18 | 1,10 |
| 15:30 | 92,762 | 92,783 | 20,89 | 1,74 |
| 15:45 | 90,981 | 91,008 | 27,11 | 2,26 |
| 16:00 | 91,962 | 91,979 | 16,63 | 1,38 |
| 16:15 | 94,362 | 94,373 | 10,96 | 0,91 |
| 16:30 | 93,162 | 93,189 | 26,96 | 2,24 |
| 16:45 | 91,962 | 91,979 | 16,92 | 1,41 |
| 17:00 | 91,381 | 91,407 | 26,28 | 2,19 |
| 17:15 | 89,962 | 89,974 | 11,88 | 0,99 |
| 17:30 | 92,181 | 92,203 | 21,68 | 1,80 |
| 17:45 | 91,962 | 91,972 | 9,82  | 0,82 |
| 18:00 | 91,162 | 91,181 | 19,04 | 1,58 |
| 18:15 | 87,381 | 87,410 | 28,76 | 2,39 |
| 18:30 | 91,562 | 91,583 | 21,09 | 1,75 |
| 18:45 | 91,962 | 91,972 | 9,82  | 0,82 |
| 19:00 | 95,162 | 95,175 | 13,13 | 1,09 |
| 19:15 | 96,581 | 96,596 | 15,20 | 1,26 |
| 19:30 | 95,962 | 95,974 | 12,11 | 1,01 |
| 19:45 | 93,962 | 93,987 | 24,25 | 2,02 |
| 20:00 | 94,181 | 94,187 | 5,93  | 0,49 |
| 20:15 | 88,362 | 88,388 | 25,48 | 2,12 |
| 20:30 | 87,162 | 87,175 | 12,58 | 1,05 |
| 20:45 | 88,981 | 88,996 | 14,66 | 1,22 |
| 21:00 | 82,181 | 82,209 | 28,28 | 2,35 |
| 21:15 | 81,562 | 81,568 | 5,80  | 0,48 |
| 21:30 | 86,362 | 86,391 | 28,54 | 2,37 |
| 21:45 | 88,181 | 88,209 | 27,55 | 2,29 |
| 22:00 | 87,962 | 87,986 | 24,03 | 2,00 |
| 22:15 | 88,581 | 88,600 | 19,16 | 1,59 |
| 22:30 | 91,781 | 91,798 | 16,53 | 1,38 |

|            |        |        |        |       |      |
|------------|--------|--------|--------|-------|------|
|            | 22:45  | 95,162 | 95,176 | 14,19 | 1,18 |
|            | 23:00  | 91,562 | 91,579 | 16,46 | 1,37 |
|            | 23:15  | 83,381 | 83,410 | 28,83 | 2,40 |
|            | 23:30  | 80,362 | 80,371 | 9,22  | 0,77 |
|            | 23:45  | 83,381 | 83,393 | 11,64 | 0,97 |
|            | 0:00   | 75,200 | 75,209 | 8,57  | 0,71 |
| 24.7.2015. | 0:15   | 71,562 | 71,591 | 29,19 | 2,49 |
|            | 0:30   | 69,781 | 69,812 | 30,60 | 2,61 |
|            | 0:45   | 68,800 | 68,816 | 15,75 | 1,34 |
|            | 1:00   | 67,562 | 67,567 | 4,78  | 0,41 |
|            | 1:15   | 66,181 | 66,197 | 15,96 | 1,36 |
|            | 1:30   | 64,400 | 64,425 | 25,08 | 2,14 |
|            | 1:45   | 64,181 | 64,197 | 16,26 | 1,39 |
|            | 2:00   | 63,781 | 63,808 | 27,07 | 2,31 |
|            | 2:15   | 68,181 | 68,190 | 9,35  | 0,80 |
|            | 2:30   | 66,400 | 66,416 | 16,44 | 1,40 |
|            | 2:45   | 65,962 | 65,970 | 7,68  | 0,66 |
|            | 3:00   | 65,781 | 65,793 | 11,46 | 0,98 |
|            | 3:15   | 68,400 | 68,426 | 25,52 | 2,18 |
|            | 3:30   | 67,781 | 67,796 | 14,93 | 1,27 |
|            | 3:45   | 68,581 | 68,610 | 28,38 | 2,42 |
|            | 4:00   | 67,781 | 67,800 | 19,28 | 1,65 |
|            | 4:15   | 72,181 | 72,190 | 9,17  | 0,78 |
|            | 4:30   | 74,762 | 74,775 | 12,63 | 1,08 |
|            | 4:45   | 74,581 | 74,600 | 18,45 | 1,57 |
|            | 5:00   | 73,600 | 73,621 | 20,94 | 1,79 |
|            | 5:15   | 76,362 | 76,371 | 8,34  | 0,71 |
|            | 5:30   | 75,381 | 75,400 | 19,29 | 1,65 |
|            | 5:45   | 75,381 | 75,388 | 6,38  | 0,54 |
|            | 6:00   | 74,981 | 75,008 | 26,39 | 2,25 |
|            | 6:15   | 80,362 | 80,370 | 7,68  | 0,66 |
|            | 6:30   | 77,381 | 77,389 | 8,13  | 0,69 |
|            | 6:45   | 73,781 | 73,804 | 22,45 | 1,92 |
|            | 7:00   | 76,181 | 76,210 | 29,08 | 2,48 |
|            | 7:15   | 77,781 | 77,798 | 16,68 | 1,42 |
|            | 7:30   | 78,981 | 78,992 | 10,99 | 0,94 |
|            | 7:45   | 82,981 | 83,005 | 24,19 | 2,06 |
|            | 8:00   | 81,962 | 81,986 | 23,27 | 1,99 |
|            | 8:15   | 90,581 | 90,602 | 20,74 | 1,77 |
|            | 8:30   | 90,362 | 90,387 | 24,77 | 2,11 |
|            | 8:45   | 89,962 | 89,987 | 24,62 | 2,10 |
|            | 9:00   | 92,181 | 92,203 | 21,57 | 1,84 |
|            | 9:15   | 89,562 | 89,586 | 23,62 | 2,02 |
|            | 9:30   | 89,562 | 89,586 | 23,98 | 2,05 |
|            | 9:45   | 88,181 | 88,212 | 30,43 | 2,60 |
|            | 10:00  | 86,581 | 86,588 | 7,26  | 0,62 |
| 10:15      | 86,581 | 86,603 | 21,67  | 1,85  |      |
| 10:30      | 84,762 | 84,778 | 15,50  | 1,32  |      |
| 10:45      | 85,162 | 85,179 | 16,80  | 1,43  |      |
| 11:00      | 85,781 | 85,802 | 21,20  | 1,81  |      |
| 11:15      | 85,562 | 85,588 | 25,80  | 2,20  |      |
| 11:30      | 86,181 | 86,209 | 28,03  | 2,39  |      |
| 11:45      | 85,962 | 85,976 | 13,28  | 1,13  |      |
| 12:00      | 87,781 | 87,804 | 23,21  | 1,98  |      |
| 12:15      | 88,181 | 88,194 | 13,22  | 1,13  |      |
| 12:30      | 87,962 | 87,975 | 13,15  | 1,12  |      |
| 12:45      | 88,362 | 88,382 | 20,01  | 1,71  |      |
| 13:00      | 85,962 | 85,974 | 12,14  | 1,04  |      |
| 13:15      | 88,981 | 88,996 | 14,93  | 1,27  |      |
| 13:30      | 89,962 | 89,977 | 14,84  | 1,27  |      |
| 13:45      | 90,581 | 90,606 | 24,46  | 2,09  |      |
| 14:00      | 91,343 | 91,359 | 15,53  | 1,33  |      |
| 14:15      | 90,581 | 90,597 | 15,91  | 1,36  |      |

|            |       |        |        |       |      |
|------------|-------|--------|--------|-------|------|
|            | 14:30 | 91,162 | 91,175 | 12,46 | 1,06 |
|            | 14:45 | 88,981 | 89,001 | 19,62 | 1,67 |
|            | 15:00 | 89,162 | 89,172 | 9,42  | 0,80 |
|            | 15:15 | 88,762 | 88,773 | 11,23 | 0,96 |
|            | 15:30 | 89,781 | 89,798 | 16,93 | 1,44 |
|            | 15:45 | 91,162 | 91,175 | 12,41 | 1,06 |
|            | 16:00 | 90,581 | 90,603 | 22,18 | 1,89 |
|            | 16:15 | 87,162 | 87,188 | 25,99 | 2,22 |
|            | 16:30 | 91,162 | 91,175 | 12,46 | 1,06 |
|            | 16:45 | 91,162 | 91,175 | 12,46 | 1,06 |
|            | 17:00 | 91,962 | 91,988 | 25,73 | 2,20 |
|            | 17:15 | 95,781 | 95,797 | 15,94 | 1,36 |
|            | 17:30 | 93,562 | 93,593 | 30,34 | 2,59 |
|            | 17:45 | 89,381 | 89,388 | 7,08  | 0,60 |
|            | 18:00 | 90,181 | 90,193 | 11,94 | 1,02 |
|            | 18:15 | 90,543 | 90,568 | 25,05 | 2,14 |
|            | 18:30 | 90,362 | 90,376 | 13,80 | 1,18 |
|            | 18:45 | 92,581 | 92,602 | 20,47 | 1,75 |
|            | 19:00 | 92,762 | 92,783 | 20,89 | 1,78 |
|            | 19:15 | 95,781 | 95,794 | 13,14 | 1,12 |
|            | 19:30 | 94,362 | 94,373 | 10,96 | 0,94 |
|            | 19:45 | 93,781 | 93,803 | 21,80 | 1,86 |
|            | 20:00 | 93,562 | 93,584 | 21,74 | 1,86 |
|            | 20:15 | 92,362 | 92,382 | 19,68 | 1,68 |
|            | 20:30 | 89,381 | 89,388 | 7,08  | 0,60 |
|            | 20:45 | 86,762 | 86,776 | 13,81 | 1,18 |
|            | 21:00 | 91,381 | 91,411 | 29,38 | 2,51 |
|            | 21:15 | 94,762 | 94,789 | 26,57 | 2,27 |
|            | 21:30 | 94,362 | 94,383 | 20,24 | 1,73 |
|            | 21:45 | 93,381 | 93,411 | 29,44 | 2,51 |
|            | 22:00 | 93,162 | 93,172 | 9,32  | 0,80 |
|            | 22:15 | 84,581 | 84,602 | 20,90 | 1,78 |
|            | 22:30 | 86,762 | 86,784 | 21,83 | 1,86 |
|            | 22:45 | 91,381 | 91,401 | 19,86 | 1,70 |
|            | 23:00 | 89,381 | 89,394 | 12,80 | 1,09 |
|            | 23:15 | 81,962 | 81,983 | 20,58 | 1,76 |
|            | 23:30 | 82,181 | 82,187 | 6,15  | 0,52 |
|            | 23:45 | 81,562 | 81,587 | 24,32 | 2,08 |
|            | 0:00  | 78,181 | 78,195 | 14,17 | 1,21 |
| 25.7.2015. | 0:15  | 58,800 | 58,804 | 4,24  | 0,22 |
|            | 0:30  | 57,381 | 57,413 | 31,52 | 1,63 |
|            | 0:45  | 56,981 | 57,002 | 21,25 | 1,10 |
|            | 1:00  | 56,800 | 56,812 | 12,00 | 0,62 |
|            | 1:15  | 57,781 | 57,793 | 12,04 | 0,62 |
|            | 1:30  | 56,400 | 56,404 | 3,88  | 0,20 |
|            | 1:45  | 55,781 | 55,789 | 7,82  | 0,40 |
|            | 2:00  | 55,781 | 55,788 | 6,45  | 0,33 |
|            | 2:15  | 58,400 | 58,421 | 21,28 | 1,10 |
|            | 2:30  | 57,781 | 57,787 | 5,63  | 0,29 |
|            | 2:45  | 56,981 | 57,005 | 23,96 | 1,24 |
|            | 3:00  | 58,000 | 58,006 | 6,40  | 0,33 |
|            | 3:15  | 58,981 | 58,989 | 7,47  | 0,39 |
|            | 3:30  | 58,581 | 58,610 | 28,58 | 1,48 |
|            | 3:45  | 55,600 | 55,627 | 27,16 | 1,40 |
|            | 4:00  | 54,181 | 54,200 | 18,91 | 0,98 |
|            | 4:15  | 54,400 | 54,419 | 18,54 | 0,96 |
|            | 4:30  | 55,162 | 55,190 | 27,39 | 1,41 |
|            | 4:45  | 56,000 | 56,005 | 5,23  | 0,27 |
|            | 5:00  | 56,000 | 56,007 | 6,88  | 0,36 |
|            | 5:15  | 58,981 | 58,991 | 9,38  | 0,48 |
|            | 5:30  | 54,800 | 54,824 | 23,95 | 1,24 |
|            | 5:45  | 52,581 | 52,588 | 6,37  | 0,33 |
|            | 6:00  | 54,181 | 54,199 | 17,71 | 0,91 |

|       |        |        |       |      |
|-------|--------|--------|-------|------|
| 6:15  | 56,000 | 56,003 | 2,74  | 0,14 |
| 6:30  | 52,181 | 52,208 | 26,49 | 1,37 |
| 6:45  | 53,381 | 53,407 | 26,15 | 1,35 |
| 7:00  | 56,000 | 56,030 | 29,51 | 1,52 |
| 7:15  | 57,381 | 57,409 | 27,73 | 1,43 |
| 7:30  | 52,981 | 52,999 | 18,06 | 0,93 |
| 7:45  | 54,400 | 54,413 | 12,94 | 0,67 |
| 8:00  | 52,581 | 52,590 | 9,17  | 0,47 |
| 8:15  | 56,400 | 56,417 | 16,82 | 0,87 |
| 8:30  | 55,200 | 55,222 | 21,81 | 1,13 |
| 8:45  | 55,562 | 55,573 | 11,03 | 0,57 |
| 9:00  | 52,800 | 52,817 | 16,61 | 0,86 |
| 9:15  | 61,600 | 61,611 | 10,53 | 0,54 |
| 9:30  | 59,562 | 59,585 | 23,02 | 1,19 |
| 9:45  | 57,200 | 57,217 | 16,73 | 0,86 |
| 10:00 | 58,400 | 58,407 | 6,59  | 0,34 |
| 10:15 | 63,381 | 63,392 | 10,90 | 0,56 |
| 10:30 | 63,381 | 63,388 | 6,53  | 0,34 |
| 10:45 | 62,181 | 62,197 | 15,84 | 0,82 |
| 11:00 | 62,981 | 62,998 | 17,05 | 0,88 |
| 11:15 | 65,600 | 65,617 | 17,06 | 0,88 |
| 11:30 | 65,162 | 65,179 | 16,40 | 0,85 |
| 11:45 | 68,000 | 68,009 | 9,49  | 0,49 |
| 12:00 | 67,562 | 67,570 | 7,83  | 0,40 |
| 12:15 | 66,000 | 66,013 | 12,95 | 0,67 |
| 12:30 | 66,181 | 66,190 | 8,73  | 0,45 |
| 12:45 | 67,781 | 67,789 | 8,28  | 0,43 |
| 13:00 | 64,981 | 65,009 | 27,57 | 1,42 |
| 13:15 | 65,381 | 65,398 | 16,63 | 0,86 |
| 13:30 | 65,600 | 65,620 | 20,08 | 1,04 |
| 13:45 | 66,981 | 66,993 | 11,67 | 0,60 |
| 14:00 | 66,181 | 66,211 | 29,67 | 1,53 |
| 14:15 | 64,981 | 65,001 | 19,69 | 1,02 |
| 14:30 | 65,781 | 65,792 | 11,22 | 0,58 |
| 14:45 | 69,600 | 69,630 | 30,08 | 1,55 |
| 15:00 | 66,362 | 66,377 | 14,25 | 0,74 |
| 15:15 | 65,381 | 65,391 | 9,54  | 0,49 |
| 15:30 | 66,400 | 66,419 | 18,92 | 0,98 |
| 15:45 | 65,781 | 65,806 | 25,12 | 1,30 |
| 16:00 | 66,981 | 67,004 | 22,56 | 1,16 |
| 16:15 | 65,781 | 65,805 | 24,10 | 1,24 |
| 16:30 | 66,581 | 66,605 | 23,92 | 1,24 |
| 16:45 | 66,800 | 66,819 | 18,76 | 0,97 |
| 17:00 | 66,581 | 66,599 | 17,90 | 0,92 |
| 17:15 | 60,181 | 60,202 | 20,65 | 1,07 |
| 17:30 | 64,400 | 64,407 | 7,10  | 0,37 |
| 17:45 | 62,762 | 62,773 | 10,87 | 0,56 |
| 18:00 | 62,800 | 62,825 | 25,26 | 1,30 |
| 18:15 | 61,381 | 61,390 | 8,54  | 0,44 |
| 18:30 | 63,381 | 63,413 | 31,65 | 1,63 |
| 18:45 | 62,400 | 62,413 | 13,13 | 0,68 |
| 19:00 | 64,581 | 64,609 | 28,20 | 1,46 |
| 19:15 | 61,781 | 61,805 | 23,64 | 1,22 |
| 19:30 | 61,381 | 61,390 | 8,60  | 0,44 |
| 19:45 | 59,600 | 59,620 | 20,07 | 1,04 |
| 20:00 | 61,781 | 61,802 | 20,68 | 1,07 |
| 20:15 | 58,581 | 58,605 | 23,98 | 1,24 |
| 20:30 | 62,581 | 62,608 | 26,79 | 1,38 |
| 20:45 | 60,000 | 60,009 | 8,54  | 0,44 |
| 21:00 | 60,981 | 60,996 | 15,21 | 0,79 |
| 21:15 | 68,181 | 68,190 | 8,98  | 0,46 |
| 21:30 | 60,181 | 60,205 | 23,85 | 1,23 |
| 21:45 | 58,400 | 58,419 | 18,51 | 0,96 |

|            |        |        |        |       |      |
|------------|--------|--------|--------|-------|------|
|            | 22:00  | 59,781 | 59,807 | 25,48 | 1,32 |
|            | 22:15  | 56,981 | 57,004 | 23,11 | 1,19 |
|            | 22:30  | 56,981 | 57,007 | 25,73 | 1,33 |
|            | 22:45  | 58,800 | 58,830 | 30,09 | 1,55 |
|            | 23:00  | 57,562 | 57,573 | 10,79 | 0,56 |
|            | 23:15  | 55,200 | 55,226 | 26,32 | 1,36 |
|            | 23:30  | 51,600 | 51,614 | 14,06 | 0,73 |
|            | 23:45  | 54,581 | 54,600 | 19,07 | 0,98 |
|            | 0:00   | 51,781 | 51,793 | 12,29 | 0,63 |
| 26.7.2015. | 0:15   | 45,200 | 45,216 | 16,08 | 0,67 |
|            | 0:30   | 44,000 | 44,023 | 22,66 | 0,94 |
|            | 0:45   | 43,162 | 43,173 | 10,83 | 0,45 |
|            | 1:00   | 44,000 | 44,021 | 21,30 | 0,88 |
|            | 1:15   | 45,200 | 45,214 | 13,98 | 0,58 |
|            | 1:30   | 46,400 | 46,400 | 0,44  | 0,02 |
|            | 1:45   | 47,781 | 47,801 | 20,16 | 0,83 |
|            | 2:00   | 47,600 | 47,601 | 0,64  | 0,03 |
|            | 2:15   | 49,781 | 49,803 | 21,69 | 0,90 |
|            | 2:30   | 44,981 | 44,995 | 14,28 | 0,59 |
|            | 2:45   | 48,619 | 48,635 | 15,65 | 0,65 |
|            | 3:00   | 48,581 | 48,600 | 18,39 | 0,76 |
|            | 3:15   | 48,581 | 48,595 | 13,69 | 0,57 |
|            | 3:30   | 48,181 | 48,199 | 17,50 | 0,72 |
|            | 3:45   | 46,219 | 46,238 | 19,22 | 0,79 |
|            | 4:00   | 46,181 | 46,184 | 3,20  | 0,13 |
|            | 4:15   | 45,381 | 45,405 | 23,96 | 0,99 |
|            | 4:30   | 40,400 | 40,416 | 15,84 | 0,66 |
|            | 4:45   | 41,200 | 41,217 | 17,29 | 0,72 |
|            | 5:00   | 42,581 | 42,596 | 14,84 | 0,61 |
|            | 5:15   | 42,000 | 42,026 | 25,83 | 1,07 |
|            | 5:30   | 41,381 | 41,400 | 18,55 | 0,77 |
|            | 5:45   | 40,000 | 40,002 | 2,11  | 0,09 |
|            | 6:00   | 37,781 | 37,793 | 12,31 | 0,51 |
|            | 6:15   | 39,600 | 39,623 | 23,10 | 0,96 |
|            | 6:30   | 36,181 | 36,187 | 5,51  | 0,23 |
|            | 6:45   | 38,000 | 38,010 | 10,37 | 0,43 |
|            | 7:00   | 37,600 | 37,607 | 7,49  | 0,31 |
|            | 7:15   | 38,181 | 38,200 | 18,80 | 0,78 |
|            | 7:30   | 36,400 | 36,408 | 8,18  | 0,34 |
|            | 7:45   | 33,600 | 33,624 | 24,40 | 1,01 |
|            | 8:00   | 35,781 | 35,802 | 21,25 | 0,88 |
|            | 8:15   | 42,619 | 42,636 | 17,38 | 0,72 |
|            | 8:30   | 43,781 | 43,794 | 13,12 | 0,54 |
|            | 8:45   | 39,381 | 39,389 | 8,05  | 0,33 |
|            | 9:00   | 40,000 | 40,014 | 13,68 | 0,57 |
|            | 9:15   | 42,981 | 42,992 | 10,40 | 0,43 |
|            | 9:30   | 43,200 | 43,207 | 7,26  | 0,30 |
|            | 9:45   | 41,600 | 41,617 | 17,25 | 0,71 |
|            | 10:00  | 38,581 | 38,598 | 17,35 | 0,72 |
| 10:15      | 45,419 | 45,430 | 11,52  | 0,48  |      |
| 10:30      | 45,781 | 45,788 | 6,51   | 0,27  |      |
| 10:45      | 46,981 | 46,999 | 17,56  | 0,73  |      |
| 11:00      | 46,619 | 46,630 | 11,01  | 0,46  |      |
| 11:15      | 44,181 | 44,205 | 24,17  | 1,00  |      |
| 11:30      | 46,981 | 46,996 | 14,65  | 0,61  |      |
| 11:45      | 46,800 | 46,814 | 14,38  | 0,59  |      |
| 12:00      | 50,981 | 51,006 | 24,82  | 1,03  |      |
| 12:15      | 54,800 | 54,815 | 14,63  | 0,61  |      |
| 12:30      | 52,581 | 52,600 | 18,93  | 0,78  |      |
| 12:45      | 54,400 | 54,420 | 20,27  | 0,84  |      |
| 13:00      | 53,381 | 53,406 | 24,76  | 1,02  |      |
| 13:15      | 52,181 | 52,196 | 14,84  | 0,61  |      |
| 13:30      | 50,000 | 50,019 | 18,83  | 0,78  |      |

|            |        |        |        |       |      |
|------------|--------|--------|--------|-------|------|
|            | 13:45  | 49,600 | 49,608 | 8,29  | 0,34 |
|            | 14:00  | 49,600 | 49,609 | 9,08  | 0,38 |
|            | 14:15  | 49,781 | 49,795 | 13,39 | 0,55 |
|            | 14:30  | 47,381 | 47,397 | 16,04 | 0,66 |
|            | 14:45  | 50,581 | 50,604 | 23,28 | 0,96 |
|            | 15:00  | 49,019 | 49,041 | 22,26 | 0,92 |
|            | 15:15  | 50,981 | 51,001 | 19,61 | 0,81 |
|            | 15:30  | 47,600 | 47,612 | 12,24 | 0,51 |
|            | 15:45  | 47,781 | 47,794 | 12,49 | 0,52 |
|            | 16:00  | 47,200 | 47,207 | 6,95  | 0,29 |
|            | 16:15  | 42,981 | 42,986 | 5,24  | 0,22 |
|            | 16:30  | 44,000 | 44,019 | 19,31 | 0,80 |
|            | 16:45  | 44,581 | 44,594 | 12,59 | 0,52 |
|            | 17:00  | 46,000 | 46,022 | 21,70 | 0,90 |
|            | 17:15  | 46,800 | 46,824 | 24,18 | 1,00 |
|            | 17:30  | 47,381 | 47,409 | 28,07 | 1,16 |
|            | 17:45  | 44,000 | 44,021 | 20,88 | 0,86 |
|            | 18:00  | 41,600 | 41,615 | 15,00 | 0,62 |
|            | 18:15  | 43,600 | 43,625 | 24,57 | 1,02 |
|            | 18:30  | 45,381 | 45,389 | 8,26  | 0,34 |
|            | 18:45  | 45,200 | 45,210 | 9,83  | 0,41 |
|            | 19:00  | 47,381 | 47,409 | 28,07 | 1,16 |
|            | 19:15  | 48,581 | 48,601 | 19,66 | 0,81 |
|            | 19:30  | 46,000 | 46,007 | 6,50  | 0,27 |
|            | 19:45  | 46,000 | 46,011 | 10,84 | 0,45 |
|            | 20:00  | 45,200 | 45,207 | 7,31  | 0,30 |
|            | 20:15  | 46,181 | 46,206 | 24,89 | 1,03 |
|            | 20:30  | 46,000 | 46,005 | 5,45  | 0,23 |
|            | 20:45  | 49,381 | 49,390 | 8,83  | 0,37 |
|            | 21:00  | 50,000 | 50,019 | 18,86 | 0,78 |
|            | 21:15  | 51,600 | 51,619 | 18,50 | 0,77 |
|            | 21:30  | 50,581 | 50,608 | 26,81 | 1,11 |
|            | 21:45  | 55,200 | 55,212 | 12,41 | 0,51 |
|            | 22:00  | 53,200 | 53,205 | 5,33  | 0,22 |
|            | 22:15  | 46,181 | 46,192 | 11,27 | 0,47 |
|            | 22:30  | 47,381 | 47,401 | 19,78 | 0,82 |
|            | 22:45  | 54,400 | 54,421 | 21,38 | 0,88 |
|            | 23:00  | 58,181 | 58,195 | 13,77 | 0,57 |
|            | 23:15  | 52,400 | 52,424 | 23,78 | 0,98 |
|            | 23:30  | 43,781 | 43,795 | 14,02 | 0,58 |
|            | 23:45  | 49,200 | 49,223 | 23,23 | 0,96 |
|            | 0:00   | 47,600 | 47,608 | 7,85  | 0,32 |
| 27.7.2015. | 0:15   | 64,362 | 64,369 | 6,51  | 0,26 |
|            | 0:30   | 64,800 | 64,807 | 6,59  | 0,26 |
|            | 0:45   | 63,381 | 63,391 | 9,56  | 0,37 |
|            | 1:00   | 64,181 | 64,193 | 11,39 | 0,45 |
|            | 1:15   | 66,000 | 66,005 | 4,92  | 0,19 |
|            | 1:30   | 64,762 | 64,784 | 21,38 | 0,84 |
|            | 1:45   | 66,400 | 66,425 | 24,52 | 0,96 |
|            | 2:00   | 63,381 | 63,392 | 11,26 | 0,44 |
|            | 2:15   | 72,581 | 72,600 | 18,70 | 0,73 |
|            | 2:30   | 68,981 | 68,998 | 17,25 | 0,68 |
|            | 2:45   | 67,381 | 67,410 | 29,14 | 1,14 |
|            | 3:00   | 60,581 | 60,597 | 16,09 | 0,63 |
|            | 3:15   | 66,800 | 66,812 | 11,63 | 0,46 |
|            | 3:30   | 64,981 | 65,002 | 20,39 | 0,80 |
|            | 3:45   | 64,581 | 64,607 | 25,56 | 1,00 |
|            | 4:00   | 65,781 | 65,797 | 15,97 | 0,63 |
|            | 4:15   | 67,200 | 67,209 | 8,95  | 0,35 |
|            | 4:30   | 69,381 | 69,405 | 23,72 | 0,93 |
| 4:45       | 67,781 | 67,806 | 25,14  | 0,99  |      |
| 5:00       | 68,181 | 68,207 | 25,39  | 1,00  |      |
| 5:15       | 64,800 | 64,815 | 14,54  | 0,57  |      |



|       |        |        |       |      |
|-------|--------|--------|-------|------|
| 5:30  | 60,800 | 60,825 | 24,65 | 0,97 |
| 5:45  | 58,762 | 58,777 | 14,50 | 0,57 |
| 6:00  | 56,400 | 56,422 | 21,87 | 0,86 |
| 6:15  | 62,181 | 62,194 | 13,16 | 0,52 |
| 6:30  | 60,181 | 60,199 | 18,11 | 0,71 |
| 6:45  | 57,200 | 57,216 | 16,23 | 0,64 |
| 7:00  | 54,800 | 54,821 | 20,83 | 0,82 |
| 7:15  | 56,181 | 56,202 | 20,40 | 0,80 |
| 7:30  | 56,581 | 56,608 | 27,11 | 1,06 |
| 7:45  | 55,600 | 55,625 | 25,43 | 1,00 |
| 8:00  | 56,800 | 56,819 | 18,78 | 0,74 |
| 8:15  | 62,181 | 62,197 | 15,47 | 0,61 |
| 8:30  | 61,381 | 61,404 | 22,81 | 0,89 |
| 8:45  | 61,200 | 61,213 | 13,33 | 0,52 |
| 9:00  | 62,581 | 62,600 | 18,62 | 0,73 |
| 9:15  | 60,581 | 60,600 | 19,31 | 0,76 |
| 9:30  | 60,181 | 60,204 | 23,02 | 0,90 |
| 9:45  | 61,381 | 61,404 | 22,60 | 0,89 |
| 10:00 | 59,200 | 59,224 | 23,86 | 0,94 |
| 10:15 | 62,981 | 63,007 | 25,68 | 1,01 |
| 10:30 | 62,981 | 62,996 | 15,31 | 0,60 |
| 10:45 | 63,200 | 63,215 | 15,18 | 0,60 |
| 11:00 | 63,381 | 63,394 | 12,70 | 0,50 |
| 11:15 | 66,981 | 67,003 | 21,48 | 0,84 |
| 11:30 | 64,581 | 64,597 | 15,56 | 0,61 |
| 11:45 | 64,981 | 64,999 | 17,68 | 0,69 |
| 12:00 | 66,981 | 67,001 | 19,44 | 0,76 |
| 12:15 | 66,000 | 66,018 | 17,64 | 0,69 |
| 12:30 | 64,581 | 64,599 | 17,37 | 0,68 |
| 12:45 | 67,381 | 67,405 | 24,12 | 0,95 |
| 13:00 | 63,200 | 63,228 | 27,79 | 1,09 |
| 13:15 | 68,762 | 68,790 | 28,22 | 1,11 |
| 13:30 | 67,200 | 67,221 | 20,53 | 0,80 |
| 13:45 | 66,981 | 67,007 | 26,29 | 1,03 |
| 14:00 | 66,981 | 67,004 | 23,31 | 0,91 |
| 14:15 | 71,381 | 71,403 | 22,13 | 0,87 |
| 14:30 | 69,381 | 69,406 | 25,21 | 0,99 |
| 14:45 | 68,981 | 69,005 | 24,28 | 0,95 |
| 15:00 | 70,400 | 70,410 | 9,62  | 0,38 |
| 15:15 | 70,362 | 70,378 | 15,72 | 0,62 |
| 15:30 | 71,600 | 71,616 | 15,69 | 0,62 |
| 15:45 | 71,162 | 71,176 | 13,94 | 0,55 |
| 16:00 | 73,781 | 73,795 | 14,21 | 0,56 |
| 16:15 | 66,581 | 66,603 | 22,30 | 0,87 |
| 16:30 | 67,781 | 67,808 | 27,31 | 1,07 |
| 16:45 | 65,600 | 65,624 | 23,56 | 0,92 |
| 17:00 | 66,181 | 66,209 | 27,68 | 1,09 |
| 17:15 | 65,381 | 65,394 | 13,37 | 0,52 |
| 17:30 | 68,181 | 68,206 | 25,11 | 0,98 |
| 17:45 | 66,981 | 67,007 | 26,32 | 1,03 |
| 18:00 | 66,181 | 66,211 | 29,46 | 1,16 |
| 18:15 | 59,600 | 59,619 | 19,41 | 0,76 |
| 18:30 | 60,581 | 60,592 | 11,24 | 0,44 |
| 18:45 | 62,800 | 62,808 | 8,14  | 0,32 |
| 19:00 | 61,162 | 61,174 | 11,25 | 0,44 |
| 19:15 | 54,800 | 54,823 | 22,86 | 0,90 |
| 19:30 | 55,381 | 55,403 | 21,54 | 0,84 |
| 19:45 | 55,600 | 55,622 | 22,37 | 0,88 |
| 20:00 | 54,581 | 54,605 | 23,95 | 0,94 |
| 20:15 | 52,181 | 52,196 | 15,15 | 0,59 |
| 20:30 | 47,200 | 47,218 | 18,03 | 0,71 |
| 20:45 | 50,000 | 50,016 | 15,94 | 0,63 |
| 21:00 | 54,181 | 54,201 | 20,34 | 0,80 |

|            |        |        |        |       |      |
|------------|--------|--------|--------|-------|------|
|            | 21:15  | 57,781 | 57,792 | 11,01 | 0,43 |
|            | 21:30  | 60,800 | 60,809 | 8,91  | 0,35 |
|            | 21:45  | 61,781 | 61,787 | 5,87  | 0,23 |
|            | 22:00  | 59,381 | 59,395 | 14,19 | 0,56 |
|            | 22:15  | 52,000 | 52,011 | 11,49 | 0,45 |
|            | 22:30  | 50,181 | 50,198 | 16,91 | 0,66 |
|            | 22:45  | 56,581 | 56,587 | 6,06  | 0,24 |
|            | 23:00  | 54,581 | 54,598 | 17,04 | 0,67 |
|            | 23:15  | 52,219 | 52,228 | 9,36  | 0,37 |
|            | 23:30  | 49,781 | 49,799 | 17,40 | 0,68 |
|            | 23:45  | 49,381 | 49,408 | 26,61 | 1,04 |
|            | 0:00   | 49,200 | 49,225 | 25,17 | 0,99 |
| 28.7.2015. | 0:15   | 53,200 | 53,204 | 3,91  | 0,23 |
|            | 0:30   | 49,381 | 49,393 | 12,09 | 0,70 |
|            | 0:45   | 50,581 | 50,598 | 16,62 | 0,97 |
|            | 1:00   | 50,800 | 50,810 | 10,09 | 0,59 |
|            | 1:15   | 57,381 | 57,401 | 19,92 | 1,16 |
|            | 1:30   | 57,600 | 57,610 | 10,47 | 0,61 |
|            | 1:45   | 58,762 | 58,776 | 14,20 | 0,83 |
|            | 2:00   | 56,400 | 56,428 | 27,81 | 1,62 |
|            | 2:15   | 54,000 | 54,008 | 8,11  | 0,47 |
|            | 2:30   | 51,381 | 51,400 | 19,20 | 1,12 |
|            | 2:45   | 50,800 | 50,818 | 18,43 | 1,07 |
|            | 3:00   | 50,181 | 50,194 | 13,25 | 0,77 |
|            | 3:15   | 52,581 | 52,595 | 13,50 | 0,79 |
|            | 3:30   | 52,800 | 52,824 | 23,65 | 1,38 |
|            | 3:45   | 52,000 | 52,016 | 15,80 | 0,92 |
|            | 4:00   | 52,181 | 52,205 | 24,26 | 1,41 |
|            | 4:15   | 54,981 | 54,992 | 10,87 | 0,63 |
|            | 4:30   | 52,400 | 52,411 | 10,86 | 0,63 |
|            | 4:45   | 56,181 | 56,196 | 14,90 | 0,87 |
|            | 5:00   | 57,381 | 57,408 | 27,30 | 1,59 |
|            | 5:15   | 64,981 | 65,008 | 27,27 | 1,59 |
|            | 5:30   | 64,800 | 64,807 | 7,14  | 0,42 |
|            | 5:45   | 64,581 | 64,587 | 6,31  | 0,37 |
|            | 6:00   | 59,381 | 59,408 | 26,73 | 1,56 |
|            | 6:15   | 57,781 | 57,807 | 25,41 | 1,48 |
|            | 6:30   | 54,000 | 54,016 | 16,21 | 0,94 |
|            | 6:45   | 56,981 | 56,997 | 16,29 | 0,95 |
|            | 7:00   | 54,581 | 54,597 | 15,90 | 0,93 |
|            | 7:15   | 54,400 | 54,415 | 14,62 | 0,85 |
|            | 7:30   | 56,981 | 56,998 | 17,02 | 0,99 |
|            | 7:45   | 60,181 | 60,202 | 20,59 | 1,20 |
|            | 8:00   | 59,781 | 59,806 | 25,18 | 1,47 |
|            | 8:15   | 60,581 | 60,601 | 20,16 | 1,17 |
|            | 8:30   | 63,200 | 63,227 | 27,11 | 1,58 |
|            | 8:45   | 63,381 | 63,401 | 20,11 | 1,17 |
|            | 9:00   | 62,581 | 62,609 | 28,02 | 1,63 |
|            | 9:15   | 68,400 | 68,414 | 14,13 | 0,82 |
|            | 9:30   | 65,381 | 65,399 | 18,08 | 1,05 |
|            | 9:45   | 66,181 | 66,208 | 26,81 | 1,56 |
|            | 10:00  | 65,781 | 65,806 | 24,58 | 1,43 |
| 10:15      | 68,981 | 69,002 | 20,46  | 1,19  |      |
| 10:30      | 66,000 | 66,027 | 27,40  | 1,60  |      |
| 10:45      | 64,581 | 64,602 | 21,22  | 1,24  |      |
| 11:00      | 66,181 | 66,201 | 20,29  | 1,18  |      |
| 11:15      | 64,581 | 64,598 | 16,50  | 0,96  |      |
| 11:30      | 65,781 | 65,797 | 16,36  | 0,95  |      |
| 11:45      | 67,381 | 67,411 | 29,46  | 1,72  |      |
| 12:00      | 65,200 | 65,217 | 16,51  | 0,96  |      |
| 12:15      | 66,762 | 66,778 | 15,69  | 0,91  |      |
| 12:30      | 64,181 | 64,194 | 12,74  | 0,74  |      |
| 12:45      | 66,000 | 66,017 | 16,97  | 0,99  |      |

|            |        |        |        |       |      |
|------------|--------|--------|--------|-------|------|
|            | 13:00  | 65,381 | 65,403 | 21,70 | 1,26 |
|            | 13:15  | 64,400 | 64,415 | 15,27 | 0,89 |
|            | 13:30  | 67,381 | 67,399 | 17,88 | 1,04 |
|            | 13:45  | 70,981 | 71,000 | 19,23 | 1,12 |
|            | 14:00  | 68,181 | 68,198 | 17,32 | 1,01 |
|            | 14:15  | 66,581 | 66,600 | 18,93 | 1,10 |
|            | 14:30  | 68,181 | 68,203 | 21,96 | 1,28 |
|            | 14:45  | 70,000 | 70,032 | 31,65 | 1,84 |
|            | 15:00  | 69,162 | 69,191 | 28,26 | 1,65 |
|            | 15:15  | 67,381 | 67,408 | 27,26 | 1,59 |
|            | 15:30  | 70,800 | 70,813 | 12,75 | 0,74 |
|            | 15:45  | 69,381 | 69,404 | 23,11 | 1,35 |
|            | 16:00  | 70,181 | 70,190 | 8,69  | 0,51 |
|            | 16:15  | 66,981 | 67,010 | 28,79 | 1,68 |
|            | 16:30  | 67,381 | 67,404 | 23,18 | 1,35 |
|            | 16:45  | 69,381 | 69,405 | 23,47 | 1,37 |
|            | 17:00  | 69,381 | 69,409 | 28,32 | 1,65 |
|            | 17:15  | 66,581 | 66,597 | 15,49 | 0,90 |
|            | 17:30  | 70,981 | 70,994 | 13,34 | 0,78 |
|            | 17:45  | 68,800 | 68,820 | 19,92 | 1,16 |
|            | 18:00  | 70,181 | 70,192 | 11,15 | 0,65 |
|            | 18:15  | 56,981 | 57,007 | 26,11 | 1,52 |
|            | 18:30  | 61,381 | 61,392 | 11,31 | 0,66 |
|            | 18:45  | 60,000 | 60,023 | 22,93 | 1,34 |
|            | 19:00  | 60,981 | 60,992 | 11,08 | 0,65 |
|            | 19:15  | 56,581 | 56,598 | 16,47 | 0,96 |
|            | 19:30  | 56,400 | 56,418 | 17,94 | 1,04 |
|            | 19:45  | 51,781 | 51,795 | 13,52 | 0,79 |
|            | 20:00  | 55,600 | 55,617 | 16,84 | 0,98 |
|            | 20:15  | 55,200 | 55,219 | 18,88 | 1,10 |
|            | 20:30  | 55,381 | 55,392 | 10,77 | 0,63 |
|            | 20:45  | 53,781 | 53,801 | 19,57 | 1,14 |
|            | 21:00  | 58,800 | 58,823 | 23,19 | 1,35 |
|            | 21:15  | 54,981 | 55,005 | 23,67 | 1,38 |
|            | 21:30  | 58,000 | 58,026 | 25,87 | 1,51 |
|            | 21:45  | 55,381 | 55,391 | 10,20 | 0,59 |
|            | 22:00  | 54,400 | 54,422 | 21,61 | 1,26 |
|            | 22:15  | 44,581 | 44,589 | 7,80  | 0,45 |
|            | 22:30  | 50,800 | 50,820 | 19,77 | 1,15 |
|            | 22:45  | 58,181 | 58,207 | 25,84 | 1,50 |
|            | 23:00  | 61,600 | 61,621 | 21,39 | 1,25 |
|            | 23:15  | 52,581 | 52,591 | 9,78  | 0,57 |
|            | 23:30  | 50,181 | 50,203 | 21,60 | 1,26 |
|            | 23:45  | 50,000 | 50,025 | 24,64 | 1,44 |
|            | 0:00   | 53,600 | 53,615 | 15,36 | 0,89 |
| 29.7.2015. | 0:15   | 55,381 | 55,401 | 20,35 | 0,86 |
|            | 0:30   | 54,181 | 54,198 | 16,44 | 0,70 |
|            | 0:45   | 38,619 | 38,626 | 7,05  | 0,30 |
|            | 1:00   | 45,562 | 45,576 | 13,72 | 0,58 |
|            | 1:15   | 47,600 | 47,619 | 18,64 | 0,79 |
|            | 1:30   | 46,800 | 46,824 | 24,02 | 1,02 |
|            | 1:45   | 46,181 | 46,202 | 21,01 | 0,89 |
|            | 2:00   | 46,800 | 46,824 | 24,02 | 1,02 |
|            | 2:15   | 42,000 | 42,028 | 27,58 | 1,17 |
|            | 2:30   | 44,181 | 44,193 | 11,72 | 0,50 |
|            | 2:45   | 43,200 | 43,205 | 5,05  | 0,21 |
|            | 3:00   | 44,800 | 44,816 | 16,02 | 0,68 |
|            | 3:15   | 44,981 | 44,993 | 11,39 | 0,48 |
|            | 3:30   | 40,400 | 40,409 | 8,75  | 0,37 |
|            | 3:45   | 46,800 | 46,820 | 20,41 | 0,87 |
|            | 4:00   | 47,381 | 47,404 | 22,73 | 0,96 |
|            | 4:15   | 54,000 | 54,012 | 11,61 | 0,49 |
| 4:30       | 57,381 | 57,409 | 27,67  | 1,17  |      |

|       |        |        |       |      |
|-------|--------|--------|-------|------|
| 4:45  | 61,781 | 61,803 | 22,31 | 0,95 |
| 5:00  | 64,981 | 65,002 | 20,53 | 0,87 |
| 5:15  | 66,000 | 66,020 | 20,39 | 0,87 |
| 5:30  | 63,781 | 63,795 | 14,30 | 0,61 |
| 5:45  | 63,600 | 63,617 | 16,60 | 0,70 |
| 6:00  | 61,781 | 61,798 | 16,43 | 0,70 |
| 6:15  | 61,781 | 61,798 | 16,79 | 0,71 |
| 6:30  | 59,781 | 59,808 | 26,83 | 1,14 |
| 6:45  | 60,981 | 61,006 | 25,35 | 1,08 |
| 7:00  | 66,000 | 66,015 | 14,93 | 0,63 |
| 7:15  | 70,762 | 70,786 | 23,46 | 1,00 |
| 7:30  | 72,000 | 72,025 | 25,04 | 1,06 |
| 7:45  | 70,981 | 71,008 | 26,41 | 1,12 |
| 8:00  | 70,581 | 70,595 | 13,92 | 0,59 |
| 8:15  | 71,381 | 71,394 | 13,28 | 0,56 |
| 8:30  | 71,381 | 71,402 | 21,30 | 0,90 |
| 8:45  | 73,781 | 73,804 | 22,57 | 0,96 |
| 9:00  | 74,981 | 74,997 | 15,86 | 0,67 |
| 9:15  | 73,381 | 73,395 | 13,42 | 0,57 |
| 9:30  | 74,581 | 74,599 | 18,20 | 0,77 |
| 9:45  | 70,181 | 70,194 | 12,37 | 0,53 |
| 10:00 | 67,781 | 67,808 | 26,54 | 1,13 |
| 10:15 | 69,381 | 69,405 | 23,40 | 0,99 |
| 10:30 | 67,200 | 67,230 | 29,68 | 1,26 |
| 10:45 | 69,381 | 69,405 | 23,40 | 0,99 |
| 11:00 | 70,362 | 70,376 | 13,30 | 0,56 |
| 11:15 | 72,181 | 72,199 | 17,66 | 0,75 |
| 11:30 | 74,181 | 74,205 | 24,12 | 1,02 |
| 11:45 | 74,400 | 74,420 | 20,10 | 0,85 |
| 12:00 | 72,762 | 72,790 | 27,41 | 1,16 |
| 12:15 | 74,981 | 75,000 | 18,43 | 0,78 |
| 12:30 | 73,381 | 73,403 | 21,63 | 0,92 |
| 12:45 | 73,781 | 73,809 | 27,57 | 1,17 |
| 13:00 | 71,781 | 71,789 | 8,07  | 0,34 |
| 13:15 | 72,181 | 72,201 | 19,64 | 0,83 |
| 13:30 | 69,781 | 69,805 | 24,17 | 1,03 |
| 13:45 | 68,581 | 68,609 | 28,02 | 1,19 |
| 14:00 | 70,581 | 70,594 | 13,00 | 0,55 |
| 14:15 | 70,981 | 71,009 | 28,11 | 1,19 |
| 14:30 | 69,781 | 69,805 | 24,04 | 1,02 |
| 14:45 | 69,381 | 69,402 | 20,50 | 0,87 |
| 15:00 | 68,581 | 68,607 | 25,60 | 1,09 |
| 15:15 | 72,981 | 73,006 | 24,77 | 1,05 |
| 15:30 | 70,581 | 70,600 | 19,08 | 0,81 |
| 15:45 | 72,981 | 73,006 | 24,77 | 1,05 |
| 16:00 | 72,181 | 72,201 | 20,18 | 0,86 |
| 16:15 | 69,600 | 69,617 | 16,57 | 0,70 |
| 16:30 | 72,362 | 72,384 | 21,36 | 0,91 |
| 16:45 | 70,981 | 71,003 | 21,52 | 0,91 |
| 17:00 | 71,200 | 71,220 | 20,39 | 0,87 |
| 17:15 | 69,562 | 69,584 | 21,98 | 0,93 |
| 17:30 | 66,000 | 66,012 | 12,49 | 0,53 |
| 17:45 | 68,181 | 68,202 | 21,26 | 0,90 |
| 18:00 | 66,981 | 66,994 | 12,47 | 0,53 |
| 18:15 | 61,600 | 61,625 | 25,43 | 1,08 |
| 18:30 | 65,781 | 65,794 | 12,79 | 0,54 |
| 18:45 | 66,581 | 66,590 | 8,96  | 0,38 |
| 19:00 | 70,981 | 71,001 | 19,44 | 0,83 |
| 19:15 | 67,162 | 67,193 | 30,69 | 1,30 |
| 19:30 | 67,600 | 67,626 | 26,08 | 1,11 |
| 19:45 | 66,400 | 66,414 | 14,16 | 0,60 |
| 20:00 | 65,381 | 65,401 | 20,00 | 0,85 |
| 20:15 | 66,362 | 66,373 | 10,78 | 0,46 |

|            |       |        |        |       |      |
|------------|-------|--------|--------|-------|------|
|            | 20:30 | 64,400 | 64,425 | 24,89 | 1,06 |
|            | 20:45 | 62,981 | 63,007 | 25,37 | 1,08 |
|            | 21:00 | 67,381 | 67,404 | 22,46 | 0,95 |
|            | 21:15 | 65,600 | 65,614 | 14,29 | 0,61 |
|            | 21:30 | 63,781 | 63,801 | 19,89 | 0,84 |
|            | 21:45 | 68,981 | 69,004 | 22,47 | 0,95 |
|            | 22:00 | 70,981 | 71,007 | 26,17 | 1,11 |
|            | 22:15 | 69,600 | 69,627 | 27,29 | 1,16 |
|            | 22:30 | 70,181 | 70,193 | 12,06 | 0,51 |
|            | 22:45 | 72,581 | 72,605 | 23,73 | 1,01 |
|            | 23:00 | 72,581 | 72,605 | 23,81 | 1,01 |
|            | 23:15 | 64,181 | 64,201 | 19,62 | 0,83 |
|            | 23:30 | 73,162 | 73,190 | 27,24 | 1,16 |
|            | 23:45 | 72,400 | 72,408 | 8,40  | 0,36 |
|            | 0:00  | 70,981 | 71,002 | 20,64 | 0,88 |
| 30.7.2015. | 0:15  | 63,781 | 63,805 | 24,30 | 0,87 |
|            | 0:30  | 62,981 | 63,000 | 19,37 | 0,69 |
|            | 0:45  | 54,981 | 54,995 | 13,63 | 0,49 |
|            | 1:00  | 57,600 | 57,625 | 24,64 | 0,88 |
|            | 1:15  | 54,981 | 55,005 | 24,32 | 0,87 |
|            | 1:30  | 56,981 | 57,005 | 23,69 | 0,85 |
|            | 1:45  | 61,200 | 61,216 | 16,00 | 0,57 |
|            | 2:00  | 58,581 | 58,597 | 16,00 | 0,57 |
|            | 2:15  | 59,600 | 59,615 | 15,20 | 0,54 |
|            | 2:30  | 60,181 | 60,197 | 15,64 | 0,56 |
|            | 2:45  | 59,200 | 59,225 | 24,71 | 0,88 |
|            | 3:00  | 57,381 | 57,407 | 26,23 | 0,94 |
|            | 3:15  | 58,981 | 59,001 | 20,28 | 0,72 |
|            | 3:30  | 59,381 | 59,390 | 8,41  | 0,30 |
|            | 3:45  | 60,181 | 60,210 | 28,56 | 1,02 |
|            | 4:00  | 58,000 | 58,023 | 22,88 | 0,82 |
|            | 4:15  | 54,981 | 54,995 | 13,74 | 0,49 |
|            | 4:30  | 53,781 | 53,809 | 27,92 | 1,00 |
|            | 4:45  | 57,200 | 57,219 | 19,20 | 0,69 |
|            | 5:00  | 56,400 | 56,424 | 23,56 | 0,84 |
|            | 5:15  | 52,981 | 52,995 | 13,43 | 0,48 |
|            | 5:30  | 55,600 | 55,618 | 18,39 | 0,66 |
|            | 5:45  | 52,181 | 52,199 | 17,62 | 0,63 |
|            | 6:00  | 50,581 | 50,599 | 18,36 | 0,66 |
|            | 6:15  | 53,600 | 53,611 | 10,59 | 0,38 |
|            | 6:30  | 48,181 | 48,204 | 22,78 | 0,81 |
|            | 6:45  | 49,381 | 49,389 | 7,50  | 0,27 |
|            | 7:00  | 51,200 | 51,211 | 11,05 | 0,39 |
|            | 7:15  | 57,600 | 57,619 | 18,61 | 0,66 |
|            | 7:30  | 54,981 | 55,002 | 20,98 | 0,75 |
|            | 7:45  | 56,981 | 57,005 | 24,34 | 0,87 |
|            | 8:00  | 57,200 | 57,216 | 15,87 | 0,57 |
|            | 8:15  | 61,381 | 61,396 | 14,53 | 0,52 |
|            | 8:30  | 58,981 | 58,999 | 18,08 | 0,65 |
|            | 8:45  | 58,400 | 58,429 | 28,53 | 1,02 |
|            | 9:00  | 57,381 | 57,404 | 22,41 | 0,80 |
|            | 9:15  | 64,400 | 64,410 | 9,66  | 0,34 |
|            | 9:30  | 66,581 | 66,592 | 10,59 | 0,38 |
|            | 9:45  | 64,581 | 64,597 | 15,92 | 0,57 |
|            | 10:00 | 63,781 | 63,803 | 22,25 | 0,79 |
|            | 10:15 | 70,581 | 70,594 | 12,95 | 0,46 |
|            | 10:30 | 71,200 | 71,213 | 13,40 | 0,48 |
|            | 10:45 | 72,362 | 72,387 | 24,53 | 0,88 |
|            | 11:00 | 68,400 | 68,421 | 21,34 | 0,76 |
|            | 11:15 | 75,962 | 75,991 | 28,59 | 1,02 |
|            | 11:30 | 76,181 | 76,199 | 17,72 | 0,63 |
|            | 11:45 | 74,181 | 74,193 | 12,02 | 0,43 |
|            | 12:00 | 74,400 | 74,414 | 14,21 | 0,51 |

|            |       |        |        |       |      |
|------------|-------|--------|--------|-------|------|
|            | 12:15 | 71,381 | 71,399 | 18,19 | 0,65 |
|            | 12:30 | 71,162 | 71,179 | 16,45 | 0,59 |
|            | 12:45 | 74,981 | 74,991 | 10,26 | 0,37 |
|            | 13:00 | 71,200 | 71,227 | 26,60 | 0,95 |
|            | 13:15 | 73,162 | 73,178 | 15,76 | 0,56 |
|            | 13:30 | 74,981 | 75,007 | 25,87 | 0,92 |
|            | 13:45 | 76,181 | 76,202 | 20,80 | 0,74 |
|            | 14:00 | 74,981 | 74,999 | 18,11 | 0,65 |
|            | 14:15 | 74,181 | 74,196 | 14,86 | 0,53 |
|            | 14:30 | 73,781 | 73,795 | 14,23 | 0,51 |
|            | 14:45 | 71,781 | 71,805 | 23,77 | 0,85 |
|            | 15:00 | 69,781 | 69,804 | 22,65 | 0,81 |
|            | 15:15 | 66,000 | 66,019 | 19,37 | 0,69 |
|            | 15:30 | 63,562 | 63,580 | 17,79 | 0,64 |
|            | 15:45 | 68,400 | 68,428 | 28,36 | 1,01 |
|            | 16:00 | 65,781 | 65,796 | 15,00 | 0,54 |
|            | 16:15 | 60,181 | 60,195 | 14,06 | 0,50 |
|            | 16:30 | 62,800 | 62,825 | 25,46 | 0,91 |
|            | 16:45 | 62,581 | 62,601 | 20,12 | 0,72 |
|            | 17:00 | 60,981 | 61,003 | 21,40 | 0,76 |
|            | 17:15 | 58,800 | 58,817 | 16,54 | 0,59 |
|            | 17:30 | 56,581 | 56,603 | 21,98 | 0,78 |
|            | 17:45 | 57,781 | 57,810 | 28,94 | 1,03 |
|            | 18:00 | 57,200 | 57,214 | 13,59 | 0,49 |
|            | 18:15 | 53,200 | 53,218 | 18,39 | 0,66 |
|            | 18:30 | 53,162 | 53,183 | 20,96 | 0,75 |
|            | 18:45 | 56,619 | 56,629 | 9,92  | 0,35 |
|            | 19:00 | 54,981 | 55,010 | 28,51 | 1,02 |
|            | 19:15 | 54,581 | 54,605 | 24,07 | 0,86 |
|            | 19:30 | 52,400 | 52,419 | 19,00 | 0,68 |
|            | 19:45 | 52,981 | 53,000 | 19,05 | 0,68 |
|            | 20:00 | 46,400 | 46,409 | 8,52  | 0,30 |
|            | 20:15 | 44,981 | 45,007 | 26,11 | 0,93 |
|            | 20:30 | 43,600 | 43,618 | 17,88 | 0,64 |
|            | 20:45 | 41,381 | 41,403 | 22,30 | 0,80 |
|            | 21:00 | 43,419 | 43,436 | 17,41 | 0,62 |
|            | 21:15 | 48,581 | 48,598 | 16,72 | 0,60 |
|            | 21:30 | 48,800 | 48,814 | 14,22 | 0,51 |
|            | 21:45 | 48,181 | 48,205 | 24,27 | 0,87 |
|            | 22:00 | 49,600 | 49,628 | 27,80 | 0,99 |
|            | 22:15 | 42,800 | 42,813 | 12,72 | 0,45 |
|            | 22:30 | 45,781 | 45,796 | 14,59 | 0,52 |
|            | 22:45 | 47,600 | 47,621 | 20,67 | 0,74 |
|            | 23:00 | 48,181 | 48,195 | 13,45 | 0,48 |
|            | 23:15 | 40,800 | 40,812 | 12,36 | 0,44 |
|            | 23:30 | 43,781 | 43,801 | 20,30 | 0,73 |
|            | 23:45 | 44,400 | 44,423 | 22,62 | 0,81 |
|            | 0:00  | 43,781 | 43,793 | 11,40 | 0,41 |
| 31.7.2015. | 0:15  | 40,800 | 40,812 | 12,34 | 0,50 |
|            | 0:30  | 39,200 | 39,217 | 17,21 | 0,70 |
|            | 0:45  | 42,000 | 42,007 | 7,29  | 0,29 |
|            | 1:00  | 39,381 | 39,391 | 9,92  | 0,40 |
|            | 1:15  | 42,400 | 42,415 | 14,96 | 0,61 |
|            | 1:30  | 38,800 | 38,820 | 20,02 | 0,81 |
|            | 1:45  | 40,181 | 40,185 | 3,81  | 0,15 |
|            | 2:00  | 40,800 | 40,807 | 7,06  | 0,29 |
|            | 2:15  | 44,000 | 44,020 | 20,36 | 0,82 |
|            | 2:30  | 42,181 | 42,204 | 22,52 | 0,91 |
|            | 2:45  | 40,000 | 40,019 | 18,54 | 0,75 |
|            | 3:00  | 40,800 | 40,815 | 14,56 | 0,59 |
|            | 3:15  | 42,800 | 42,807 | 7,25  | 0,29 |

|       |        |        |       |      |
|-------|--------|--------|-------|------|
| 3:30  | 41,381 | 41,400 | 19,32 | 0,78 |
| 3:45  | 41,600 | 41,620 | 19,89 | 0,80 |
| 4:00  | 40,981 | 40,988 | 7,25  | 0,29 |
| 4:15  | 40,800 | 40,815 | 15,07 | 0,61 |
| 4:30  | 42,400 | 42,418 | 17,88 | 0,72 |
| 4:45  | 43,381 | 43,406 | 25,13 | 1,02 |
| 5:00  | 43,600 | 43,623 | 23,29 | 0,94 |
| 5:15  | 45,200 | 45,204 | 3,77  | 0,15 |
| 5:30  | 44,981 | 45,006 | 24,58 | 0,99 |
| 5:45  | 43,200 | 43,207 | 6,80  | 0,28 |
| 6:00  | 41,381 | 41,397 | 15,51 | 0,63 |
| 6:15  | 44,400 | 44,412 | 12,14 | 0,49 |
| 6:30  | 42,181 | 42,199 | 17,99 | 0,73 |
| 6:45  | 40,800 | 40,814 | 14,27 | 0,58 |
| 7:00  | 41,200 | 41,217 | 16,96 | 0,69 |
| 7:15  | 50,000 | 50,026 | 26,46 | 1,07 |
| 7:30  | 43,200 | 43,214 | 14,08 | 0,57 |
| 7:45  | 43,781 | 43,793 | 11,60 | 0,47 |
| 8:00  | 44,981 | 44,990 | 8,91  | 0,36 |
| 8:15  | 46,800 | 46,813 | 12,53 | 0,51 |
| 8:30  | 50,400 | 50,426 | 25,94 | 1,05 |
| 8:45  | 50,581 | 50,596 | 14,74 | 0,60 |
| 9:00  | 50,400 | 50,423 | 23,40 | 0,95 |
| 9:15  | 47,781 | 47,797 | 16,07 | 0,65 |
| 9:30  | 46,400 | 46,413 | 13,35 | 0,54 |
| 9:45  | 46,981 | 46,998 | 16,98 | 0,69 |
| 10:00 | 49,381 | 49,401 | 19,51 | 0,79 |
| 10:15 | 49,781 | 49,800 | 18,44 | 0,75 |
| 10:30 | 47,781 | 47,798 | 16,77 | 0,68 |
| 10:45 | 49,381 | 49,401 | 19,51 | 0,79 |
| 11:00 | 48,181 | 48,206 | 24,96 | 1,01 |
| 11:15 | 48,800 | 48,813 | 13,50 | 0,55 |
| 11:30 | 47,962 | 47,969 | 7,02  | 0,28 |
| 11:45 | 49,600 | 49,626 | 25,58 | 1,04 |
| 12:00 | 49,600 | 49,621 | 21,44 | 0,87 |
| 12:15 | 52,800 | 52,820 | 19,56 | 0,79 |
| 12:30 | 52,981 | 52,996 | 14,47 | 0,59 |
| 12:45 | 52,581 | 52,603 | 22,03 | 0,89 |
| 13:00 | 50,581 | 50,600 | 19,02 | 0,77 |
| 13:15 | 50,800 | 50,824 | 23,80 | 0,96 |
| 13:30 | 50,581 | 50,596 | 15,11 | 0,61 |
| 13:45 | 52,581 | 52,600 | 18,42 | 0,75 |
| 14:00 | 51,200 | 51,226 | 25,58 | 1,03 |
| 14:15 | 50,000 | 50,018 | 17,81 | 0,72 |
| 14:30 | 49,381 | 49,397 | 15,55 | 0,63 |
| 14:45 | 50,000 | 50,019 | 19,19 | 0,78 |
| 15:00 | 48,581 | 48,607 | 25,42 | 1,03 |
| 15:15 | 46,581 | 46,593 | 12,08 | 0,49 |
| 15:30 | 45,019 | 45,029 | 9,86  | 0,40 |
| 15:45 | 46,181 | 46,191 | 9,91  | 0,40 |
| 16:00 | 46,800 | 46,809 | 9,05  | 0,37 |
| 16:15 | 42,400 | 42,412 | 12,13 | 0,49 |
| 16:30 | 41,781 | 41,799 | 17,42 | 0,70 |
| 16:45 | 44,400 | 44,416 | 16,45 | 0,67 |

|       |        |        |       |      |
|-------|--------|--------|-------|------|
| 17:00 | 43,381 | 43,403 | 21,99 | 0,89 |
| 17:15 | 43,600 | 43,622 | 22,07 | 0,89 |
| 17:30 | 47,600 | 47,612 | 12,24 | 0,50 |
| 17:45 | 44,400 | 44,416 | 16,08 | 0,65 |
| 18:00 | 42,981 | 43,008 | 26,71 | 1,08 |
| 18:15 | 42,800 | 42,809 | 9,39  | 0,38 |
| 18:30 | 49,381 | 49,401 | 20,08 | 0,81 |
| 18:45 | 51,200 | 51,228 | 27,75 | 1,12 |
| 19:00 | 48,981 | 49,003 | 21,39 | 0,87 |
| 19:15 | 62,581 | 62,600 | 18,78 | 0,76 |
| 19:30 | 60,581 | 60,608 | 26,97 | 1,09 |
| 19:45 | 56,800 | 56,824 | 24,07 | 0,97 |
| 20:00 | 56,181 | 56,193 | 11,67 | 0,47 |
| 20:15 | 53,200 | 53,210 | 10,46 | 0,42 |
| 20:30 | 52,981 | 52,992 | 11,17 | 0,45 |
| 20:45 | 52,400 | 52,419 | 18,64 | 0,75 |
| 21:00 | 54,800 | 54,821 | 21,31 | 0,86 |
| 21:15 | 55,381 | 55,410 | 29,02 | 1,17 |
| 21:30 | 58,981 | 58,987 | 5,91  | 0,24 |
| 21:45 | 58,581 | 58,601 | 19,48 | 0,79 |
| 22:00 | 58,800 | 58,807 | 6,57  | 0,27 |
| 22:15 | 55,381 | 55,393 | 12,00 | 0,49 |
| 22:30 | 64,800 | 64,809 | 9,42  | 0,38 |
| 22:45 | 64,981 | 65,010 | 28,87 | 1,17 |
| 23:00 | 67,562 | 67,573 | 10,71 | 0,43 |
| 23:15 | 67,600 | 67,615 | 14,99 | 0,61 |
| 23:30 | 63,381 | 63,392 | 10,50 | 0,42 |
| 23:45 | 66,981 | 66,999 | 17,97 | 0,73 |
| 0:00  | 63,381 | 63,388 | 7,23  | 0,29 |



## SAŽETAK

U početnoj fazi istraživanja napravljen je pregled znanstvene literature vezano za procjenu mjerne nesigurnosti. Utvrđeno je da je najzastupljenija metoda sukladno međunarodno prihvaćenom dokumentu „Guide to the expression of uncertainty in measurement“, tzv. GUM metoda. Ova metoda sadrži određene nedostatke te je izdana dopuna istog dokumenta koja preporuča uporabu Monte Carlo metode. Nadalje, u disertaciji je prikazan trenutno zastupljeni način za utvrđivanje razmijenjene energije kod prekogranične razmjene električne energije uključujući metode izračuna gubitaka prijenosa. Utvrđeno je da niti jedna metoda ne uključuje mjernu nesigurnost odnosno sistematske pogreške obračunskog mjerenja. Naime, uslijed velikih količina prenesene energije mali postotci sistematskih pogrešaka mogu rezultirati značajnom krivo raspodijeljenom energijom između operatora prijenosnih sustava odnosno potencijalnom financijskom štetom za sudionike razmjene.

U okviru disertacije proveden je postupak izračuna mjerne nesigurnosti otpora prijenosnog voda i gubitaka s pomoću GUM i Monte Carlo metode. Za potrebe potonje metode proveden je postupak procjene razdiobe izlazne veličine. Također je razvijen je način utvrđivanja mjerne nesigurnosti razmijenjene energije i gubitaka prijenosa što uključuje metodu za ispravak razmijenjene energije i gubitaka za iznos sistematskih pogrešaka čime je smanjena ukupna mjerna nesigurnost te metodu za raspodjelu razmijenjene energije i pripadajućih gubitaka. Praktični rezultati pokazuju da je mjerna nesigurnost smanjena nakon ispravka sistematskih pogrešaka čime je potvrđena hipoteza disertacije. Može se zaključiti da ova metoda predstavlja pravedniji način za utvrđivanje razmijenjene energije i gubitaka prijenosa kod prekogranične razmjene energije.

**Ključne riječi:** procjena mjerne nesigurnosti, Monte Carlo metoda, prekogranična razmjena električne energije, gubici prijenosa

# **The importance of measurement of transmission losses and associated measurement uncertainty on the cross-border energy exchange**

## **ABSTRACT**

In the initial phase of the research process, a review of scientific literature was performed regarding the measurement uncertainty calculation methods. It is found that the most commonly used method is according to the internationally accepted document "Guide to the expression of uncertainty in measurement", i.e. GUM method. However, this method contains certain deficiencies and has been followed by the Supplement 1 which recommends using the Monte Carlo method. Furthermore, the dissertation presents the current method for determining the exchanged energy on the cross-border energy exchange as well as methods for calculation of the transmission losses. It is found that the actual methods do not involve measurement uncertainty nor systematic errors in the calculation procedure. Namely, due to large amounts of exchanged energy small percentages of systemic errors can result in significant erroneously associated energy to the transmission system operators, i.e. potential financial damage for energy exchange participants.

A method for calculating the measurement uncertainty of transmission line resistance and transmission line losses using the GUM and the Monte Carlo method is developed. For the purpose of the latter method, the procedure for estimating the distribution of the output value is performed. A method for determining the measurement uncertainty of the exchange of energy and the transmission losses, including the method for correcting the exchanged energy and transmission losses for the amount of systematic errors is developed, thus reducing the total measurement uncertainty. A method for allocating the exchanged energy and the transmission losses between transmission system operators is developed as well. Practical results show that the measurement uncertainty is reduced after correcting systematic errors, thus confirming the hypothesis of the dissertation. It can be concluded that this method represents a fairer way to determine the exchanged energy and the transmission losses on the cross-border energy exchange.

**Keywords:** measurement uncertainty estimation, Monte Carlo method, cross-border energy exchange, transmission losses

## **ŽIVOTOPIS**

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