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FCC
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BMML-20131031AHM

FCC 302-AM
APPLICATION FOR AM
BROADCAST STATION LICENSE

(Please read instructions before filling out form.)

FOR COMMISSION USE ONLY

FILE NO.

Accepted/Files

SECTION I - APPLICANT FEE INFORMATION

OCT 31 2013

1. PAYOR NAME (Last, First, Middle Initial)

NEW YORK PUBLIC RADIO

Federal Communications Commission
Office of the Secretary

MAILING ADDRESS (Line 1) (Maximum 35 characters)

160 VARICK STREET

MAILING ADDRESS (Line 2) (Maximum 35 characters)

7TH FLOOR

CITY

NEW YORK

STATE OR COUNTRY (if foreign address)

NY

ZIP CODE

10013

TELEPHONE NUMBER (include area code)

(646) 829-4400

CALL LETTERS

WNYC (AM)

OTHER FCC IDENTIFIER (if applicable)

73357

2. A. Is a fee submitted with this application?



Yes



No

B. If No, indicate reason for fee exemption (see 47 C.F.R. Section



Governmental Entity



Noncommercial educational licensee



Other (Please explain):

C. If Yes, provide the following information:

Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in the "Mass Media Services Fee Filing Guide." Column (B) lists the Fee Multiple applicable for this application. Enter fee amount due in Column (C).

(A) FEE TYPE CODE		
M	M	R

(B) FEE MULTIPLE			
0	0	0	1

(C) FEE DUE FOR FEE TYPE CODE IN COLUMN (A)
\$ 635.00

FOR FCC USE ONLY

To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.

(A)		
M	O	R

(B)			
0	0	0	1

(C)
\$ 730.00

FOR FCC USE ONLY

ADD ALL AMOUNTS SHOWN IN COLUMN C,
AND ENTER THE TOTAL HERE.
THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED
REMITTANCE.

TOTAL AMOUNT REMITTED WITH THIS APPLICATION
\$ 1,365.00

FOR FCC USE ONLY

SECTION II - APPLICANT INFORMATION		
1. NAME OF APPLICANT NEW YORK PUBLIC RADIO		
MAILING ADDRESS 160 VARICK STREET, 7TH FLOOR		
CITY NEW YORK	STATE NY	ZIP CODE 10013

2. This application is for:

- ☒ Commercial
 ☐ Noncommercial
☒ AM Directional
 ☐ AM Non-Directional

Call letters WNYC	Community of License NEW YORK	Construction Permit File No. N/A	Modification of Construction Permit File No(s). N/A	Expiration Date of Last Construction Permit N/A
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3. Is the station now operating pursuant to automatic program test authority in accordance with 47 C.F.R. Section 73.1620?

☐ Yes ☐ No

Exhibit No.

If No, explain in an Exhibit. N/A -- NO CONSTRUCTION PERMIT

4. Have all the terms, conditions, and obligations set forth in the above described construction permit been fully met?

☐ Yes ☐ No

Exhibit No.

If No, state exceptions in an Exhibit. N/A -- NO CONSTRUCTION PERMIT

5. Apart from the changes already reported, has any cause or circumstance arisen since the grant of the underlying construction permit which would result in any statement or representation contained in the construction permit application to be now incorrect?

☐ Yes ☐ No

Exhibit No.

If Yes, explain in an Exhibit. N/A -- NO CONSTRUCTION PERMIT

6. Has the permittee filed its Ownership Report (FCC Form 323) or ownership certification in accordance with 47 C.F.R. Section 73.3615(b)?

☐ Yes ☐ No

☒ Does not apply

Exhibit No.

If No, explain in an Exhibit.

7. Has an adverse finding been made or an adverse final action been taken by any court or administrative body with respect to the applicant or parties to the application in a civil or criminal proceeding, brought under the provisions of any law relating to the following: any felony; mass media related antitrust or unfair competition; fraudulent statements to another governmental unit; or discrimination?

☐ Yes ☒ No

Exhibit No.

If the answer is Yes, attach as an Exhibit a full disclosure of the persons and matters involved, including an identification of the court or administrative body and the proceeding (by dates and file numbers), and the disposition of the litigation. Where the requisite information has been earlier disclosed in connection with another application or as required by 47 U.S.C. Section 1.65(c), the applicant need only provide: (i) an identification of that previous submission by reference to the file number in the case of an application, the call letters of the station regarding which the application or Section 1.65 information was filed, and the date of filing; and (ii) the disposition of the previously reported matter.

8. Does the applicant, or any party to the application, have a petition on file to migrate to the expanded band (1605-1705 kHz) or a permit or license either in the existing band or expanded band that is held in combination (pursuant to the 5 year holding period allowed) with the AM facility proposed to be modified herein?

☐ Yes ☒ No

If Yes, provide particulars as an Exhibit.

Exhibit No.

The APPLICANT hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because use of the same, whether by license or otherwise, and requests and authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended).

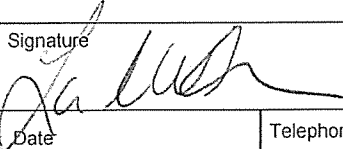
The APPLICANT acknowledges that all the statements made in this application and attached exhibits are considered material representations and that all the exhibits are a material part hereof and are incorporated herein as set out in full in

CERTIFICATION

1. By checking Yes, the applicant certifies, that, in the case of an individual applicant, he or she is not subject to a denial of federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862, or, in the case of a non-individual applicant (e.g., corporation, partnership or other unincorporated association), no party to the application is subject to a denial of federal benefits that includes FCC benefits pursuant to that section. For the definition of a "party" for these purposes, see 47 C.F.R. Section 1.2002(b).

☒ Yes ☐ No

2. I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Name LAURA WALKER	Signature 	
Title PRESIDENT & CEO	Date 10/30/2013	Telephone Number (646) 829-4400

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION

FCC NOTICE TO INDIVIDUALS REQUIRED BY THE PRIVACY ACT AND THE PAPERWORK REDUCTION ACT

The solicitation of personal information requested in this application is authorized by the Communications Act of 1934, as amended. The Commission will use the information provided in this form to determine whether grant of the application is in the public interest. In reaching that determination, or for law enforcement purposes, it may become necessary to refer personal information contained in this form to another government agency. In addition, all information provided in this form will be available for public inspection. If information requested on the form is not provided, the application may be returned without action having been taken upon it or its processing may be delayed while a request is made to provide the missing information. Your response is required to obtain the requested authorization.

Public reporting burden for this collection of information is estimated to average 639 hours and 53 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, can be sent to the Federal Communications Commission, Records Management Branch, Paperwork Reduction Project (3060-0627), Washington, D. C. 20554. Do NOT send completed forms to this address.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), AND THE PAPERWORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.

SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant

New York Public Radio

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

☒ Station License
BMML-

☐ Direct Measurement of Power

1. Facilities authorized in construction permit

Call Sign	File No. of Construction Permit (if applicable)	Frequency (kHz)	Hours of Operation	Power in kilowatts	
WNYC		820	Unlimited	Night 1	Day 10

2. Station location

State	City or Town
New York	New York

3. Transmitter location

State	County	City or Town	Street address (or other identification)
NJ	Hudson	Kearny	949 Belleville Turnpike

4. Main studio location

State	County	City or Town	Street address (or other identification)
NY	Manhattan	New York	160 Varick Street

5. Remote control point location (specify only if authorized directional antenna)

State	County	City or Town	Street address (or other identification)
NY	Manhattan	New York	160 Varick Street

6. Has type-approved stereo generating equipment been installed?

☐ Yes ☒ No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68?

☒ Yes ☐ No

☐ Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed.

Exhibit No.
Eng Stmt

8. Operating constants:

RF common point or antenna current (in amperes) without modulation for night system 4.65	RF common point or antenna current (in amperes) without modulation for day system 14.51
Measured antenna or common point resistance (in ohms) at operating frequency Night 50 Day 50	Measured antenna or common point reactance (in ohms) at operating frequency Night +j0 Day +j0

Antenna indications for directional operation

Towers	Antenna monitor Phase reading(s) in degrees		Antenna monitor sample current ratio(s)		Antenna base currents	
	Night	Day	Night	Day	Night	Day
1	+80.4	+101.5	0.693	1.119	----	----
2	0.0	0.0	1.000	1.000	----	----
3	-68.0	-92.3	0.392	0.226	----	----

Manufacturer and type of antenna monitor: Potomac Instruments, Model 1901-3, S/N 711

SECTION III - Page 2

9. Description of antenna system (If directional antenna is used, the information requested below should be given for each element of the array. Use separate sheets if necessary.)

Type Radiator	Overall height in meters of radiator above base insulator, or above base, if grounded.	Overall height in meters above ground (without obstruction lighting)	Overall height in meters above ground (include obstruction lighting)	If antenna is either top loaded or sectionalized, describe fully in an Exhibit.
Vertical, tapered, triangular, wide based, self-supported steel tower	99.1	101.2	102.1	Exhibit No. N/A

Excitation ☒ Series ☐ Shunt

Geographic coordinates to nearest second. For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

North Latitude	40 °	45 '	10 "	West Longitude	74 °	06 '	15 "
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If not fully described above, attach as an Exhibit further details and dimensions including any other antenna mounted on tower and associated isolation circuits.

Exhibit No.
N/A

Also, if necessary for a complete description, attach as an Exhibit a sketch of the details and dimensions of ground system.

Exhibit No.
On File

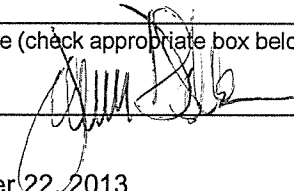
10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

N/A

11. Give reasons for the change in antenna or common point resistance.

N/A

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Name (Please Print or Type)	Signature (check appropriate box below)
James D. Sadler	
Address (include ZIP Code)	Date
Carl T. Jones Corporation	October 22, 2013
7901 Yarnwood Court	Telephone No. (Include Area Code)
Springfield, VA 22153	(703) 569-7704

☐ Technical Director

☐ Registered Professional Engineer

☐ Chief Operator

☒ Technical Consultant

☐ Other (specify)



**ENGINEERING EXHIBIT
IN SUPPORT OF AN
APPLICATION FOR STATION LICENSE
STATION WNYC – NEW YORK, NEW YORK
820 kHz - 10 kW-D, 1 kW-N, U, DA-2
FACILITY ID: 73357**

Applicant: New York Public Radio

OCTOBER, 2013

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Springfield, VA 22153-2899

⋮

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⋮

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ENGINEERING STATEMENT OF JAMES D. SADLER

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**ENGINEERING STATEMENT OF JAMES D. SADLER
IN SUPPORT OF AN
APPLICATION FOR STATION LICENSE
STATION WNYC – NEW YORK, NEW YORK
820 kHz - 10 kW-D, 1 kW-N, U, DA-2
FACILITY ID: 73357**

Applicant: New York Public Radio

I am a Technical Consultant, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission.

1.0 GENERAL

This office has been authorized by New York Public Radio ("NYPR"), licensee of AM Station WNYC, to prepare this engineering statement and the associated figures and appendices in support of an Application for License. Station WNYC is licensed for operation on 820 kilohertz at a power of 10 kilowatts during daytime hours and 1 kilowatt during nighttime hours using a different directional pattern for daytime and nighttime operation (DA-2). The transmitter site is shared with Station WMCA, New York, New York. WMCA is licensed for operation on 570 kilohertz. Both facilities were severely damaged by Hurricane Sandy and have been reconstructed. The rebuilt daytime and nighttime directional antenna system antenna pattern performance has been verified using computer modeling and sample system verification techniques, as

described in Section 47 CFR 73.151(c) of the Commission's Rules and Regulations. The specific measurement and modeling techniques used in performing the proof of performance on the WNYC daytime and nighttime directional patterns are described in detail in this engineering statement. Impedance measurement data, sample system verification measurement data and model derived operating parameters are tabulated in the figures attached to this engineering statement. Finally, all pertinent computer model input and output files are contained in the attached Appendices A, B, and C.

The reconstruction of the WNYC facilities included: 1) purchase and installation of a new antenna coupling system and diplexer circuitry; 2) purchase and installation of new transmission lines, sample lines and control wiring; 3) complete replacement of the catwalks providing access to the towers; and 4) raising and restoration of the equipment buildings at the base of the towers above the recently updated 100 year flood plane. A schematic diagram of the new phasing and coupling system and diplexer circuitry is contained in Figure 8.

2.0 IMPEDANCE MEASUREMENTS, COMPUTER MODELING AND SAMPLE SYSTEM VERIFICATION

The proof of performance contained herein is based on the computer modeling and sample system verification procedures described in Section 47 CFR 73.151(c) of the FCC's Rules and Regulations. The WNYC antenna array consists of three identical, vertical, tapered, triangular, self-supporting, steel, series-fed towers. All towers have an electrical height of 97.54 degrees (99.06 meters). The sampling system employs

identical toroidal current transformers located at the output of the antenna matching network and prior to the input to the diplexer filter networks at the base of each tower.

A detailed description of the impedance and sample system measurements, the computer models employed, and the sample system verification measurements, is contained below.

2.1 INDIVIDUAL TOWER IMPEDANCE MEASUREMENTS

Impedance measurements were performed at the base of each tower, by Mr. Carl T. Jones, Jr., president of this firm, at the output J-Plug of the antenna matching network. This measurement location corresponds to the input to the diplexer filter networks and the location of the sampling system toroidal current transformer. The impedance measurements were performed using a Hewlett-Packard Model 4396A network analyzer; an Amplifier Research Model 5W1000 power amplifier; and a Tunwall Radio directional coupler. The impedance of each tower was measured with the other two towers open-circuited at the corresponding J-Plug location. The measured impedances are tabulated in Figure 3.

2.2 INDIVIDUAL TOWER COMPUTER MODELS

A Method of Moments ("MoM") computer model was developed to model each element in the array using Expert MiniNEC Broadcast Professional (Version 12.5). This version of the software has been found to handle complex tower models better than the newer versions. The WNYC towers are equal height, tapered, wide-based, self-

supporting structures with base insulators. Each tower was modeled using multiple wires to represent the legs and connecting members. Structural drawings of the actual towers were used to faithfully reproduce the geometry of each individual tower in the model. Included in the model were only a few of the horizontal and none of the diagonal cross members. A scale drawing of the wire frame model based on the actual physical height of the structure is shown in Figure 1.

Each tower is constructed on elevated piers such that the bases of the towers are above the former 100 year flood plane. The model has accounted for this by elevating the bases of the towers an equivalent height above the ground plane and extending ground connections from the base of the tower insulators to the ground plane. Capacitive loads of 15 picofarads were included in each of the three tower legs to represent the high impedance tower base insulators.

To replicate the individual measured base impedances to within FCC specified tolerances, it was necessary to adjust the physical height of the three towers in the MiniNEC model and, in a separate circuit model, to add a small amount of series inductance and shunt capacitance with the model derived base impedance of each tower. Details of the modeled individual tower adjusted heights are contained in Figure 2. The values of the lumped series inductances and capacitances used in the circuit model are contained in Figure 3. A comparison of the measured individual tower impedances, the modeled individual tower impedances, and the adjusted modeled (circuit model) individual tower impedances is also contained in Figure 3. The percentage difference between the adjusted modeled tower height and the actual

physical tower height and the magnitudes of the lumped series inductances and the shunt capacitances that were used in the circuit models are all within the tolerances set forth in the Rules.

As demonstrated by the data contained in Figure 3, the adjusted modeled individual tower resistance and reactance for each tower is well within ± 2 ohms and ± 4 percent tolerance of the corresponding measured individual tower resistance and reactance. The text files containing all pertinent input and output data associated with the individual tower models are contained in Appendix A.

2.3 DIRECTIONAL ANTENNA COMPUTER MODEL AND ANTENNA MONITOR PARAMETERS

The theoretical directional field parameters and the licensed tower spacings and orientations were used in combination with the adjusted individual tower models to produce the daytime and nighttime directional antenna computer models. From the computer model for each pattern, tower currents were derived for each wire segment of each antenna. Each segment current was multiplied by the segment length and numerically integrated and normalized to the appropriate reference tower to verify that the modeled current moments are essentially identical to the authorized relative directional field parameters.

The new daytime and nighttime directional array operating parameters were determined from the modeled base currents and are tabulated in Figure 4. The text files

containing all pertinent input and output data associated with the daytime and nighttime directional antenna computer model are contained in Appendix B and C, respectively.

2.4 SAMPLE SYSTEM DESCRIPTION AND VERIFICATION MEASUREMENTS

The WNYC antenna sampling is comprised of: 1) Delta Electronics, Model TCT-3, toroidal current transformers mounted in an identical manner in the output branch of each tower's impedance matching network; 2) equal lengths of Radio Frequency Systems, Type LCF12-50J, phase stabilized, 1/2-inch, foam dielectric, coaxial cable between each toroidal current transformer and the transmitter building; 3) three foot jumper cables of Andrew Corporation, Type FSJ4-50B, 1/2-inch, superflex, foam dielectric, coaxial cable between the LCF12-50J sample cables and the antenna monitor; and 4) a Potomac Instruments, Model 1901-3, antenna monitor. Each sample line between the ATU building and the transmitter building, including excess lengths, is fastened to the handrail on the catwalk running between the towers; therefore, each sample line is subjected to the same environmental conditions.

The sample lines, including the superflex jumper cables, were verified to be equal in length by measuring the open-circuit series resonate frequency closest to the carrier frequency. The characteristic impedance was verified by measuring the impedance at frequencies corresponding to odd multiples of $1/8$ wavelength immediately above and below the open circuit series resonant frequency closest to the carrier frequency, while the line was open-circuited at the sample element end of the line. The characteristic impedance was calculated by the following formula:

$$Z = \sqrt{\sqrt{R_1^2 + X_1^2} \times \sqrt{R_2^2 + X_2^2}}$$

where:

Z = Characteristic impedance and

$R_1 + jX_1$ and $R_2 + jX_2$ are the measured impedances

at ± 45 degrees offset frequencies.

A tabulation of the measured sample line lengths and the characteristic impedance of each line is contained in Figure 5. All sample line verification measurements were performed by Mr. Carl T. Jones, Jr., using a Hewlett-Packard, Model 4396A, network analyzer; an Amplifier Research, Model 5W1000, power amplifier; and a Tunwall Radio directional coupler. As demonstrated by the measured values in Figure 5, the measured sample line lengths are within 1 electrical degree with respect to each other and the measured characteristic impedances are well within 2 ohms of each other, as required by Section 47 CFR 73.151(c)(2)(I) of the FCC Rules and Regulations.

An impedance measurement was performed at the input to each sample line, at the antenna monitor end of the line, with the toroidal current transformer connected. The measurement was performed at the WNYC operating frequency of 820 kilohertz. The measured sample line impedances with the current transformers connected are tabulated in Figure 5 under the heading "Reference Impedance Sample Transformer Connected." The performance of the toroidal current transformers was verified by driving a common reference current through all three transformers and comparing the

relative outputs as observed on the network analyzer. The test confirmed that the performance of all three of the WNYC current transformers is well within the manufacturer's stated accuracy. A tabulation of the toroidal current transformer measurement data and the serial number of each toroidal current transformer is contained in Figure 6.

The antenna monitor that is employed at WNYC is a Potomac Instruments, Model 1901-3, Serial Number 711. The performance of the antenna monitor was verified, by Mr. Carl T. Jones, Jr., to be well within the manufacturer's stated accuracy. The verification was performed by comparison of the measured relative daytime directional operating parameters, as observed on the antenna monitor, with those measured using the network analyzer when the phasing and coupling system common point was driven with the network analyzer swept source through a power amplifier.

3.0 COMMON POINT IMPEDANCE AND COMMON POINT CURRENT

The networks associated with the daytime and nighttime directional antenna systems were adjusted for proper impedance transformation and the common point impedance matching network was set for $Z = 50 + j 0$ Ohms. The transmitter output power level was adjusted for a daytime common point current of 14.51 amperes and a nighttime common point current of 4.65 amperes corresponding to daytime and nighttime input powers of 10,530 Watts and 1,080 Watts, respectively.

4.0 REFERENCE FIELD STRENGTH MEASUREMENTS

Reference field strength measurements were performed on the following three radial bearings in the daytime directional antenna mode: 117°, 244°, and 320°. In the nighttime directional antenna mode, reference field strength measurements were performed on the following six radial bearings: 60°, 144°, 237°, 258°, 306°, and 327°.

The measurements were performed by Mr. Mark Olkowski and Mr. Peter Polanco, both are contract engineers for NYPR. Two field strength meters were used to perform the measurements: Potomac Instruments, Model FIM-41, Serial Number 1459, last calibrated by the manufacturer in June, 2010 and Potomac Instruments, Model PI 4100, Serial Number 256, last calibrated in January 2013. The performance of the field intensity meters were checked against one another and determined to be within the manufacturers stated accuracy.

The measured field strength value for each established reference point location is tabulated in Figure 7, Sheets 1 through 5. The tabulations contained in Figure 7 also include for each reference location; GPS coordinates (NAD83), distance from the WNYC array center, and a description of measurement location.

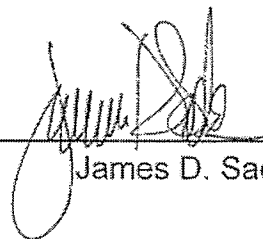
SUMMARY

It is submitted that the WNYC daytime and nighttime directional pattern performance has been verified using computer modeling and sample system verification procedures in accordance with Section 47 CFR 73.151(c) of the Commission's Rules and Regulations. It is believed that the directional antenna system, as adjusted, fully

complies with the terms of the station's FCC Authorization and all applicable FCC Rules and Regulations. It is requested that a superseding license be issued to NYPR reflecting the new MoM model derived operating parameters as contained herein.

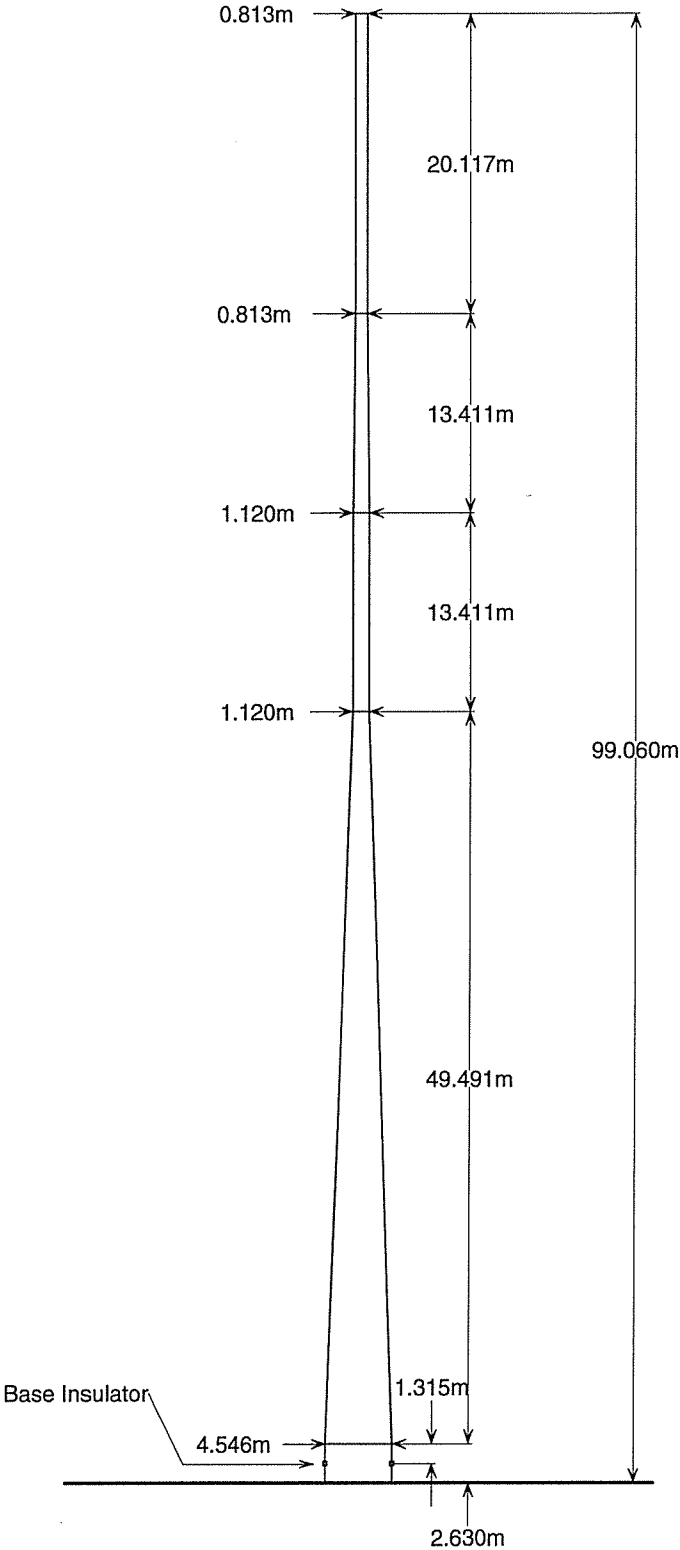
This engineering statement and the attached figures and appendices were prepared by the undersigned or under the direct supervision of the undersigned and are believed to be true and correct.

Dated: October 22, 2013



James D. Sadler

Figure 1



WIREFRAME TOWER MODEL
STATION WNYC - NEW YORK, NEW YORK
820 kHz - 10 kW-D, 1 kW-N, U, DA-2
OCTOBER, 2013

TOWER MODEL HEIGHT AND RADIUS

STATION WNYC - NEW YORK, NEW YORK

820 kHz - 10 kW-D, 1 kW-N, U, DA-2

OCTOBER, 2013

Tower	Physical Height (degrees)	Modeled Height (degrees)	Modeled Radius (meters)	Percent of Equivalent Radius
1	97.54	98.52	See Note	See Note
2	97.54	99.49	See Note	See Note
3	97.54	101.44	See Note	See Note

Note: The complete structure of the wide-based self-supporting towers was modeled using thin wires of a radius typically found in such construction. The actual width of the triangular, tapered tower as determined from structural drawings was used in the model. A scale drawing of the wireframe model based on the actual physical height and width is contained in Figure 1.

MEASURED AND MODELED IMPEDANCES

STATION WNYC - NEW YORK, NEW YORK

820 kHz - 10 kW-D, 1 kW-N, U, DA-2

OCTOBER, 2013

Tower	Measured Tower Base Impedance ¹	Modeled Tower Base Impedance	Shunt Capacitance (pF)	Modeled plus Shunt Reactance	Lumped Series Inductance (uH)	Adjusted Tower Base Impedance
1	53.3 +j 50.4	52.1 +j 48.3	50.0	53.4 +j 48.2	0.4	53.4 +j 50.2 ✓
2	53.0 +j 62.0	51.8 +j 56.6	43.0	53.1 +j 56.7	1.0	53.1 +j 61.9 ✓
3	61.2 +j 65.1	59.4 +j 63.5	45.0	61.2 +j 63.6	0.3	61.2 +j 65.2 ✓

¹ Measured at output of matching network with other towers open-circuited.

ANTENNA MONITOR PARAMETERS AND COMMON POINT DATA

STATION WNYC - NEW YORK, NEW YORK

820 kHz - 10 kW-D, 1 kW-N, U, DA-2

OCTOBER, 2013

DAYTIME		
Tower	Modeled Parameters	
	Ratio	Phase (deg)
1	1.119	101.5
2	1.000	0.0
3	0.226	-92.3
Common Point Impedance = 50 +j 0 ohms Common Point Current = 14.51 amperes Antenna Input Power = 10,530 Watts		

NIGHTTIME		
Tower	Modeled Parameters	
	Ratio	Phase (deg)
1	0.693	80.4
2	1.000	0.0
3	0.392	-68.0
Common Point Impedance = 50 +j 0 ohms Common Point Current = 4.65 amperes Antenna Input Power = 1,080 Watts		

SAMPLE LINE VERIFICATION MEASUREMENTS

STATION WNYC - NEW YORK, NEW YORK

820 kHz - 10 kW-D, 1 kW-N, U, DA-2

OCTOBER, 2013

Tower	Open Circuit Series Resonant Frequency ¹ (kHz)	Open Circuit Measured Line Length ² (degrees)	Resonant Frequency -45 degree Offset Frequency (kHz)	Resonant Frequency -45 degree Offset Impedance (Ohms)	Resonant Frequency +45 degree Offset Frequency (kHz)	Resonant Frequency +45 degree Offset Impedance (Ohms)	Calculated Characteristic Impedance (Ohms)	Reference Impedance Sample Toroid Connected ² (Ohms)
1	723.030	510.352	650.727	8.09 -j 47.47	795.333	10.12 +j 47.39	48.31	46.85 +j 0.27
2	722.870	510.465	650.583	8.02 -j 47.52	795.157	10.16 +j 47.33	48.30	46.71 +j 0.36
3	722.720	510.571	650.448	8.12 -j 47.59	794.992	10.02 +j 47.22	48.27	46.96 +j 0.67

¹ At this frequency, the sample line electrical length is equal to 450°.

² At carrier frequency (820 kHz)

SAMPLE DEVICE VERIFICATION MEASUREMENTS

STATION WNYC - NEW YORK, NEW YORK

820 kHz - 10 kW-D, 1 kW-N, U, DA-2

OCTOBER, 2013

Reference Sample Toroid Number	Measured Sample Toroid Number	Measured	
		Field Ratio	Phase (degrees)
1	2	0.995	-10.7
3	2	0.995	-10.7
3	1	0.994	-10.5

Sample Toroid Number	Type	Serial Number
1	Delta Electronics, TCT-3	18171
2	Delta Electronics, TCT-3	18167
3	Delta Electronics, TCT-3	18172

Note: Additional cable length added to the Non-reference toroid so that the sample phase would be something other than zero.

REFERENCE FIELD STRENGTH MEASUREMENTS

STATION WNYC - NEW YORK, NEW YORK

820 kHz - 10 kW-D, 1 kW-N, U, DA-2

OCTOBER, 2013

60 Degree Radial

Point Number	Distance (km)	Daytime Field (mV/m)	Nighttime Field (mV/m)	Geographic Coordinates (NAD83)		Description
				Latitude	Longitude	
1	3.71	---	131	40° 46' 13"	74° 03' 56"	The point is located in the middle of the (Sunoco) employee parking lot behind #176 County Road (Dead End).
2	7.78	---	89	40° 47' 19"	74° 01' 25"	The point is located in driveway, 50 ft from generator, toward the entrance of the inside parking garage for Avalon Apts, #5665 JFK Blvd.
3	9.97	---	69	40° 47' 54"	74° 00' 05"	The point is located in the middle of the street across from #7805 Broadway (Apartment Building).

117 Degree Radial

Point Number	Distance (km)	Daytime Field (mV/m)	Nighttime Field (mV/m)	Geographic Coordinates (NAD83)		Description
				Latitude	Longitude	
1	3.93	532	---	40° 44' 15"	74° 03' 44"	The point is located at #3050 JFK Blvd., in open area by paved circle in front of tree.
2	6.56	103	---	40° 43' 36"	74° 02' 04"	The point is located in center island, W side across from Marriott Hotel at #540 Washington Blvd.
3	9.33	77	---	40° 42' 55"	74° 01' 08"	The point is located on the sidewalk at #28 Federal Plaza, across street from #315 Broadway.

REFERENCE FIELD STRENGTH MEASUREMENTS

STATION WNYC - NEW YORK, NEW YORK

820 kHz - 10 kW-D, 1 kW-N, U, DA-2

OCTOBER, 2013

144 Degree Radial

Point Number	Distance (km)	Daytime Field (mV/m)	Nighttime Field (mV/m)	Geographic Coordinates (NAD83)		Description
				Latitude	Longitude	
1	3.06	---	126	40° 43' 52"	74° 04' 56"	The point is located in Holy Name Cemetery (Area 5) at the Frank A. Caruso grave marker.
2	4.46	---	140	40° 43' 16"	74° 04' 21"	The point is located on the sidewalk on the NE side, in front of extreme right door, of Metropolitan AME Zion Church at Bergen and Belmont Aves.
3	7.38	---	66	40° 42' 00"	74° 03' 08"	The point is located in Liberty State Park, on the east side of jogging path on Freedom Way directly across from the fire hydrant that is located in the divided roadway.

237 Degree Radial

Point Number	Distance (km)	Daytime Field (mV/m)	Nighttime Field (mV/m)	Geographic Coordinates (NAD83)		Description
				Latitude	Longitude	
1	4.32	---	34	40° 43' 56"	74° 08' 48"	The point is located on the sidewalk directly across the street from the front door to #25 Lexington St.
2	5.63	---	20	40° 43' 33"	74° 09' 35"	The point is located on the sidewalk, across the street in line with the front door of #339 Walnut St.
3	7.41	---	12	40° 43' 01"	74° 10' 39"	The point is located on the sidewalk at #230 Vanderpool St. The location is currently an vacant lot.

REFERENCE FIELD STRENGTH MEASUREMENTS

STATION WNYC - NEW YORK, NEW YORK

820 kHz - 10 kW-D, 1 kW-N, U, DA-2

OCTOBER, 2013

244 Degree Radial

Point Number	Distance (km)	Daytime Field (mV/m)	Nighttime Field (mV/m)	Geographic Coordinates (NAD83)		Description
				Latitude	Longitude	
1	4.79	47	---	40° 44' 05"	74° 09' 17"	The point is located on the sewer grate on the right side of Jackson St., immediately past bridge (pull in).
2	7.01	37	---	40° 43' 33"	74° 10' 44"	The point is located on the utility cover in Lincoln Park across from #145 Lincoln Park (Newark School of the Arts).
3	9.21	27	---	40° 43' 02"	74° 12' 07"	The point is located on the sidewalk along SW side of #777 Bergen St., 50 ft from intersection with W. Runyon St.

258 Degree Radial

Point Number	Distance (km)	Daytime Field (mV/m)	Nighttime Field (mV/m)	Geographic Coordinates (NAD83)		Description
				Latitude	Longitude	
1	4.01	---	12	40° 44' 45"	74° 09' 01"	The point is located on the corner of #200 7th St.
2	4.24	---	4.5	40° 44' 34"	74° 10' 14"	The point is located on the sidewalk directly across the street from #20 Washington Ave. (Veteran's Admin. Building) in line with front door.
3	9.04	---	3.5	40° 44' 11"	74° 12' 31"	The point is located on the sidewalk (park side of West Side Park) in line with the front door of #569 S 17th St.

REFERENCE FIELD STRENGTH MEASUREMENTS

STATION WNYC - NEW YORK, NEW YORK

820 kHz - 10 kW-D, 1 kW-N, U, DA-2

OCTOBER, 2013

306 Degree Radial

Point Number	Distance (km)	Daytime Field (mV/m)	Nighttime Field (mV/m)	Geographic Coordinates (NAD83)		Description
				Latitude	Longitude	
1	3.31	---	14.5	40° 46' 15"	74° 08' 07"	The point is located on the sidewalk directly in line with the front door of #682 Schuyler Ave.
2	8.49	---	2.5	40° 47' 54"	74° 11' 08"	The point is located on the sidewalk directly in front of the door of #151 Orchard St.
3	9.48	---	6	40° 48' 13"	74° 11' 42"	The point is located on the sidewalk directly across the street in line with the front door of #290 Broad St.

320 Degree Radial

Point Number	Distance (km)	Daytime Field (mV/m)	Nighttime Field (mV/m)	Geographic Coordinates (NAD83)		Description
				Latitude	Longitude	
1	4.00	45	---	40° 46' 51"	74° 08' 03"	The point is located on the curb at #21 Exton Ave.
2	5.07	35	---	40° 47' 18"	74° 08' 32"	The point is located on the sidewalk, E side across from #107 Bathurst Ave.
3	9.16	14	---	40° 49' 00"	74° 10' 26"	The point is located on the sidewalk by sewer grate at #70 Hopper Ave.

REFERENCE FIELD STRENGTH MEASUREMENTS

STATION WNYC - NEW YORK, NEW YORK

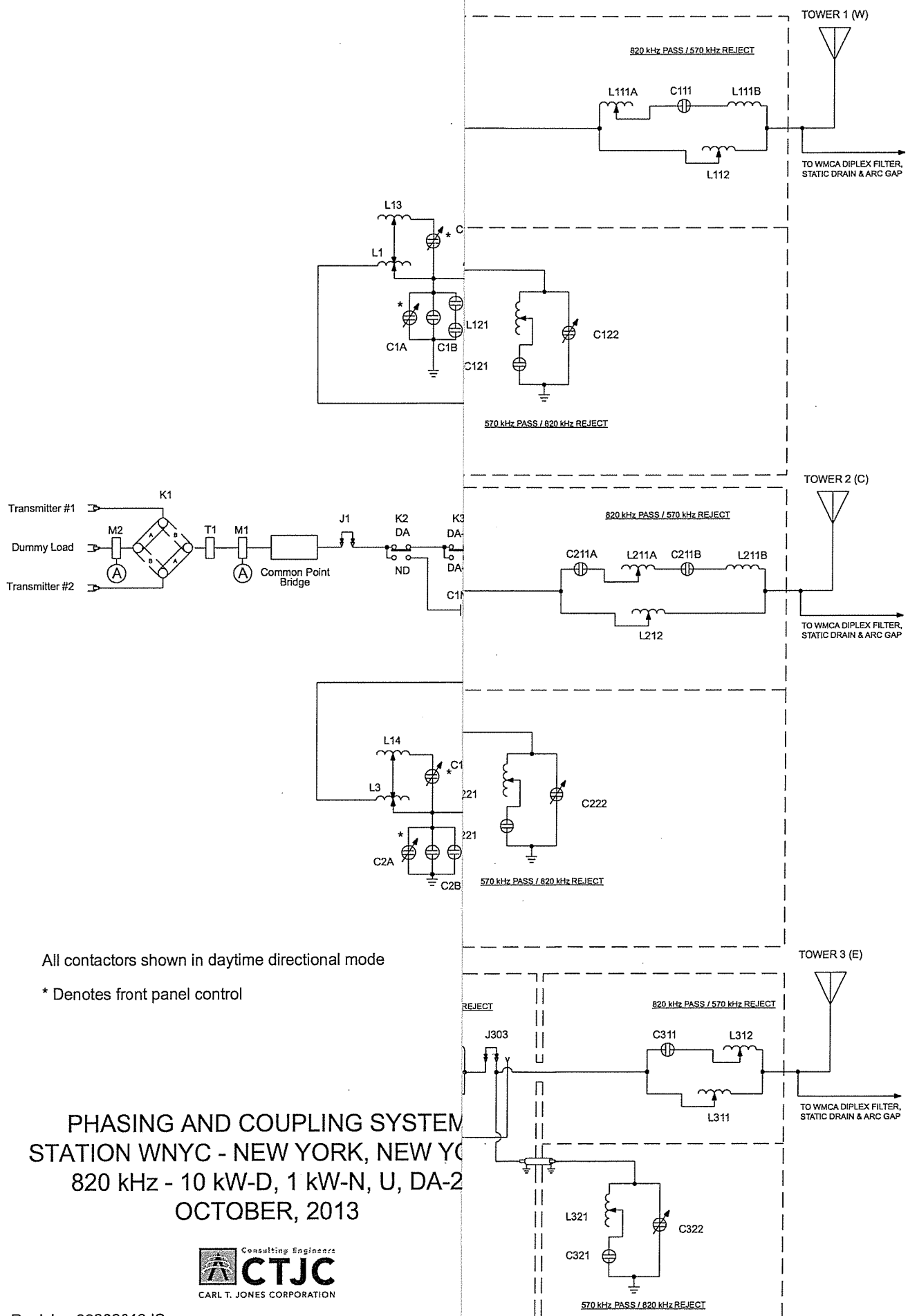
820 kHz - 10 kW-D, 1 kW-N, U, DA-2

OCTOBER, 2013

327 Degree Radial

Point Number	Distance (km)	Daytime Field (mV/m)	Nighttime Field (mV/m)	Geographic Coordinates (NAD83)		Description
				Latitude	Longitude	
1	3.77	---	42	40° 46' 55"	74° 07' 41"	The point is located in Holy Cross Cemetery in front of Helen Schultz grave marker, 110 Yards from Schuyler Ave., Cemetery entrance.
2	8.26	---	17.5	40° 48' 56"	74° 09' 25"	The point is located in Yantacaw Park, Park Drive, on elevated path 50 ft from street behind utility pole #PS 3571N7.
3	9.68	---	13	40° 49' 35"	74° 09' 59"	The point is located on the driveway apron of #259 Overlook Ave.

Figure 8



APPENDIX A
INDIVIDUAL TOWER MODELING

APPENDIX A – INDIVIDUAL TOWER MODEL WNYC(AM) – NEW YORK, NEW YORK

PAGE A-1

IMPEDANCE - TOWER #1

normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
.82	52.069	48.295	71.018	42.8	2.4971	-7.3693	-.87917

GEOMETRY- TOWER #1

Dimensions in meters

Environment: perfect ground

wire	caps	X	Y	Z	radius	segs
1	none	0	0	0	.0127	2
		0	0	2.6563		
2	none	2.625	0	0	.0333	2
		2.625	0	2.6563		
3	none	-1.313	2.274	0	.0333	2
		-1.313	2.274	2.6563		
4	none	-1.313	-2.274	0	.0333	2
		-1.313	-2.274	2.6563		
5	none	2.625	0	2.6563	.0127	2
		0	0	2.6563		
6	none	-1.313	2.274	2.6563	.0127	2
		0	0	2.6563		
7	none	-1.313	-2.274	2.6563	.0127	2
		0	0	2.6563		
8	none	2.625	0	2.6563	.0333	50
		.645	0	52.6422		
9	none	-1.313	2.274	2.6563	.0333	50
		-.323	.559	52.6422		
10	none	-1.313	-2.274	2.6563	.0333	50
		-.323	-.559	52.6422		
11	none	.645	0	52.6422	.0476	13
		.645	0	66.1873		
12	none	-.323	.559	52.6422	.0476	13
		-.323	.559	66.1873		
13	none	-.323	-.559	52.6422	.0476	13
		-.323	-.559	66.1873		
14	none	.645	0	66.1873	.0365	13
		.469	0	79.7324		
15	none	-.323	.559	66.1873	.0365	13
		-.235	.406	79.7324		
16	none	-.323	-.559	66.1873	.0365	13
		-.235	-.406	79.7324		
17	none	.469	0	79.7324	.027	20
		.469	0	100.051		
18	none	-.235	.406	79.7324	.027	20
		-.235	.406	100.051		
19	none	-.235	-.406	79.7324	.027	20
		-.235	-.406	100.051		
20	none	.645	0	52.6422	.0476	1
		-.323	.559	52.6422		
21	none	-.323	.559	52.6422	.0476	1
		-.323	-.559	52.6422		
22	none	-.323	-.559	52.6422	.0476	1
		.645	0	52.6422		
23	none	.645	0	66.1873	.0365	1
		-.323	.559	66.1873		
24	none	-.323	.559	66.1873	.0365	1
		-.323	-.559	66.1873		
25	none	-.323	-.559	66.1873	.0365	1
		.645	0	66.1873		

**APPENDIX A – INDIVIDUAL TOWER MODEL
WNYC(AM) – NEW YORK, NEW YORK**

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26	none	.469	0	79.7324	.027	1
		-.235	.406	79.7324		
27	none	-.235	.406	79.7324	.027	1
		-.235	-.406	79.7324		
28	none	-.235	-.406	79.7324	.027	1
		.469	0	79.7324		
29	none	.469	0	100.051	.027	1
		-.235	.406	100.051		
30	none	-.235	.406	100.051	.027	1
		-.235	-.406	100.051		
31	none	-.235	-.406	100.051	.027	1
		.469	0	100.051		
32	none	-24.3	114.3	0	.0127	2
		-24.3	114.3	2.6826		
33	none	-21.675	114.3	0	.0333	2
		-21.675	114.3	2.6826		
34	none	-25.613	116.574	0	.0333	2
		-25.613	116.574	2.6826		
35	none	-25.613	112.026	0	.0333	2
		-25.613	112.026	2.6826		
36	none	-21.675	114.3	2.6826	.0127	2
		-24.3	114.3	2.6826		
37	none	-25.613	116.574	2.6826	.0127	2
		-24.3	114.3	2.6826		
38	none	-25.613	112.026	2.6826	.0127	2
		-24.3	114.3	2.6826		
39	none	-21.675	114.3	2.6826	.0333	50
		-23.655	114.3	53.1634		
40	none	-25.613	116.574	2.6826	.0333	50
		-24.623	114.859	53.1634		
41	none	-25.613	112.026	2.6826	.0333	50
		-24.623	113.741	53.1634		
42	none	-23.655	114.3	53.1634	.0476	13
		-23.655	114.3	66.8426		
43	none	-24.623	114.859	53.1634	.0476	13
		-24.623	114.859	66.8426		
44	none	-24.623	113.741	53.1634	.0476	13
		-24.623	113.741	66.8426		
45	none	-23.655	114.3	66.8426	.0365	13
		-23.831	114.3	80.5219		
46	none	-24.623	114.859	66.8426	.0365	13
		-24.535	114.706	80.5219		
47	none	-24.623	113.741	66.8426	.0365	13
		-24.535	113.894	80.5219		
48	none	-23.831	114.3	80.5219	.027	20
		-23.831	114.3	101.041		
49	none	-24.535	114.706	80.5219	.027	20
		-24.535	114.706	101.041		
50	none	-24.535	113.894	80.5219	.027	20
		-24.535	113.894	101.041		
51	none	-23.655	114.3	53.1634	.0476	1
		-24.623	114.859	53.1634		
52	none	-24.623	114.859	53.1634	.0476	1
		-24.623	113.741	53.1634		
53	none	-24.623	113.741	53.1634	.0476	1
		-23.655	114.3	53.1634		
54	none	-23.655	114.3	66.8426	.0365	1
		-24.623	114.859	66.8426		
55	none	-24.623	114.859	66.8426	.0365	1
		-24.623	113.741	66.8426		
56	none	-24.623	113.741	66.8426	.0365	1
		-23.655	114.3	66.8426		

**APPENDIX A – INDIVIDUAL TOWER MODEL
WNYC(AM) – NEW YORK, NEW YORK**

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57	none	-23.831	114.3	80.5219	.027	1
		-24.535	114.706	80.5219		
58	none	-24.535	114.706	80.5219	.027	1
		-24.535	113.894	80.5219		
59	none	-24.535	113.894	80.5219	.027	1
		-23.831	114.3	80.5219		
60	none	-23.831	114.3	101.041	.027	1
		-24.535	114.706	101.041		
61	none	-24.535	114.706	101.041	.027	1
		-24.535	113.894	101.041		
62	none	-24.535	113.894	101.041	.027	1
		-23.831	114.3	101.041		
63	none	-48.6	228.6	0	.0127	2
		-48.6	228.6	2.7352		
64	none	-45.975	228.6	0	.0333	2
		-45.975	228.6	2.7352		
65	none	-49.913	230.874	0	.0333	2
		-49.913	230.874	2.7352		
66	none	-49.913	226.326	0	.0333	2
		-49.913	226.326	2.7352		
67	none	-45.975	228.6	2.7352	.0127	2
		-48.6	228.6	2.7352		
68	none	-49.913	230.874	2.7352	.0127	2
		-48.6	228.6	2.7352		
69	none	-49.913	226.326	2.7352	.0127	2
		-48.6	228.6	2.7352		
70	none	-45.975	228.6	2.7352	.0333	50
		-47.955	228.6	54.2058		
71	none	-49.913	230.874	2.7352	.0333	50
		-48.923	229.159	54.2058		
72	none	-49.913	226.326	2.7352	.0333	50
		-48.923	228.041	54.2058		
73	none	-47.955	228.6	54.2058	.0476	13
		-47.955	228.6	68.1533		
74	none	-48.923	229.159	54.2058	.0476	13
		-48.923	229.159	68.1533		
75	none	-48.923	228.041	54.2058	.0476	13
		-48.923	228.041	68.1533		
76	none	-47.955	228.6	68.1533	.0365	13
		-48.131	228.6	82.1007		
77	none	-48.923	229.159	68.1533	.0365	13
		-48.835	229.006	82.1007		
78	none	-48.923	228.041	68.1533	.0365	13
		-48.835	228.194	82.1007		
79	none	-48.131	228.6	82.1007	.027	20
		-48.131	228.6	103.022		
80	none	-48.835	229.006	82.1007	.027	20
		-48.835	229.006	103.022		
81	none	-48.835	228.194	82.1007	.027	20
		-48.835	228.194	103.022		
82	none	-47.955	228.6	54.2058	.0476	1
		-48.923	229.159	54.2058		
83	none	-48.923	229.159	54.2058	.0476	1
		-48.923	228.041	54.2058		
84	none	-48.923	228.041	54.2058	.0476	1
		-47.955	228.6	54.2058		
85	none	-47.955	228.6	68.1533	.0365	1
		-48.923	229.159	68.1533		
86	none	-48.923	229.159	68.1533	.0365	1
		-48.923	228.041	68.1533		
87	none	-48.923	228.041	68.1533	.0365	1
		-47.955	228.6	68.1533		

**APPENDIX A – INDIVIDUAL TOWER MODEL
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88	none	-48.131	228.6	82.1007	.027	1
		-48.835	229.006	82.1007		
89	none	-48.835	229.006	82.1007	.027	1
		-48.835	228.194	82.1007		
90	none	-48.835	228.194	82.1007	.027	1
		-48.131	228.6	82.1007		
91	none	-48.131	228.6	103.022	.027	1
		-48.835	229.006	103.022		
92	none	-48.835	229.006	103.022	.027	1
		-48.835	228.194	103.022		
93	none	-48.835	228.194	103.022	.027	1
		-48.131	228.6	103.022		

Number of wires = 93
current nodes = 987

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	89	.811996	63	1.3676
segment/radius ratio	11	21.8893	63	107.685
radius	1	.0127	11	.0476

ELECTRICAL DESCRIPTION - TOWER #1

Frequencies (MHz)

frequency		no. of steps	segment length (wavelengths)	
no.	lowest		minimum	maximum
1	.82	0	2.22E-03	3.74E-03

Sources

source	node	sector	magnitude	phase	type
1	1	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	4	0	0	0	1.5E-05	0
2	6	0	0	0	1.5E-05	0
3	8	0	0	0	1.5E-05	0
4	333	0	0	0	1.5E-05	0
5	335	0	0	0	1.5E-05	0
6	337	0	0	0	1.5E-05	0
7	662	0	0	0	1.5E-05	0
8	664	0	0	0	1.5E-05	0
9	666	0	0	0	1.5E-05	0
10	1	1.E-03	0	0	0	0
11	330	1.E-03	-4,513.75	0	0	0
12	659	1.E-03	-4,313.14	0	0	0

APPENDIX A – INDIVIDUAL TOWER MODEL WNYC(AM) – NEW YORK, NEW YORK

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IMPEDANCE - TOWER #2

normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 330, sector 1							
.82	51.811	56.616	76.745	47.5	2.8929	-6.2629	-1.1715

GEOMETRY - TOWER #2

Dimensions in meters

Environment: perfect ground

wire	caps	X	Y	Z	radius	segs
1	none	0	0	0	.0127	2
		0	0	2.6563		
2	none	2.625	0	0	.0333	2
		2.625	0	2.6563		
3	none	-1.313	2.274	0	.0333	2
		-1.313	2.274	2.6563		
4	none	-1.313	-2.274	0	.0333	2
		-1.313	-2.274	2.6563		
5	none	2.625	0	2.6563	.0127	2
		0	0	2.6563		
6	none	-1.313	2.274	2.6563	.0127	2
		0	0	2.6563		
7	none	-1.313	-2.274	2.6563	.0127	2
		0	0	2.6563		
8	none	2.625	0	2.6563	.0333	50
		.645	0	52.6422		
9	none	-1.313	2.274	2.6563	.0333	50
		-.323	.559	52.6422		
10	none	-1.313	-2.274	2.6563	.0333	50
		-.323	-.559	52.6422		
11	none	.645	0	52.6422	.0476	13
		.645	0	66.1873		
12	none	-.323	.559	52.6422	.0476	13
		-.323	.559	66.1873		
13	none	-.323	-.559	52.6422	.0476	13
		-.323	-.559	66.1873		
14	none	.645	0	66.1873	.0365	13
		.469	0	79.7324		
15	none	-.323	.559	66.1873	.0365	13
		-.235	.406	79.7324		
16	none	-.323	-.559	66.1873	.0365	13
		-.235	-.406	79.7324		
17	none	.469	0	79.7324	.027	20
		.469	0	100.051		
18	none	-.235	.406	79.7324	.027	20
		-.235	.406	100.051		
19	none	-.235	-.406	79.7324	.027	20
		-.235	-.406	100.051		
20	none	.645	0	52.6422	.0476	1
		-.323	.559	52.6422		
21	none	-.323	.559	52.6422	.0476	1
		-.323	-.559	52.6422		
22	none	-.323	-.559	52.6422	.0476	1
		.645	0	52.6422		
23	none	.645	0	66.1873	.0365	1
		-.323	.559	66.1873		
24	none	-.323	.559	66.1873	.0365	1
		-.323	-.559	66.1873		
25	none	-.323	-.559	66.1873	.0365	1
		.645	0	66.1873		

**APPENDIX A – INDIVIDUAL TOWER MODEL
WNYC(AM) – NEW YORK, NEW YORK**

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26	none	.469	0	79.7324	.027	1
		-.235	.406	79.7324		
27	none	-.235	.406	79.7324	.027	1
		-.235	-.406	79.7324		
28	none	-.235	-.406	79.7324	.027	1
		.469	0	79.7324		
29	none	.469	0	100.051	.027	1
		-.235	.406	100.051		
30	none	-.235	.406	100.051	.027	1
		-.235	-.406	100.051		
31	none	-.235	-.406	100.051	.027	1
		.469	0	100.051		
32	none	-24.3	114.3	0	.0127	2
		-24.3	114.3	2.6826		
33	none	-21.675	114.3	0	.0333	2
		-21.675	114.3	2.6826		
34	none	-25.613	116.574	0	.0333	2
		-25.613	116.574	2.6826		
35	none	-25.613	112.026	0	.0333	2
		-25.613	112.026	2.6826		
36	none	-21.675	114.3	2.6826	.0127	2
		-24.3	114.3	2.6826		
37	none	-25.613	116.574	2.6826	.0127	2
		-24.3	114.3	2.6826		
38	none	-25.613	112.026	2.6826	.0127	2
		-24.3	114.3	2.6826		
39	none	-21.675	114.3	2.6826	.0333	50
		-23.655	114.3	53.1634		
40	none	-25.613	116.574	2.6826	.0333	50
		-24.623	114.859	53.1634		
41	none	-25.613	112.026	2.6826	.0333	50
		-24.623	113.741	53.1634		
42	none	-23.655	114.3	53.1634	.0476	13
		-23.655	114.3	66.8426		
43	none	-24.623	114.859	53.1634	.0476	13
		-24.623	114.859	66.8426		
44	none	-24.623	113.741	53.1634	.0476	13
		-24.623	113.741	66.8426		
45	none	-23.655	114.3	66.8426	.0365	13
		-23.831	114.3	80.5219		
46	none	-24.623	114.859	66.8426	.0365	13
		-24.535	114.706	80.5219		
47	none	-24.623	113.741	66.8426	.0365	13
		-24.535	113.894	80.5219		
48	none	-23.831	114.3	80.5219	.027	20
		-23.831	114.3	101.041		
49	none	-24.535	114.706	80.5219	.027	20
		-24.535	114.706	101.041		
50	none	-24.535	113.894	80.5219	.027	20
		-24.535	113.894	101.041		
51	none	-23.655	114.3	53.1634	.0476	1
		-24.623	114.859	53.1634		
52	none	-24.623	114.859	53.1634	.0476	1
		-24.623	113.741	53.1634		
53	none	-24.623	113.741	53.1634	.0476	1
		-23.655	114.3	53.1634		
54	none	-23.655	114.3	66.8426	.0365	1
		-24.623	114.859	66.8426		
55	none	-24.623	114.859	66.8426	.0365	1
		-24.623	113.741	66.8426		
56	none	-24.623	113.741	66.8426	.0365	1
		-23.655	114.3	66.8426		

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57	none	-23.831	114.3	80.5219	.027	1
		-24.535	114.706	80.5219		
58	none	-24.535	114.706	80.5219	.027	1
		-24.535	113.894	80.5219		
59	none	-24.535	113.894	80.5219	.027	1
		-23.831	114.3	80.5219		
60	none	-23.831	114.3	101.041	.027	1
		-24.535	114.706	101.041		
61	none	-24.535	114.706	101.041	.027	1
		-24.535	113.894	101.041		
62	none	-24.535	113.894	101.041	.027	1
		-23.831	114.3	101.041		
63	none	-48.6	228.6	0	.0127	2
		-48.6	228.6	2.7352		
64	none	-45.975	228.6	0	.0333	2
		-45.975	228.6	2.7352		
65	none	-49.913	230.874	0	.0333	2
		-49.913	230.874	2.7352		
66	none	-49.913	226.326	0	.0333	2
		-49.913	226.326	2.7352		
67	none	-45.975	228.6	2.7352	.0127	2
		-48.6	228.6	2.7352		
68	none	-49.913	230.874	2.7352	.0127	2
		-48.6	228.6	2.7352		
69	none	-49.913	226.326	2.7352	.0127	2
		-48.6	228.6	2.7352		
70	none	-45.975	228.6	2.7352	.0333	50
		-47.955	228.6	54.2058		
71	none	-49.913	230.874	2.7352	.0333	50
		-48.923	229.159	54.2058		
72	none	-49.913	226.326	2.7352	.0333	50
		-48.923	228.041	54.2058		
73	none	-47.955	228.6	54.2058	.0476	13
		-47.955	228.6	68.1533		
74	none	-48.923	229.159	54.2058	.0476	13
		-48.923	229.159	68.1533		
75	none	-48.923	228.041	54.2058	.0476	13
		-48.923	228.041	68.1533		
76	none	-47.955	228.6	68.1533	.0365	13
		-48.131	228.6	82.1007		
77	none	-48.923	229.159	68.1533	.0365	13
		-48.835	229.006	82.1007		
78	none	-48.923	228.041	68.1533	.0365	13
		-48.835	228.194	82.1007		
79	none	-48.131	228.6	82.1007	.027	20
		-48.131	228.6	103.022		
80	none	-48.835	229.006	82.1007	.027	20
		-48.835	229.006	103.022		
81	none	-48.835	228.194	82.1007	.027	20
		-48.835	228.194	103.022		
82	none	-47.955	228.6	54.2058	.0476	1
		-48.923	229.159	54.2058		
83	none	-48.923	229.159	54.2058	.0476	1
		-48.923	228.041	54.2058		
84	none	-48.923	228.041	54.2058	.0476	1
		-47.955	228.6	54.2058		
85	none	-47.955	228.6	68.1533	.0365	1
		-48.923	229.159	68.1533		
86	none	-48.923	229.159	68.1533	.0365	1
		-48.923	228.041	68.1533		
87	none	-48.923	228.041	68.1533	.0365	1
		-47.955	228.6	68.1533		

**APPENDIX A – INDIVIDUAL TOWER MODEL
WNYC(AM) – NEW YORK, NEW YORK**

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88	none	-48.131	228.6	82.1007	.027	1
		-48.835	229.006	82.1007		
89	none	-48.835	229.006	82.1007	.027	1
		-48.835	228.194	82.1007		
90	none	-48.835	228.194	82.1007	.027	1
		-48.131	228.6	82.1007		
91	none	-48.131	228.6	103.022	.027	1
		-48.835	229.006	103.022		
92	none	-48.835	229.006	103.022	.027	1
		-48.835	228.194	103.022		
93	none	-48.835	228.194	103.022	.027	1
		-48.131	228.6	103.022		

Number of wires = 93
current nodes = 987

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	89	.811996	63	1.3676
segment/radius ratio	11	21.8893	63	107.685
radius	1	.0127	11	.0476

ELECTRICAL DESCRIPTION - TOWER #2

Frequencies (MHz)

frequency		no. of steps	segment length (wavelengths)	
no. lowest	step		minimum	maximum
1	.82	0	2.22E-03	3.74E-03

Sources

source node	sector	magnitude	phase	type
1	330	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	4	0	0	0	1.5E-05	0
2	6	0	0	0	1.5E-05	0
3	8	0	0	0	1.5E-05	0
4	333	0	0	0	1.5E-05	0
5	335	0	0	0	1.5E-05	0
6	337	0	0	0	1.5E-05	0
7	662	0	0	0	1.5E-05	0
8	664	0	0	0	1.5E-05	0
9	666	0	0	0	1.5E-05	0
10	1	1.E-03	-3,881.83	0	0	0
11	330	1.E-03	0	0	0	0
12	659	1.E-03	-4,313.14	0	0	0

APPENDIX A – INDIVIDUAL TOWER MODEL WNYC(AM) – NEW YORK, NEW YORK

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IMPEDANCE -- TOWER #3

normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 659, sector 1							
.82	59.406	63.525	86.974	46.9	3.0618	-5.8895	-1.294

GEOMETRY- TOWER #3

Dimensions in meters

Environment: perfect ground

wire	caps	X	Y	Z	radius	segs
1	none	0	0	0	.0127	2
		0	0	2.6563		
2	none	2.625	0	0	.0333	2
		2.625	0	2.6563		
3	none	-1.313	2.274	0	.0333	2
		-1.313	2.274	2.6563		
4	none	-1.313	-2.274	0	.0333	2
		-1.313	-2.274	2.6563		
5	none	2.625	0	2.6563	.0127	2
		0	0	2.6563		
6	none	-1.313	2.274	2.6563	.0127	2
		0	0	2.6563		
7	none	-1.313	-2.274	2.6563	.0127	2
		0	0	2.6563		
8	none	2.625	0	2.6563	.0333	50
		.645	0	52.6422		
9	none	-1.313	2.274	2.6563	.0333	50
		-.323	.559	52.6422		
10	none	-1.313	-2.274	2.6563	.0333	50
		-.323	-.559	52.6422		
11	none	.645	0	52.6422	.0476	13
		.645	0	66.1873		
12	none	-.323	.559	52.6422	.0476	13
		-.323	.559	66.1873		
13	none	-.323	-.559	52.6422	.0476	13
		-.323	-.559	66.1873		
14	none	.645	0	66.1873	.0365	13
		.469	0	79.7324		
15	none	-.323	.559	66.1873	.0365	13
		-.235	.406	79.7324		
16	none	-.323	-.559	66.1873	.0365	13
		-.235	-.406	79.7324		
17	none	.469	0	79.7324	.027	20
		.469	0	100.051		
18	none	-.235	.406	79.7324	.027	20
		-.235	.406	100.051		
19	none	-.235	-.406	79.7324	.027	20
		-.235	-.406	100.051		
20	none	.645	0	52.6422	.0476	1
		-.323	.559	52.6422		
21	none	-.323	.559	52.6422	.0476	1
		-.323	-.559	52.6422		
22	none	-.323	-.559	52.6422	.0476	1
		.645	0	52.6422		
23	none	.645	0	66.1873	.0365	1
		-.323	.559	66.1873		
24	none	-.323	.559	66.1873	.0365	1
		-.323	-.559	66.1873		
25	none	-.323	-.559	66.1873	.0365	1
		.645	0	66.1873		

**APPENDIX A – INDIVIDUAL TOWER MODEL
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26	none	.469	0	79.7324	.027	1
		-.235	.406	79.7324		
27	none	-.235	.406	79.7324	.027	1
		-.235	-.406	79.7324		
28	none	-.235	-.406	79.7324	.027	1
		.469	0	79.7324		
29	none	.469	0	100.051	.027	1
		-.235	.406	100.051		
30	none	-.235	.406	100.051	.027	1
		-.235	-.406	100.051		
31	none	-.235	-.406	100.051	.027	1
		.469	0	100.051		
32	none	-24.3	114.3	0	.0127	2
		-24.3	114.3	2.6826		
33	none	-21.675	114.3	0	.0333	2
		-21.675	114.3	2.6826		
34	none	-25.613	116.574	0	.0333	2
		-25.613	116.574	2.6826		
35	none	-25.613	112.026	0	.0333	2
		-25.613	112.026	2.6826		
36	none	-21.675	114.3	2.6826	.0127	2
		-24.3	114.3	2.6826		
37	none	-25.613	116.574	2.6826	.0127	2
		-24.3	114.3	2.6826		
38	none	-25.613	112.026	2.6826	.0127	2
		-24.3	114.3	2.6826		
39	none	-21.675	114.3	2.6826	.0333	50
		-23.655	114.3	53.1634		
40	none	-25.613	116.574	2.6826	.0333	50
		-24.623	114.859	53.1634		
41	none	-25.613	112.026	2.6826	.0333	50
		-24.623	113.741	53.1634		
42	none	-23.655	114.3	53.1634	.0476	13
		-23.655	114.3	66.8426		
43	none	-24.623	114.859	53.1634	.0476	13
		-24.623	114.859	66.8426		
44	none	-24.623	113.741	53.1634	.0476	13
		-24.623	113.741	66.8426		
45	none	-23.655	114.3	66.8426	.0365	13
		-23.831	114.3	80.5219		
46	none	-24.623	114.859	66.8426	.0365	13
		-24.535	114.706	80.5219		
47	none	-24.623	113.741	66.8426	.0365	13
		-24.535	113.894	80.5219		
48	none	-23.831	114.3	80.5219	.027	20
		-23.831	114.3	101.041		
49	none	-24.535	114.706	80.5219	.027	20
		-24.535	114.706	101.041		
50	none	-24.535	113.894	80.5219	.027	20
		-24.535	113.894	101.041		
51	none	-23.655	114.3	53.1634	.0476	1
		-24.623	114.859	53.1634		
52	none	-24.623	114.859	53.1634	.0476	1
		-24.623	113.741	53.1634		
53	none	-24.623	113.741	53.1634	.0476	1
		-23.655	114.3	53.1634		
54	none	-23.655	114.3	66.8426	.0365	1
		-24.623	114.859	66.8426		
55	none	-24.623	114.859	66.8426	.0365	1
		-24.623	113.741	66.8426		
56	none	-24.623	113.741	66.8426	.0365	1
		-23.655	114.3	66.8426		

**APPENDIX A – INDIVIDUAL TOWER MODEL
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57	none	-23.831	114.3	80.5219	.027	1
		-24.535	114.706	80.5219		
58	none	-24.535	114.706	80.5219	.027	1
		-24.535	113.894	80.5219		
59	none	-24.535	113.894	80.5219	.027	1
		-23.831	114.3	80.5219		
60	none	-23.831	114.3	101.041	.027	1
		-24.535	114.706	101.041		
61	none	-24.535	114.706	101.041	.027	1
		-24.535	113.894	101.041		
62	none	-24.535	113.894	101.041	.027	1
		-23.831	114.3	101.041		
63	none	-48.6	228.6	0	.0127	2
		-48.6	228.6	2.7352		
64	none	-45.975	228.6	0	.0333	2
		-45.975	228.6	2.7352		
65	none	-49.913	230.874	0	.0333	2
		-49.913	230.874	2.7352		
66	none	-49.913	226.326	0	.0333	2
		-49.913	226.326	2.7352		
67	none	-45.975	228.6	2.7352	.0127	2
		-48.6	228.6	2.7352		
68	none	-49.913	230.874	2.7352	.0127	2
		-48.6	228.6	2.7352		
69	none	-49.913	226.326	2.7352	.0127	2
		-48.6	228.6	2.7352		
70	none	-45.975	228.6	2.7352	.0333	50
		-47.955	228.6	54.2058		
71	none	-49.913	230.874	2.7352	.0333	50
		-48.923	229.159	54.2058		
72	none	-49.913	226.326	2.7352	.0333	50
		-48.923	228.041	54.2058		
73	none	-47.955	228.6	54.2058	.0476	13
		-47.955	228.6	68.1533		
74	none	-48.923	229.159	54.2058	.0476	13
		-48.923	229.159	68.1533		
75	none	-48.923	228.041	54.2058	.0476	13
		-48.923	228.041	68.1533		
76	none	-47.955	228.6	68.1533	.0365	13
		-48.131	228.6	82.1007		
77	none	-48.923	229.159	68.1533	.0365	13
		-48.835	229.006	82.1007		
78	none	-48.923	228.041	68.1533	.0365	13
		-48.835	228.194	82.1007		
79	none	-48.131	228.6	82.1007	.027	20
		-48.131	228.6	103.022		
80	none	-48.835	229.006	82.1007	.027	20
		-48.835	229.006	103.022		
81	none	-48.835	228.194	82.1007	.027	20
		-48.835	228.194	103.022		
82	none	-47.955	228.6	54.2058	.0476	1
		-48.923	229.159	54.2058		
83	none	-48.923	229.159	54.2058	.0476	1
		-48.923	228.041	54.2058		
84	none	-48.923	228.041	54.2058	.0476	1
		-47.955	228.6	54.2058		
85	none	-47.955	228.6	68.1533	.0365	1
		-48.923	229.159	68.1533		
86	none	-48.923	229.159	68.1533	.0365	1
		-48.923	228.041	68.1533		
87	none	-48.923	228.041	68.1533	.0365	1
		-47.955	228.6	68.1533		

**APPENDIX A – INDIVIDUAL TOWER MODEL
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88	none	-48.131	228.6	82.1007	.027	1
		-48.835	229.006	82.1007		
89	none	-48.835	229.006	82.1007	.027	1
		-48.835	228.194	82.1007		
90	none	-48.835	228.194	82.1007	.027	1
		-48.131	228.6	82.1007		
91	none	-48.131	228.6	103.022	.027	1
		-48.835	229.006	103.022		
92	none	-48.835	229.006	103.022	.027	1
		-48.835	228.194	103.022		
93	none	-48.835	228.194	103.022	.027	1
		-48.131	228.6	103.022		

Number of wires = 93
current nodes = 987

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	89	.811996	63	1.3676
segment/radius ratio	11	21.8893	63	107.685
radius	1	.0127	11	.0476

ELECTRICAL DESCRIPTION - TOWER #3

Frequencies (MHz)

frequency		no. of		segment length (wavelengths)	
no. lowest	step	steps	minimum	maximum	
1	.82	0	1	2.22E-03	3.74E-03

Sources

source node	sector	magnitude	phase	type
1	659	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	4	0	0	0	1.5E-05	0
2	6	0	0	0	1.5E-05	0
3	8	0	0	0	1.5E-05	0
4	333	0	0	0	1.5E-05	0
5	335	0	0	0	1.5E-05	0
6	337	0	0	0	1.5E-05	0
7	662	0	0	0	1.5E-05	0
8	664	0	0	0	1.5E-05	0
9	666	0	0	0	1.5E-05	0
10	1	1.E-03	-3,881.83	0	0	0
11	330	1.E-03	-4,513.75	0	0	0
12	659	1.E-03	0	0	0	0

APPENDIX B

DAYTIME DIRECTIONAL ARRAY MODEL

APPENDIX B – DAY ARRAY OPERATION WNYC(AM) – NEW YORK, NEW YORK

PAGE B-1

IMPEDANCE - DAY

normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
.82	28.21	41.507	50.187	55.8	3.2504	-5.5234	-1.4286
source = 2; node 330, sector 1							
.82	74.277	74.299	105.06	45.	3.3463	-5.3548	-1.4961
source = 3; node 659, sector 1							
.82	301.19	160.75	341.41	28.1	7.7773	-2.2461	-3.9383

GEOMETRY - DAY

Dimensions in meters

Environment: perfect ground

wire	caps	X	Y	Z	radius	segs
1	none	0	0	0	.0127	2
		0	0	2.6563		
2	none	2.625	0	0	.0333	2
		2.625	0	2.6563		
3	none	-1.313	2.274	0	.0333	2
		-1.313	2.274	2.6563		
4	none	-1.313	-2.274	0	.0333	2
		-1.313	-2.274	2.6563		
5	none	2.625	0	0	.0127	2
		0	0	2.6563		
6	none	-1.313	2.274	0	.0127	2
		0	0	2.6563		
7	none	-1.313	-2.274	0	.0127	2
		0	0	2.6563		
8	none	2.625	0	0	.0333	50
		.645	0	52.6422		
9	none	-1.313	2.274	0	.0333	50
		-.323	.559	52.6422		
10	none	-1.313	-2.274	0	.0333	50
		-.323	-.559	52.6422		
11	none	.645	0	0	.0476	13
		.645	0	66.1873		
12	none	-.323	.559	0	.0476	13
		-.323	.559	66.1873		
13	none	-.323	-.559	0	.0476	13
		-.323	-.559	66.1873		
14	none	.645	0	0	.0365	13
		.469	0	79.7324		
15	none	-.323	.559	0	.0365	13
		-.235	.406	79.7324		
16	none	-.323	-.559	0	.0365	13
		-.235	-.406	79.7324		
17	none	.469	0	0	.027	20
		.469	0	100.051		
18	none	-.235	.406	0	.027	20
		-.235	.406	100.051		
19	none	-.235	-.406	0	.027	20
		-.235	-.406	100.051		
20	none	.645	0	0	.0476	1
		-.323	.559	52.6422		
21	none	-.323	.559	0	.0476	1
		-.323	-.559	52.6422		
22	none	-.323	-.559	0	.0476	1
		.645	0	52.6422		
23	none	.645	0	0	.0365	1
		-.323	.559	66.1873		

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24	none	-.323	.559	66.1873	.0365	1
		-.323	-.559	66.1873		
25	none	-.323	-.559	66.1873	.0365	1
		.645	0	66.1873		
26	none	.469	0	79.7324	.027	1
		-.235	.406	79.7324		
27	none	-.235	.406	79.7324	.027	1
		-.235	-.406	79.7324		
28	none	-.235	-.406	79.7324	.027	1
		.469	0	79.7324		
29	none	.469	0	100.051	.027	1
		-.235	.406	100.051		
30	none	-.235	.406	100.051	.027	1
		-.235	-.406	100.051		
31	none	-.235	-.406	100.051	.027	1
		.469	0	100.051		
32	none	-24.3	114.3	0	.0127	2
		-24.3	114.3	2.6826		
33	none	-21.675	114.3	0	.0333	2
		-21.675	114.3	2.6826		
34	none	-25.613	116.574	0	.0333	2
		-25.613	116.574	2.6826		
35	none	-25.613	112.026	0	.0333	2
		-25.613	112.026	2.6826		
36	none	-21.675	114.3	2.6826	.0127	2
		-24.3	114.3	2.6826		
37	none	-25.613	116.574	2.6826	.0127	2
		-24.3	114.3	2.6826		
38	none	-25.613	112.026	2.6826	.0127	2
		-24.3	114.3	2.6826		
39	none	-21.675	114.3	2.6826	.0333	50
		-23.655	114.3	53.1634		
40	none	-25.613	116.574	2.6826	.0333	50
		-24.623	114.859	53.1634		
41	none	-25.613	112.026	2.6826	.0333	50
		-24.623	113.741	53.1634		
42	none	-23.655	114.3	53.1634	.0476	13
		-23.655	114.3	66.8426		
43	none	-24.623	114.859	53.1634	.0476	13
		-24.623	114.859	66.8426		
44	none	-24.623	113.741	53.1634	.0476	13
		-24.623	113.741	66.8426		
45	none	-23.655	114.3	66.8426	.0365	13
		-23.831	114.3	80.5219		
46	none	-24.623	114.859	66.8426	.0365	13
		-24.535	114.706	80.5219		
47	none	-24.623	113.741	66.8426	.0365	13
		-24.535	113.894	80.5219		
48	none	-23.831	114.3	80.5219	.027	20
		-23.831	114.3	101.041		
49	none	-24.535	114.706	80.5219	.027	20
		-24.535	114.706	101.041		
50	none	-24.535	113.894	80.5219	.027	20
		-24.535	113.894	101.041		
51	none	-23.655	114.3	53.1634	.0476	1
		-24.623	114.859	53.1634		
52	none	-24.623	114.859	53.1634	.0476	1
		-24.623	113.741	53.1634		
53	none	-24.623	113.741	53.1634	.0476	1
		-23.655	114.3	53.1634		
54	none	-23.655	114.3	66.8426	.0365	1
		-24.623	114.859	66.8426		

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55	none	-24.623	114.859	66.8426	.0365	1
		-24.623	113.741	66.8426		
56	none	-24.623	113.741	66.8426	.0365	1
		-23.655	114.3	66.8426		
57	none	-23.831	114.3	80.5219	.027	1
		-24.535	114.706	80.5219		
58	none	-24.535	114.706	80.5219	.027	1
		-24.535	113.894	80.5219		
59	none	-24.535	113.894	80.5219	.027	1
		-23.831	114.3	80.5219		
60	none	-23.831	114.3	101.041	.027	1
		-24.535	114.706	101.041		
61	none	-24.535	114.706	101.041	.027	1
		-24.535	113.894	101.041		
62	none	-24.535	113.894	101.041	.027	1
		-23.831	114.3	101.041		
63	none	-48.6	228.6	0	.0127	2
		-48.6	228.6	2.7352		
64	none	-45.975	228.6	0	.0333	2
		-45.975	228.6	2.7352		
65	none	-49.913	230.874	0	.0333	2
		-49.913	230.874	2.7352		
66	none	-49.913	226.326	0	.0333	2
		-49.913	226.326	2.7352		
67	none	-45.975	228.6	2.7352	.0127	2
		-48.6	228.6	2.7352		
68	none	-49.913	230.874	2.7352	.0127	2
		-48.6	228.6	2.7352		
69	none	-49.913	226.326	2.7352	.0127	2
		-48.6	228.6	2.7352		
70	none	-45.975	228.6	2.7352	.0333	50
		-47.955	228.6	54.2058		
71	none	-49.913	230.874	2.7352	.0333	50
		-48.923	229.159	54.2058		
72	none	-49.913	226.326	2.7352	.0333	50
		-48.923	228.041	54.2058		
73	none	-47.955	228.6	54.2058	.0476	13
		-47.955	228.6	68.1533		
74	none	-48.923	229.159	54.2058	.0476	13
		-48.923	229.159	68.1533		
75	none	-48.923	228.041	54.2058	.0476	13
		-48.923	228.041	68.1533		
76	none	-47.955	228.6	68.1533	.0365	13
		-48.131	228.6	82.1007		
77	none	-48.923	229.159	68.1533	.0365	13
		-48.835	229.006	82.1007		
78	none	-48.923	228.041	68.1533	.0365	13
		-48.835	228.194	82.1007		
79	none	-48.131	228.6	82.1007	.027	20
		-48.131	228.6	103.022		
80	none	-48.835	229.006	82.1007	.027	20
		-48.835	229.006	103.022		
81	none	-48.835	228.194	82.1007	.027	20
		-48.835	228.194	103.022		
82	none	-47.955	228.6	54.2058	.0476	1
		-48.923	229.159	54.2058		
83	none	-48.923	229.159	54.2058	.0476	1
		-48.923	228.041	54.2058		
84	none	-48.923	228.041	54.2058	.0476	1
		-47.955	228.6	54.2058		
85	none	-47.955	228.6	68.1533	.0365	1
		-48.923	229.159	68.1533		

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86	none	-48.923	229.159	68.1533	.0365	1
		-48.923	228.041	68.1533		
87	none	-48.923	228.041	68.1533	.0365	1
		-47.955	228.6	68.1533		
88	none	-48.131	228.6	82.1007	.027	1
		-48.835	229.006	82.1007		
89	none	-48.835	229.006	82.1007	.027	1
		-48.835	228.194	82.1007		
90	none	-48.835	228.194	82.1007	.027	1
		-48.131	228.6	82.1007		
91	none	-48.131	228.6	103.022	.027	1
		-48.835	229.006	103.022		
92	none	-48.835	229.006	103.022	.027	1
		-48.835	228.194	103.022		
93	none	-48.835	228.194	103.022	.027	1
		-48.131	228.6	103.022		

Number of wires = 93
current nodes = 987

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	89	.811996	63	1.3676
segment/radius ratio	11	21.8893	63	107.685
radius	1	.0127	11	.0476

ELECTRICAL DESCRIPTION - DAY

Frequencies (MHz)

frequency			no. of steps	segment length (wavelengths)	
no.	lowest	step		minimum	maximum
1	.82	0	1	2.22E-03	3.74E-03

Sources

source	node	sector	magnitude	phase	type
1	1	1	705.8	168.2	voltage
2	330	1	1,328.04	55.4	voltage
3	659	1	993.715	303.	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	4	0	0	0	1.5E-05	0
2	6	0	0	0	1.5E-05	0
3	8	0	0	0	1.5E-05	0
4	333	0	0	0	1.5E-05	0
5	335	0	0	0	1.5E-05	0
6	337	0	0	0	1.5E-05	0
7	662	0	0	0	1.5E-05	0
8	664	0	0	0	1.5E-05	0
9	666	0	0	0	1.5E-05	0

RMS CURRENT - DAY

Frequency = .82 MHz

Input power = 10,000. watts

Efficiency = 100. %

coordinates in meters

no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
GND	0	0	0	9.9444	112.4	-3.78463	9.19607
2	0	0	1.32815	9.97624	112.2	-3.77611	9.23397
END	0	0	2.6563	9.99071	112.2	-3.77106	9.25167
GND	2.625	0	0	.0361432	63.5	.0161383	.0323402

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4	2.625	0	1.32815	.0285337	63.	.0129484	.0254265
END	2.625	0	2.6563	.0549253	62.2	.0255902	.0485997
GND	-1.313	2.274	0	.0360972	63.3	.0162092	.0322531
6	-1.313	2.274	1.32815	.0285004	62.8	.013006	.0253598
END	-1.313	2.274	2.6563	.0548717	62.1	.0257033	.0484794
GND	-1.313	-2.274	0	.0361658	63.6	.0161065	.0323813
8	-1.313	-2.274	1.32815	.0285508	63.1	.0129225	.0254589
END	-1.313	-2.274	2.6563	.0549584	62.3	.0255407	.0486631
2J2	2.625	0	2.6563	3.3424	291.8	1.24046	-3.10369
10	1.3125	0	2.6563	3.33298	292.	1.24688	-3.09096
END	0	0	2.6563	3.32348	292.1	1.25244	-3.07846
2J3	-1.313	2.274	2.6563	3.37712	292.	1.26416	-3.13159
13	-.6565	1.137	2.6563	3.36776	292.2	1.2706	-3.11887
END	0	0	2.6563	3.35829	292.3	1.27618	-3.10637
2J4	-1.313	-2.274	2.6563	3.32793	291.7	1.23047	-3.0921
16	-.6565	-1.137	2.6563	3.31848	291.9	1.23687	-3.07936
END	0	0	2.6563	3.30896	292.1	1.24244	-3.06684
2J2	2.625	0	2.6563	3.37829	111.1	-1.21487	3.15229
19	2.5854	0	3.65602	3.3864	110.9	-1.20793	3.16364
20	2.5458	0	4.65574	3.39346	110.7	-1.20065	3.17396
21	2.5062	0	5.65545	3.39901	110.6	-1.19341	3.18262
22	2.4666	0	6.65517	3.40313	110.4	-1.18619	3.18971
23	2.427	0	7.65489	3.40588	110.3	-1.17895	3.19532
24	2.3874	0	8.65461	3.4073	110.1	-1.17167	3.19951
25	2.3478	0	9.65433	3.40746	110.	-1.16432	3.20237
26	2.3082	0	10.654	3.4064	109.9	-1.15689	3.20392
27	2.2686	0	11.6538	3.40414	109.7	-1.14936	3.20424
28	2.229	0	12.6535	3.40073	109.6	-1.14172	3.20335
29	2.1894	0	13.6532	3.39618	109.5	-1.13395	3.20129
30	2.1498	0	14.6529	3.39054	109.4	-1.12605	3.19809
31	2.1102	0	15.6526	3.38382	109.3	-1.11802	3.19378
32	2.0706	0	16.6524	3.37603	109.2	-1.10984	3.18839
33	2.031	0	17.6521	3.36719	109.1	-1.10152	3.18192
34	1.9914	0	18.6518	3.35732	109.	-1.09304	3.1744
35	1.9518	0	19.6515	3.34643	108.9	-1.08441	3.16585
36	1.9122	0	20.6512	3.33454	108.8	-1.07564	3.15629
37	1.8726	0	21.6509	3.32166	108.7	-1.0667	3.14572
38	1.833	0	22.6507	3.3078	108.6	-1.05761	3.13417
39	1.7934	0	23.6504	3.29298	108.6	-1.04836	3.12165
40	1.7538	0	24.6501	3.27722	108.5	-1.03896	3.10817
41	1.7142	0	25.6498	3.26052	108.4	-1.02941	3.09375
42	1.6746	0	26.6495	3.24289	108.3	-1.0197	3.0784
43	1.635	0	27.6493	3.22435	108.3	-1.00985	3.06213
44	1.5954	0	28.649	3.20492	108.2	-.999843	3.04497
45	1.5558	0	29.6487	3.1846	108.1	-.989689	3.02691
46	1.5162	0	30.6484	3.16341	108.	-.9794	3.00798
47	1.4766	0	31.6481	3.14136	108.	-.968963	2.98819
48	1.437	0	32.6478	3.11847	107.9	-.958392	2.96755
49	1.3974	0	33.6476	3.09476	107.8	-.947686	2.94608
50	1.3578	0	34.6473	3.07022	107.8	-.936847	2.9238
51	1.3182	0	35.647	3.04489	107.7	-.925879	2.90071
52	1.2786	0	36.6467	3.01878	107.6	-.914792	2.87684
53	1.239	0	37.6464	2.99191	107.6	-.903584	2.8522
54	1.1994	0	38.6461	2.96429	107.5	-.892263	2.82681
55	1.1598	0	39.6459	2.93594	107.5	-.88083	2.80069
56	1.1202	0	40.6456	2.90688	107.4	-.869297	2.77385
57	1.0806	0	41.6453	2.87713	107.3	-.857665	2.74633
58	1.041	0	42.645	2.84673	107.3	-.845941	2.71813
59	1.0014	0	43.6447	2.81569	107.2	-.834132	2.6893
60	.9618	0	44.6445	2.78404	107.2	-.822253	2.65985
61	.9222	0	45.6442	2.75182	107.1	-.810303	2.62981
62	.8826	0	46.6439	2.71905	107.1	-.798296	2.59922
63	.843	0	47.6436	2.68579	107.	-.786247	2.56813

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64	.8034	0	48.6433	2.6521	107.	-.774184	2.53659
65	.7638	0	49.643	2.61807	106.9	-.76212	2.50469
66	.7242	0	50.6428	2.5839	106.9	-.750135	2.47262
67	.6846	0	51.6425	2.55019	106.8	-.738418	2.44094
END	.645	0	52.6422	2.52193	106.8	-.728692	2.41436
2J3	-1.313	2.274	2.6563	3.41271	111.3	-1.23846	3.18007
69	-1.2932	2.2397	3.65602	3.42074	111.1	-1.23148	3.19139
70	-1.2734	2.2054	4.65574	3.42773	110.9	-1.22417	3.20168
71	-1.2536	2.1711	5.65545	3.43322	110.8	-1.21689	3.21032
72	-1.2338	2.1368	6.65517	3.43727	110.6	-1.20962	3.2174
73	-1.214	2.1025	7.65489	3.43996	110.5	-1.20234	3.223
74	-1.1942	2.0682	8.65461	3.44133	110.3	-1.19501	3.22718
75	-1.1744	2.0339	9.65433	3.44144	110.2	-1.18762	3.23002
76	-1.1546	1.9996	10.654	3.44032	110.1	-1.18013	3.23157
77	-1.1348	1.9653	11.6538	3.43801	109.9	-1.17255	3.23188
78	-1.115	1.931	12.6535	3.43456	109.8	-1.16486	3.23099
79	-1.0952	1.8967	13.6532	3.42996	109.7	-1.15704	3.22891
80	-1.0754	1.8624	14.6529	3.42427	109.6	-1.14908	3.22571
81	-1.0556	1.8281	15.6526	3.41749	109.5	-1.14099	3.2214
82	-1.0358	1.7938	16.6524	3.40965	109.4	-1.13275	3.21599
83	-1.016	1.7595	17.6521	3.40076	109.3	-1.12436	3.20951
84	-.9962	1.7252	18.6518	3.39084	109.2	-1.11582	3.20199
85	-.9764	1.6909	19.6515	3.3799	109.1	-1.10713	3.19343
86	-.9566	1.6566	20.6512	3.36796	109.	-1.09827	3.18386
87	-.9368	1.6223	21.6509	3.35503	108.9	-1.08927	3.17329
88	-.917	1.588	22.6507	3.34113	108.9	-1.08011	3.16172
89	-.8972	1.5537	23.6504	3.32627	108.8	-1.07079	3.1492
90	-.8774	1.5194	24.6501	3.31045	108.7	-1.06131	3.13572
91	-.8576	1.4851	25.6498	3.29371	108.6	-1.05168	3.12129
92	-.8378	1.4508	26.6495	3.27604	108.5	-1.04189	3.10594
93	-.818	1.4165	27.6493	3.25746	108.5	-1.03197	3.08967
94	-.7982	1.3822	28.649	3.23798	108.4	-1.02188	3.0725
95	-.7784	1.3479	29.6487	3.21762	108.3	-1.01165	3.05444
96	-.7586	1.3136	30.6484	3.19639	108.3	-1.00128	3.03551
97	-.7388	1.2793	31.6481	3.17431	108.2	-.990763	3.01573
98	-.719	1.245	32.6478	3.15138	108.1	-.980114	2.99509
99	-.6992	1.2107	33.6476	3.12762	108.1	-.969324	2.97362
100	-.6794	1.1764	34.6473	3.10304	108.	-.958399	2.95133
101	-.6596	1.1421	35.647	3.07768	107.9	-.947354	2.92824
102	-.6398	1.1078	36.6467	3.05153	107.9	-.936182	2.90437
103	-.62	1.0735	37.6464	3.02461	107.8	-.924889	2.87973
104	-.6002	1.0392	38.6461	2.99695	107.7	-.913484	2.85434
105	-.5804	1.0049	39.6459	2.96856	107.7	-.901965	2.82822
106	-.5606	.9706	40.6456	2.93946	107.6	-.890347	2.80138
107	-.5408	.9363	41.6453	2.90967	107.6	-.878623	2.77384
108	-.521	.902	42.645	2.87922	107.5	-.866815	2.74564
109	-.5012	.8677	43.6447	2.84812	107.5	-.854914	2.71678
110	-.4814	.8334	44.6445	2.81642	107.4	-.842943	2.68732
111	-.4616	.7991	45.6442	2.78414	107.4	-.830908	2.65726
112	-.4418	.7648	46.6439	2.75131	107.3	-.818809	2.62664
113	-.422	.7305	47.6436	2.71799	107.3	-.806668	2.59552
114	-.4022	.6962	48.6433	2.68423	107.2	-.794506	2.56395
115	-.3824	.6619	49.643	2.65013	107.2	-.782351	2.53202
116	-.3626	.6276	50.6428	2.61589	107.1	-.770273	2.49991
117	-.3428	.5933	51.6425	2.5821	107.1	-.758472	2.46819
END	-.323	.559	52.6422	2.55377	107.	-.748652	2.44157
2J4	-1.313	-2.274	2.6563	3.36396	111.	-1.20493	3.14077
119	-1.2932	-2.2397	3.65602	3.3721	110.8	-1.198	3.15212
120	-1.2734	-2.2054	4.65574	3.3792	110.6	-1.19074	3.16245
121	-1.2536	-2.1711	5.65545	3.38479	110.5	-1.18352	3.17113
122	-1.2338	-2.1368	6.65517	3.38894	110.3	-1.17632	3.17824
123	-1.214	-2.1025	7.65489	3.39172	110.2	-1.1691	3.18386
124	-1.1942	-2.0682	8.65461	3.39318	110.	-1.16183	3.18807

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125	-1.1744	-2.0339	9.65433	3.39338	109.9	-1.15452	3.19094
126	-1.1546	-1.9996	10.654	3.39234	109.8	-1.14711	3.19251
127	-1.1348	-1.9653	11.6538	3.39013	109.6	-1.1396	3.19284
128	-1.115	-1.931	12.6535	3.38675	109.5	-1.13199	3.19197
129	-1.0952	-1.8967	13.6532	3.38224	109.4	-1.12425	3.18992
130	-1.0754	-1.8624	14.6529	3.37663	109.3	-1.11639	3.18674
131	-1.0556	-1.8281	15.6526	3.36993	109.2	-1.10838	3.18244
132	-1.0358	-1.7938	16.6524	3.36216	109.1	-1.10023	3.17705
133	-1.016	-1.7595	17.6521	3.35336	109.	-1.09194	3.17059
134	-.9962	-1.7252	18.6518	3.34351	108.9	-1.08349	3.16308
135	-.9764	-1.6909	19.6515	3.33264	108.8	-1.0749	3.15453
136	-.9566	-1.6566	20.6512	3.32077	108.7	-1.06616	3.14497
137	-.9368	-1.6223	21.6509	3.30791	108.6	-1.05725	3.13441
138	-.917	-1.588	22.6507	3.29409	108.6	-1.04819	3.12287
139	-.8972	-1.5537	23.6504	3.27929	108.5	-1.03898	3.11035
140	-.8774	-1.5194	24.6501	3.26355	108.4	-1.02961	3.09688
141	-.8576	-1.4851	25.6498	3.24687	108.3	-1.02009	3.08246
142	-.8378	-1.4508	26.6495	3.22926	108.2	-1.01043	3.06711
143	-.818	-1.4165	27.6493	3.21075	108.2	-1.00061	3.05086
144	-.7982	-1.3822	28.649	3.19134	108.1	-.990643	3.03369
145	-.7784	-1.3479	29.6487	3.17104	108.	-.980532	3.01564
146	-.7586	-1.3136	30.6484	3.14988	107.9	-.970271	2.99671
147	-.7388	-1.2793	31.6481	3.12785	107.9	-.959877	2.97692
148	-.719	-1.245	32.6478	3.10498	107.8	-.949341	2.95629
149	-.6992	-1.2107	33.6476	3.08128	107.7	-.938678	2.93482
150	-.6794	-1.1764	34.6473	3.05677	107.7	-.92788	2.91254
151	-.6596	-1.1421	35.647	3.03146	107.6	-.916948	2.88946
152	-.6398	-1.1078	36.6467	3.00538	107.5	-.905904	2.86559
153	-.62	-1.0735	37.6464	2.97852	107.5	-.894738	2.84096
154	-.6002	-1.0392	38.6461	2.95093	107.4	-.88346	2.81558
155	-.5804	-1.0049	39.6459	2.92261	107.4	-.872068	2.78947
156	-.5606	-.9706	40.6456	2.89358	107.3	-.860578	2.76265
157	-.5408	-.9363	41.6453	2.86387	107.2	-.848988	2.73513
158	-.521	-.902	42.645	2.83349	107.2	-.837307	2.70696
159	-.5012	-.8677	43.6447	2.80248	107.1	-.825541	2.67813
160	-.4814	-.8334	44.6445	2.77087	107.1	-.813704	2.6487
161	-.4616	-.7991	45.6442	2.73868	107.	-.801796	2.61868
162	-.4418	-.7648	46.6439	2.70594	107.	-.789832	2.5881
163	-.422	-.7305	47.6436	2.67272	106.9	-.777832	2.55703
164	-.4022	-.6962	48.6433	2.63906	106.9	-.765804	2.5255
165	-.3824	-.6619	49.643	2.60506	106.8	-.753784	2.49362
166	-.3626	-.6276	50.6428	2.57092	106.8	-.74184	2.46157
167	-.3428	-.5933	51.6425	2.53725	106.7	-.730173	2.42991
END	-.323	-.559	52.6422	2.50902	106.7	-.72048	2.40334
2J8	.645	0	52.6422	2.50513	106.8	-.723852	2.39827
169	.645	0	53.6841	2.47189	106.8	-.712538	2.36696
170	.645	0	54.7261	2.4326	106.7	-.699283	2.32993
171	.645	0	55.768	2.39198	106.7	-.685698	2.29159
172	.645	0	56.8099	2.35036	106.6	-.671901	2.25227
173	.645	0	57.8519	2.30783	106.6	-.657924	2.21207
174	.645	0	58.8938	2.26444	106.5	-.643777	2.171
175	.645	0	59.9357	2.2202	106.5	-.629468	2.12909
176	.645	0	60.9776	2.17512	106.4	-.615004	2.08636
177	.645	0	62.0196	2.12923	106.4	-.60039	2.04283
178	.645	0	63.0615	2.08255	106.3	-.585634	1.99851
179	.645	0	64.1034	2.03516	106.3	-.570762	1.95349
180	.645	0	65.1454	1.98743	106.2	-.555888	1.90811
END	.645	0	66.1873	1.94492	106.2	-.542727	1.86766
2J9	-.323	.559	52.6422	2.52189	106.9	-.734175	2.41266
182	-.323	.559	53.6841	2.48856	106.9	-.722756	2.3813
183	-.323	.559	54.7261	2.44919	106.8	-.709391	2.3442
184	-.323	.559	55.768	2.40847	106.8	-.695696	2.30581
185	-.323	.559	56.8099	2.36677	106.7	-.681786	2.26644

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186	-.323	.559	57.8519	2.32415	106.7	-.667694	2.22617
187	-.323	.559	58.8938	2.28066	106.6	-.653431	2.18505
188	-.323	.559	59.9357	2.23633	106.6	-.639005	2.14309
189	-.323	.559	60.9776	2.19116	106.6	-.624423	2.1003
190	-.323	.559	62.0196	2.14517	106.5	-.60969	2.05671
191	-.323	.559	63.0615	2.0984	106.5	-.594814	2.01233
192	-.323	.559	64.1034	2.05091	106.4	-.57982	1.96724
193	-.323	.559	65.1454	2.00308	106.4	-.564823	1.9218
END	-.323	.559	66.1873	1.96047	106.3	-.551543	1.88129
2J10	-.323	-.559	52.6422	2.49734	106.7	-.719121	2.39156
195	-.323	-.559	53.6841	2.46413	106.7	-.707857	2.36027
196	-.323	-.559	54.7261	2.42488	106.6	-.69465	2.32326
197	-.323	-.559	55.768	2.3843	106.6	-.681115	2.28494
198	-.323	-.559	56.8099	2.34271	106.6	-.667369	2.24565
199	-.323	-.559	57.8519	2.30023	106.5	-.653441	2.20546
200	-.323	-.559	58.8938	2.25687	106.5	-.639346	2.16441
201	-.323	-.559	59.9357	2.21266	106.4	-.62509	2.12253
202	-.323	-.559	60.9776	2.16763	106.4	-.610678	2.07983
203	-.323	-.559	62.0196	2.12178	106.3	-.596118	2.03632
204	-.323	-.559	63.0615	2.07514	106.3	-.581416	1.99203
205	-.323	-.559	64.1034	2.02779	106.2	-.566598	1.94703
206	-.323	-.559	65.1454	1.98011	106.2	-.551778	1.90167
END	-.323	-.559	66.1873	1.93763	106.1	-.538671	1.86125
2J11	.645	0	66.1873	1.92157	106.2	-.535635	1.84541
208	.631462	0	67.2292	1.88143	106.1	-.523308	1.80718
209	.617923	0	68.2712	1.83376	106.1	-.508757	1.76177
210	.604385	0	69.3131	1.78474	106.1	-.493888	1.71504
211	.590846	0	70.355	1.73494	106.	-.478881	1.66754
212	.577308	0	71.397	1.68454	106.	-.463783	1.61944
213	.563769	0	72.4389	1.63359	105.9	-.448614	1.57078
214	.550231	0	73.4808	1.58213	105.9	-.433388	1.52162
215	.536692	0	74.5227	1.53021	105.9	-.41811	1.47198
216	.523154	0	75.5647	1.47783	105.8	-.402792	1.42188
217	.509615	0	76.6066	1.42504	105.8	-.38744	1.37136
218	.496077	0	77.6485	1.37191	105.7	-.372072	1.32049
219	.482538	0	78.6905	1.31859	105.7	-.356739	1.26942
END	.469	0	79.7324	1.26969	105.7	-.34275	1.22255
2J12	-.323	.559	66.1873	1.93411	106.3	-.542852	1.85636
221	-.316231	.547231	67.2292	1.89387	106.3	-.530415	1.81808
222	-.309462	.535462	68.2712	1.84612	106.2	-.515754	1.77261
223	-.302692	.523692	69.3131	1.79701	106.2	-.500773	1.72582
224	-.295923	.511923	70.355	1.74713	106.1	-.485657	1.67827
225	-.289154	.500154	71.397	1.69664	106.1	-.470451	1.63011
226	-.282385	.488385	72.4389	1.64561	106.1	-.455177	1.5814
227	-.275615	.476615	73.4808	1.59408	106.	-.439846	1.5322
228	-.268846	.464846	74.5227	1.54207	106.	-.424466	1.4825
229	-.262077	.453077	75.5647	1.48962	105.9	-.409046	1.43236
230	-.255308	.441308	76.6066	1.43676	105.9	-.393596	1.3818
231	-.248538	.429538	77.6485	1.38355	105.9	-.378131	1.33088
232	-.241769	.417769	78.6905	1.33017	105.8	-.362702	1.27977
END	-.235	.406	79.7324	1.2812	105.8	-.348621	1.23286
2J13	-.323	-.559	66.1873	1.91588	106.1	-.5324	1.84042
234	-.316231	-.547231	67.2292	1.87578	106.1	-.520122	1.80223
235	-.309462	-.535462	68.2712	1.82816	106.1	-.505623	1.75684
236	-.302692	-.523692	69.3131	1.77917	106.	-.490805	1.71013
237	-.295923	-.511923	70.355	1.72942	106.	-.475848	1.66266
238	-.289154	-.500154	71.397	1.67906	105.9	-.460801	1.61459
239	-.282385	-.488385	72.4389	1.62815	105.9	-.445682	1.56597
240	-.275615	-.476615	73.4808	1.57675	105.8	-.430505	1.51684
241	-.268846	-.464846	74.5227	1.52486	105.8	-.415279	1.46723
242	-.262077	-.453077	75.5647	1.47254	105.8	-.400009	1.41716
243	-.255308	-.441308	76.6066	1.4198	105.7	-.384707	1.36669
244	-.248538	-.429538	77.6485	1.36671	105.7	-.369388	1.31584

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245	-.241769	-.417769	78.6905	1.31344	105.6	-.354103	1.26481
END	-.235	-.406	79.7324	1.26459	105.6	-.340162	1.21798
2J14	.469	0	79.7324	1.25259	105.7	-.337973	1.20613
247	.469	0	80.7483	1.20794	105.6	-.325276	1.16332
248	.469	0	81.7642	1.15673	105.6	-.310781	1.1142
249	.469	0	82.7801	1.10426	105.5	-.296007	1.06384
250	.469	0	83.796	1.0509	105.5	-.281062	1.01262
251	.469	0	84.812	.996782	105.5	-.265976	.960641
252	.469	0	85.8279	.941925	105.4	-.250761	.907933
253	.469	0	86.8438	.886348	105.4	-.235421	.854511
254	.469	0	87.8597	.830035	105.4	-.219956	.800361
255	.469	0	88.8756	.772965	105.3	-.20436	.745461
256	.469	0	89.8915	.715117	105.3	-.188627	.689792
257	.469	0	90.9074	.656435	105.3	-.172743	.633298
258	.469	0	91.9233	.596854	105.2	-.156696	.575918
259	.469	0	92.9392	.536281	105.2	-.140458	.51756
260	.469	0	93.9551	.474583	105.1	-.123999	.458097
261	.469	0	94.971	.41157	105.1	-.107269	.397346
262	.469	0	95.987	.346953	105.1	-.0901958	.335024
263	.469	0	97.0029	.280263	105.	-.0726595	.270681
264	.469	0	98.0188	.210663	105.	-.0544472	.203506
265	.469	0	99.0347	.136405	104.9	-.0351113	.131808
END	.469	0	100.051	.0563713	104.8	-.014377	.0545071
2J15	-.235	.406	79.7324	1.26187	105.8	-.342678	1.21445
267	-.235	.406	80.7483	1.21717	105.7	-.329902	1.17161
268	-.235	.406	81.7642	1.16589	105.7	-.315325	1.12244
269	-.235	.406	82.7801	1.11336	105.7	-.300468	1.07205
270	-.235	.406	83.796	1.05996	105.6	-.285441	1.0208
271	-.235	.406	84.812	1.00578	105.6	-.270273	.968787
272	-.235	.406	85.8279	.950867	105.6	-.254975	.916043
273	-.235	.406	86.8438	.895225	105.5	-.239553	.862579
274	-.235	.406	87.8597	.838848	105.5	-.224005	.808386
275	-.235	.406	88.8756	.781721	105.5	-.208326	.753451
276	-.235	.406	89.8915	.723814	105.4	-.19251	.697744
277	-.235	.406	90.9074	.665072	105.4	-.176545	.641212
278	-.235	.406	91.9233	.60543	105.4	-.160414	.583792
279	-.235	.406	92.9392	.544796	105.3	-.144095	.525395
280	-.235	.406	93.9551	.483039	105.3	-.127554	.465893
281	-.235	.406	94.971	.419966	105.3	-.110742	.405102
282	-.235	.406	95.987	.355289	105.3	-.0935878	.342741
283	-.235	.406	97.0029	.288541	105.3	-.0759702	.27836
284	-.235	.406	98.0188	.218882	105.3	-.0576773	.211146
285	-.235	.406	99.0347	.144566	105.3	-.0382609	.139411
END	-.235	.406	100.051	.0644779	105.7	-.0174456	.0620729
2J16	-.235	-.406	79.7324	1.24789	105.6	-.335718	1.20188
287	-.235	-.406	80.7483	1.20328	105.6	-.323063	1.1591
288	-.235	-.406	81.7642	1.15211	105.5	-.308611	1.11001
289	-.235	-.406	82.7801	1.09969	105.5	-.29388	1.0597
290	-.235	-.406	83.796	1.04639	105.5	-.278979	1.00852
291	-.235	-.406	84.812	.992319	105.4	-.263936	.956575
292	-.235	-.406	85.8279	.937516	105.4	-.248765	.903909
293	-.235	-.406	86.8438	.881978	105.3	-.233469	.850516
294	-.235	-.406	87.8597	.825718	105.3	-.218047	.796408
295	-.235	-.406	88.8756	.768701	105.3	-.202495	.741551
296	-.235	-.406	89.8915	.710898	105.2	-.186805	.685915
297	-.235	-.406	90.9074	.652265	105.2	-.170966	.62946
298	-.235	-.406	91.9233	.592733	105.2	-.154961	.572118
299	-.235	-.406	92.9392	.532209	105.1	-.138767	.5138
300	-.235	-.406	93.9551	.470561	105.1	-.122351	.454377
301	-.235	-.406	94.971	.407599	105.	-.105665	.393664
302	-.235	-.406	95.987	.343033	105.	-.0886352	.331384
303	-.235	-.406	97.0029	.276395	104.9	-.0711421	.267082
304	-.235	-.406	98.0188	.206847	104.8	-.0529732	.199949

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305	-.235	-.406	99.0347	.132643	104.7	-.0336809	.128295
END	-.235	-.406	100.051	.0526685	104.3	-.0129918	.051041
2J8	.645	0	52.6422	5.49E-03	95.9	-5.64E-04	5.47E-03
END	-.323	.559	52.6422	.0148993	295.3	6.36E-03	-.0134724
2J9	-.323	.559	52.6422	.0174395	117.7	-8.11E-03	.0154373
END	-.323	-.559	52.6422	3.7E-03	250.9	-1.21E-03	-3.49E-03
2J10	-.323	-.559	52.6422	8.68E-03	107.2	-2.57E-03	8.29E-03
END	.645	0	52.6422	.0114441	291.9	4.28E-03	-.0106149
2J11	.645	0	66.1873	.010368	107.	-3.02E-03	9.92E-03
END	-.323	.559	66.1873	.0134918	288.9	4.36E-03	-.012767
2J12	-.323	.559	66.1873	.012907	109.6	-4.33E-03	.0121594
END	-.323	-.559	66.1873	.010946	286.1	3.03E-03	-.0105172
2J13	-.323	-.559	66.1873	.0108036	107.4	-3.24E-03	.0103073
END	.645	0	66.1873	.0129878	288.3	4.07E-03	-.0123344
2J14	.469	0	79.7324	7.81E-03	105.9	-2.13E-03	7.51E-03
END	-.235	.406	79.7324	9.93E-03	287.2	2.94E-03	-9.49E-03
2J15	-.235	.406	79.7324	9.41E-03	108.6	-3.E-03	8.92E-03
END	-.235	-.406	79.7324	8.3E-03	284.3	2.06E-03	-8.04E-03
2J16	-.235	-.406	79.7324	8.4E-03	106.5	-2.39E-03	8.06E-03
END	.469	0	79.7324	9.3E-03	286.5	2.64E-03	-8.91E-03
2J17	.469	0	100.051	.0264201	104.3	-6.51E-03	.0256065
END	-.235	.406	100.051	.0314597	285.6	8.46E-03	-.0303005
2J18	-.235	.406	100.051	.0330182	105.8	-8.98E-03	.0317724
END	-.235	-.406	100.051	.0247963	283.9	5.95E-03	-.0240715
2J19	-.235	-.406	100.051	.0278733	104.6	-7.04E-03	.0269695
END	.469	0	100.051	.0299533	285.2	7.87E-03	-.0289006
GND	-24.3	114.3	0	8.93845	10.4	8.79118	1.61584
331	-24.3	114.3	1.3413	8.99082	10.1	8.85214	1.57305
END	-24.3	114.3	2.6826	9.01615	9.9	8.88178	1.5508
GND	-21.675	114.3	0	.0815144	318.1	.0606251	-.0544903
333	-21.675	114.3	1.3413	.0645386	317.9	.0478545	-.0433033
END	-21.675	114.3	2.6826	.125542	317.5	.092624	-.084744
GND	-25.613	116.574	0	.081603	318.	.0606835	-.0545579
335	-25.613	116.574	1.3413	.0646205	317.9	.0479161	-.0433573
END	-25.613	116.574	2.6826	.125739	317.6	.0927936	-.0848501
GND	-25.613	112.026	0	.0812454	317.9	.0602435	-.0545118
337	-25.613	112.026	1.3413	.0643084	317.6	.0475246	-.0433242
END	-25.613	112.026	2.6826	.125041	317.3	.0918957	-.0847963
2J33	-21.675	114.3	2.6826	3.03889	188.9	-3.00224	-.470563
339	-22.9875	114.3	2.6826	3.0188	189.4	-2.97844	-.491992
END	-24.3	114.3	2.6826	2.99974	189.8	-2.9558	-.511536
2J34	-25.613	116.574	2.6826	3.09053	189.4	-3.049	-.504894
342	-24.9565	115.437	2.6826	3.07055	189.9	-3.0251	-.526342
END	-24.3	114.3	2.6826	3.0517	190.3	-3.00248	-.545912
2J35	-25.613	112.026	2.6826	3.00397	188.7	-2.96972	-.452343
345	-24.9565	113.163	2.6826	2.98407	189.1	-2.94621	-.473814
END	-24.3	114.3	2.6826	2.96484	189.6	-2.9235	-.493353
2J33	-21.675	114.3	2.6826	3.11882	7.1	3.09486	.385819
348	-21.7146	114.3	3.69222	3.13874	6.7	3.11757	.363974
349	-21.7542	114.3	4.70183	3.15777	6.2	3.13917	.342169
350	-21.7938	114.3	5.71145	3.1748	5.8	3.15847	.321552
351	-21.8334	114.3	6.72106	3.18992	5.4	3.17559	.302018
352	-21.873	114.3	7.73068	3.20324	5.1	3.19067	.283451
353	-21.9126	114.3	8.7403	3.21485	4.7	3.20385	.26575
354	-21.9522	114.3	9.74991	3.22485	4.4	3.21523	.248824
355	-21.9918	114.3	10.7595	3.2333	4.1	3.22492	.232597
356	-22.0314	114.3	11.7691	3.24025	3.8	3.23298	.217003
357	-22.071	114.3	12.7788	3.24579	3.6	3.2395	.201992
358	-22.1106	114.3	13.7884	3.24993	3.3	3.24452	.187515
359	-22.1502	114.3	14.798	3.25274	3.1	3.2481	.173538
360	-22.1898	114.3	15.8076	3.25423	2.8	3.25029	.160027
361	-22.2294	114.3	16.8172	3.25443	2.6	3.25111	.146957
362	-22.269	114.3	17.8268	3.25337	2.4	3.2506	.134304

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363	-22.3086	114.3	18.8365	3.25109	2.2	3.2488	.122051
364	-22.3482	114.3	19.8461	3.24759	1.9	3.24572	.110179
365	-22.3878	114.3	20.8557	3.2429	1.7	3.24139	.0986768
366	-22.4274	114.3	21.8653	3.23703	1.5	3.23585	.08753
367	-22.467	114.3	22.8749	3.23001	1.4	3.2291	.0767275
368	-22.5066	114.3	23.8845	3.22184	1.2	3.22116	.0662608
369	-22.5462	114.3	24.8941	3.21254	1.	3.21205	.0561213
370	-22.5858	114.3	25.9038	3.20214	.8	3.2018	.0463015
371	-22.6254	114.3	26.9134	3.19063	.7	3.19042	.0367947
372	-22.665	114.3	27.923	3.17804	.5	3.17792	.027595
373	-22.7046	114.3	28.9326	3.1644	.3	3.16434	.0186971
374	-22.7442	114.3	29.9422	3.14969	.2	3.14968	.0100961
375	-22.7838	114.3	30.9518	3.13394	0.0	3.13394	1.79E-03
376	-22.8234	114.3	31.9615	3.11718	359.9	3.11718	-6.23E-03
377	-22.863	114.3	32.9711	3.09941	359.7	3.09938	-.0139676
378	-22.9026	114.3	33.9807	3.08064	359.6	3.08057	-.0214217
379	-22.9422	114.3	34.9903	3.0609	359.5	3.06076	-.0285978
380	-22.9818	114.3	35.9999	3.0402	359.3	3.03999	-.0354988
381	-23.0214	114.3	37.0095	3.01855	359.2	3.01826	-.0421275
382	-23.061	114.3	38.0192	2.99598	359.1	2.99559	-.0484869
383	-23.1006	114.3	39.0288	2.97251	358.9	2.97201	-.0545792
384	-23.1402	114.3	40.0384	2.94815	358.8	2.94753	-.0604071
385	-23.1798	114.3	41.048	2.92292	358.7	2.92217	-.0659728
386	-23.2194	114.3	42.0576	2.89684	358.6	2.89597	-.0712785
387	-23.259	114.3	43.0672	2.86994	358.5	2.86893	-.0763266
388	-23.2986	114.3	44.0769	2.84225	358.4	2.84109	-.0811187
389	-23.3382	114.3	45.0865	2.8138	358.3	2.81249	-.0856569
390	-23.3778	114.3	46.0961	2.7846	358.1	2.78315	-.0899426
391	-23.4174	114.3	47.1057	2.7547	358.	2.75309	-.0939788
392	-23.457	114.3	48.1153	2.72415	357.9	2.7224	-.0977647
393	-23.4966	114.3	49.1249	2.69301	357.8	2.6911	-.101302
394	-23.5362	114.3	50.1345	2.66137	357.7	2.65931	-.104589
395	-23.5758	114.3	51.1442	2.6294	357.7	2.6272	-.107616
396	-23.6154	114.3	52.1538	2.59768	357.6	2.59533	-.110349
END	-23.655	114.3	53.1634	2.57097	357.5	2.5685	-.11245
2J34	-25.613	116.574	2.6826	3.16975	7.6	3.1418	.420044
398	-25.5932	116.54	3.69222	3.18953	7.2	3.16458	.398169
399	-25.5734	116.505	4.70183	3.20844	6.7	3.18629	.37633
400	-25.5536	116.471	5.71145	3.22535	6.3	3.20568	.355676
401	-25.5338	116.437	6.72106	3.24037	6.	3.22289	.336102
402	-25.514	116.402	7.73068	3.2536	5.6	3.23807	.317491
403	-25.4942	116.368	8.7403	3.26513	5.3	3.25134	.299742
404	-25.4744	116.334	9.74991	3.27506	5.	3.26283	.282765
405	-25.4546	116.3	10.7595	3.28344	4.7	3.27261	.266483
406	-25.4348	116.265	11.7691	3.29035	4.4	3.28078	.250832
407	-25.415	116.231	12.7788	3.29583	4.1	3.28739	.235759
408	-25.3952	116.197	13.7884	3.29994	3.8	3.29252	.221218
409	-25.3754	116.162	14.798	3.30271	3.6	3.2962	.207172
410	-25.3556	116.128	15.8076	3.30416	3.4	3.29849	.19359
411	-25.3358	116.094	16.8172	3.30434	3.1	3.29941	.180445
412	-25.316	116.06	17.8268	3.30326	2.9	3.299	.167715
413	-25.2962	116.025	18.8365	3.30095	2.7	3.29729	.155381
414	-25.2764	115.991	19.8461	3.29744	2.5	3.29431	.143427
415	-25.2566	115.957	20.8557	3.29273	2.3	3.29009	.131837
416	-25.2368	115.922	21.8653	3.28685	2.1	3.28463	.120601
417	-25.217	115.888	22.8749	3.27982	1.9	3.27798	.109708
418	-25.1972	115.854	23.8845	3.27164	1.7	3.27014	.0991471
419	-25.1774	115.819	24.8941	3.26234	1.6	3.26113	.0889103
420	-25.1576	115.785	25.9038	3.25193	1.4	3.25097	.078991
421	-25.1378	115.751	26.9134	3.24043	1.2	3.23968	.0693827
422	-25.118	115.716	27.923	3.22783	1.1	3.22727	.060079
423	-25.0982	115.682	28.9326	3.21418	.9	3.21377	.0510749
424	-25.0784	115.648	29.9422	3.19947	.8	3.19919	.0423655

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425	-25.0586	115.614	30.9518	3.18372	.6	3.18354	.0339465
426	-25.0388	115.579	31.9615	3.16694	.5	3.16684	.0258139
427	-25.019	115.545	32.9711	3.14915	.3	3.1491	.0179642
428	-24.9992	115.511	33.9807	3.13038	.2	3.13036	.0103939
429	-24.9794	115.476	34.9903	3.11062	.1	3.11062	3.1E-03
430	-24.9596	115.442	35.9999	3.0899	359.9	3.0899	-3.92E-03
431	-24.9398	115.408	37.0095	3.06824	359.8	3.06822	-.010671
432	-24.92	115.373	38.0192	3.04564	359.7	3.0456	-.017153
433	-24.9002	115.339	39.0288	3.02214	359.6	3.02205	-.0233695
434	-24.8804	115.305	40.0384	2.99774	359.4	2.9976	-.0293229
435	-24.8606	115.271	41.048	2.97248	359.3	2.97227	-.0350153
436	-24.8408	115.236	42.0576	2.94636	359.2	2.94608	-.0404489
437	-24.821	115.202	43.0672	2.91942	359.1	2.91907	-.0456259
438	-24.8012	115.168	44.0769	2.89168	359.	2.89124	-.0505482
439	-24.7814	115.133	45.0865	2.86317	358.9	2.86264	-.0552176
440	-24.7616	115.099	46.0961	2.83392	358.8	2.83329	-.0596359
441	-24.7418	115.065	47.1057	2.80397	358.7	2.80324	-.0638047
442	-24.722	115.031	48.1153	2.77336	358.6	2.77253	-.0677249
443	-24.7022	114.996	49.1249	2.74215	358.5	2.74122	-.0713966
444	-24.6824	114.962	50.1345	2.71043	358.4	2.7094	-.0748183
445	-24.6626	114.928	51.1442	2.6784	358.3	2.67726	-.0779819
446	-24.6428	114.893	52.1538	2.64659	358.2	2.64536	-.0808507
END	-24.623	114.859	53.1634	2.61981	358.2	2.6185	-.0830795
2J35	-25.613	112.026	2.6826	3.0836	6.8	3.06161	.367547
448	-25.5932	112.06	3.69222	3.10338	6.4	3.08407	.345681
449	-25.5734	112.095	4.70183	3.12225	6.	3.10541	.323856
450	-25.5536	112.129	5.71145	3.13912	5.5	3.12444	.30322
451	-25.5338	112.163	6.72106	3.15408	5.2	3.1413	.28367
452	-25.514	112.198	7.73068	3.16723	4.8	3.15612	.26509
453	-25.4942	112.232	8.7403	3.17868	4.5	3.16904	.247377
454	-25.4744	112.266	9.74991	3.18851	4.1	3.18017	.230443
455	-25.4546	112.3	10.7595	3.1968	3.8	3.18961	.214208
456	-25.4348	112.335	11.7691	3.2036	3.6	3.19743	.198611
457	-25.415	112.369	12.7788	3.20897	3.3	3.20371	.183596
458	-25.3952	112.403	13.7884	3.21295	3.	3.2085	.16912
459	-25.3754	112.438	14.798	3.2156	2.8	3.21185	.155144
460	-25.3556	112.472	15.8076	3.21693	2.5	3.21381	.141638
461	-25.3358	112.506	16.8172	3.21698	2.3	3.21441	.128574
462	-25.316	112.54	17.8268	3.21577	2.1	3.21368	.11593
463	-25.2962	112.575	18.8365	3.21334	1.8	3.21167	.103687
464	-25.2764	112.609	19.8461	3.20969	1.6	3.20838	.0918285
465	-25.2566	112.643	20.8557	3.20485	1.4	3.20385	.0803394
466	-25.2368	112.678	21.8653	3.19885	1.2	3.1981	.0692088
467	-25.217	112.712	22.8749	3.19168	1.	3.19115	.0584247
468	-25.1972	112.746	23.8845	3.18338	.9	3.18302	.0479781
469	-25.1774	112.781	24.8941	3.17396	.7	3.17373	.0378605
470	-25.1576	112.815	25.9038	3.16343	.5	3.1633	.0280644
471	-25.1378	112.849	26.9134	3.15181	.3	3.15175	.0185832
472	-25.118	112.883	27.923	3.13911	.2	3.1391	9.41E-03
473	-25.0982	112.918	28.9326	3.12535	0.0	3.12535	5.42E-04
474	-25.0784	112.952	29.9422	3.11054	359.9	3.11053	-8.03E-03
475	-25.0586	112.986	30.9518	3.09471	359.7	3.09466	-.016304
476	-25.0388	113.021	31.9615	3.07784	359.5	3.07775	-.0242898
477	-25.019	113.055	32.9711	3.05998	359.4	3.05982	-.0319894
478	-24.9992	113.089	33.9807	3.04114	359.3	3.04088	-.0394061
479	-24.9794	113.124	34.9903	3.02132	359.1	3.02096	-.0465432
480	-24.9596	113.158	35.9999	3.00055	359.	3.00007	-.0534038
481	-24.9398	113.192	37.0095	2.97884	358.8	2.97824	-.0599906
482	-24.92	113.227	38.0192	2.95621	358.7	2.95547	-.0663065
483	-24.9002	113.261	39.0288	2.93268	358.6	2.93179	-.0723541
484	-24.8804	113.295	40.0384	2.90827	358.5	2.90722	-.0781354
485	-24.8606	113.329	41.048	2.88299	358.3	2.88178	-.0836536
486	-24.8408	113.364	42.0576	2.85688	358.2	2.8555	-.0889096

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487	-24.821	113.398	43.0672	2.82995	358.1	2.82839	-.0939074
488	-24.8012	113.432	44.0769	2.80224	358.	2.8005	-.0986471
489	-24.7814	113.467	45.0865	2.77376	357.9	2.77184	-.103132
490	-24.7616	113.501	46.0961	2.74455	357.8	2.74245	-.107364
491	-24.7418	113.535	47.1057	2.71465	357.6	2.71236	-.111345
492	-24.722	113.569	48.1153	2.6841	357.5	2.68163	-.115074
493	-24.7022	113.604	49.1249	2.65297	357.4	2.65032	-.118553
494	-24.6824	113.638	50.1345	2.62135	357.3	2.61852	-.12178
495	-24.6626	113.672	51.1442	2.58941	357.2	2.5864	-.124747
496	-24.6428	113.707	52.1538	2.55771	357.1	2.55454	-.127419
END	-24.623	113.741	53.1634	2.53104	357.1	2.52773	-.12946
2J39	-23.655	114.3	53.1634	2.55233	357.5	2.54985	-.112429
498	-23.655	114.3	54.2156	2.52072	357.4	2.51812	-.11461
499	-23.655	114.3	55.2679	2.48325	357.3	2.4805	-.116929
500	-23.655	114.3	56.3201	2.44433	357.2	2.44143	-.11906
501	-23.655	114.3	57.3724	2.4043	357.1	2.40125	-.120978
502	-23.655	114.3	58.4246	2.36322	357.	2.36003	-.122677
503	-23.655	114.3	59.4769	2.32114	356.9	2.31782	-.124155
504	-23.655	114.3	60.5291	2.27807	356.8	2.27462	-.125411
505	-23.655	114.3	61.5814	2.23404	356.8	2.23046	-.126445
506	-23.655	114.3	62.6336	2.18905	356.7	2.18534	-.127255
507	-23.655	114.3	63.6859	2.14312	356.6	2.1393	-.127841
508	-23.655	114.3	64.7381	2.09635	356.5	2.09242	-.128203
509	-23.655	114.3	65.7904	2.04908	356.4	2.04505	-.128341
END	-23.655	114.3	66.8426	2.00679	356.3	2.00269	-.128273
2J40	-24.623	114.859	53.1634	2.57187	357.8	2.57003	-.0973595
511	-24.623	114.859	54.2156	2.5402	357.8	2.53824	-.0996937
512	-24.623	114.859	55.2679	2.50265	357.7	2.50057	-.102174
513	-24.623	114.859	56.3201	2.46366	357.6	2.46144	-.104469
514	-24.623	114.859	57.3724	2.42354	357.5	2.4212	-.106552
515	-24.623	114.859	58.4246	2.38239	357.4	2.37993	-.108419
516	-24.623	114.859	59.4769	2.34024	357.3	2.33765	-.110067
517	-24.623	114.859	60.5291	2.29709	357.2	2.29439	-.111495
518	-24.623	114.859	61.5814	2.25298	357.1	2.25016	-.112702
519	-24.623	114.859	62.6336	2.20791	357.	2.20498	-.113687
520	-24.623	114.859	63.6859	2.16191	357.	2.15888	-.11445
521	-24.623	114.859	64.7381	2.11505	356.9	2.11192	-.114991
522	-24.623	114.859	65.7904	2.0677	356.8	2.06448	-.115308
END	-24.623	114.859	66.8426	2.02534	356.7	2.02205	-.115416
2J41	-24.623	113.741	53.1634	2.541	357.3	2.53819	-.119421
524	-24.623	113.741	54.2156	2.50941	357.2	2.50647	-.121531
525	-24.623	113.741	55.2679	2.47197	357.1	2.46887	-.123776
526	-24.623	113.741	56.3201	2.43309	357.	2.42983	-.12583
527	-24.623	113.741	57.3724	2.39309	356.9	2.38968	-.127672
528	-24.623	113.741	58.4246	2.35205	356.8	2.34849	-.129293
529	-24.623	113.741	59.4769	2.31	356.8	2.3063	-.130693
530	-24.623	113.741	60.5291	2.26696	356.7	2.26313	-.13187
531	-24.623	113.741	61.5814	2.22296	356.6	2.21899	-.132823
532	-24.623	113.741	62.6336	2.17801	356.5	2.17391	-.133551
533	-24.623	113.741	63.6859	2.13212	356.4	2.1279	-.134056
534	-24.623	113.741	64.7381	2.08538	356.3	2.08105	-.134335
535	-24.623	113.741	65.7904	2.03814	356.2	2.0337	-.134389
END	-24.623	113.741	66.8426	1.99588	356.1	1.99136	-.134239
2J42	-23.655	114.3	66.8426	1.98311	356.3	1.97898	-.127848
537	-23.6685	114.3	67.8949	1.94299	356.2	1.9388	-.127568
538	-23.6821	114.3	68.9471	1.89547	356.2	1.89121	-.127059
539	-23.6956	114.3	69.9994	1.84644	356.1	1.84211	-.126329
540	-23.7092	114.3	71.0516	1.79651	356.	1.79213	-.125386
541	-23.7227	114.3	72.1039	1.74583	355.9	1.7414	-.12423
542	-23.7362	114.3	73.1561	1.69447	355.8	1.69001	-.122865
543	-23.7498	114.3	74.2084	1.64247	355.8	1.63799	-.121292
544	-23.7633	114.3	75.2606	1.58987	355.7	1.58537	-.119512
545	-23.7768	114.3	76.3129	1.53669	355.6	1.53219	-.11753

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546	-23.7904	114.3	77.3651	1.48298	355.5	1.47848	-.115347
547	-23.8039	114.3	78.4174	1.42877	355.5	1.4243	-.112967
548	-23.8175	114.3	79.4696	1.37424	355.4	1.3698	-.110397
END	-23.831	114.3	80.5219	1.32418	355.3	1.31977	-.107889
2J43	-24.623	114.859	66.8426	2.00066	356.6	1.99724	-.116969
550	-24.6162	114.847	67.8949	1.96048	356.6	1.95699	-.116849
551	-24.6095	114.835	68.9471	1.91288	356.5	1.90933	-.116504
552	-24.6027	114.824	69.9994	1.86378	356.4	1.86017	-.115938
553	-24.5959	114.812	71.0516	1.81378	356.4	1.81012	-.115156
554	-24.5892	114.8	72.1039	1.76303	356.3	1.75933	-.11416
555	-24.5824	114.788	73.1561	1.71161	356.2	1.70788	-.112954
556	-24.5756	114.777	74.2084	1.65955	356.1	1.6558	-.111538
557	-24.5688	114.765	75.2606	1.60689	356.1	1.60313	-.109914
558	-24.5621	114.753	76.3129	1.55365	356.	1.54989	-.108085
559	-24.5553	114.741	77.3651	1.49987	355.9	1.49612	-.106053
560	-24.5485	114.73	78.4174	1.44562	355.9	1.44188	-.103822
561	-24.5418	114.718	79.4696	1.39103	355.8	1.38733	-.101401
END	-24.535	114.706	80.5219	1.34091	355.8	1.33725	-.0990363
2J44	-24.623	113.741	66.8426	1.97391	356.1	1.96944	-.132855
563	-24.6162	113.753	67.8949	1.93382	356.1	1.92928	-.132501
564	-24.6095	113.765	68.9471	1.88634	356.	1.88172	-.131915
565	-24.6027	113.776	69.9994	1.83734	355.9	1.83265	-.13111
566	-24.5959	113.788	71.0516	1.78744	355.8	1.7827	-.130091
567	-24.5892	113.8	72.1039	1.73678	355.7	1.732	-.12886
568	-24.5824	113.812	73.1561	1.68546	355.7	1.68064	-.127421
569	-24.5756	113.823	74.2084	1.6335	355.6	1.62865	-.125775
570	-24.5688	113.835	75.2606	1.58094	355.5	1.57607	-.123925
571	-24.5621	113.847	76.3129	1.52779	355.4	1.52293	-.121871
572	-24.5553	113.859	77.3651	1.47412	355.3	1.46926	-.119619
573	-24.5485	113.87	78.4174	1.41996	355.3	1.41511	-.117169
574	-24.5418	113.882	79.4696	1.36546	355.2	1.36065	-.114532
END	-24.535	113.894	80.5219	1.31544	355.1	1.31066	-.111958
2J45	-23.831	114.3	80.5219	1.30692	355.3	1.30257	-.106607
576	-23.831	114.3	81.5479	1.26106	355.3	1.25676	-.104155
577	-23.831	114.3	82.5738	1.20843	355.2	1.20419	-.101202
578	-23.831	114.3	83.5998	1.15442	355.1	1.15025	-.0980206
579	-23.831	114.3	84.6258	1.0994	355.1	1.09532	-.0946286
580	-23.831	114.3	85.6517	1.0435	355.	1.03952	-.0910302
581	-23.831	114.3	86.6777	.986728	354.9	.982865	-.0872259
582	-23.831	114.3	87.7037	.929111	354.9	.925377	-.0832152
583	-23.831	114.3	88.7296	.870639	354.8	.867048	-.0789938
584	-23.831	114.3	89.7556	.811289	354.7	.807856	-.0745602
585	-23.831	114.3	90.7815	.751027	354.7	.747766	-.0699082
586	-23.831	114.3	91.8075	.689802	354.6	.68673	-.0650319
587	-23.831	114.3	92.8335	.627541	354.5	.624673	-.0599227
588	-23.831	114.3	93.8594	.564147	354.4	.561502	-.0545691
589	-23.831	114.3	94.8854	.49948	354.4	.497075	-.0489552
590	-23.831	114.3	95.9114	.433337	354.3	.431193	-.0430584
591	-23.831	114.3	96.9373	.365412	354.2	.363549	-.0368449
592	-23.831	114.3	97.9633	.295208	354.1	.293652	-.0302608
593	-23.831	114.3	98.9893	.221835	354.	.220618	-.0232104
594	-23.831	114.3	100.015	.143433	353.8	.142594	-.0154951
END	-23.831	114.3	101.041	.0587202	353.2	.0583066	-6.96E-03
2J46	-24.535	114.706	80.5219	1.31896	355.7	1.31518	-.0997863
596	-24.535	114.706	81.5479	1.27306	355.6	1.26933	-.0974592
597	-24.535	114.706	82.5738	1.22039	355.6	1.21671	-.094635
598	-24.535	114.706	83.5998	1.16633	355.5	1.16273	-.0915824
599	-24.535	114.706	84.6258	1.11128	355.4	1.10776	-.0883198
600	-24.535	114.706	85.6517	1.05533	355.4	1.05191	-.0848515
601	-24.535	114.706	86.6777	.998523	355.3	.995218	-.0811773
602	-24.535	114.706	87.7037	.940861	355.3	.937681	-.077296
603	-24.535	114.706	88.7296	.882351	355.2	.879309	-.0732054
604	-24.535	114.706	89.7556	.822957	355.2	.820068	-.0689017

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605	-24.535	114.706	90.7815	.76265	355.2	.759928	-.06438
606	-24.535	114.706	91.8075	.701387	355.1	.698847	-.059634
607	-24.535	114.706	92.8335	.639084	355.1	.636743	-.054655
608	-24.535	114.706	93.8594	.575649	355.1	.573523	-.0494315
609	-24.535	114.706	94.8854	.510942	355.1	.509048	-.0439476
610	-24.535	114.706	95.9114	.444758	355.1	.443117	-.0381807
611	-24.535	114.706	96.9373	.376794	355.1	.375425	-.032097
612	-24.535	114.706	97.9633	.306552	355.2	.305478	-.0256425
613	-24.535	114.706	98.9893	.233147	355.4	.232394	-.0187217
614	-24.535	114.706	100.015	.154723	355.9	.154322	-.0111363
END	-24.535	114.706	101.041	.0700391	357.8	.0699858	-2.73E-03
2J47	-24.535	113.894	80.5219	1.30083	355.2	1.2962	-.109726
616	-24.535	113.894	81.5479	1.25502	355.1	1.25043	-.107217
617	-24.535	113.894	82.5738	1.20242	355.	1.1979	-.104206
618	-24.535	113.894	83.5998	1.14845	355.	1.144	-.100965
619	-24.535	113.894	84.6258	1.09347	354.9	1.08912	-.0975143
620	-24.535	113.894	85.6517	1.03761	354.8	1.03335	-.0938572
621	-24.535	113.894	86.6777	.980879	354.7	.976742	-.0899943
622	-24.535	113.894	87.7037	.923303	354.7	.919296	-.0859241
623	-24.535	113.894	88.7296	.864872	354.6	.861009	-.081644
624	-24.535	113.894	89.7556	.805563	354.5	.80186	-.0771518
625	-24.535	113.894	90.7815	.745348	354.4	.741819	-.072441
626	-24.535	113.894	91.8075	.684161	354.3	.680823	-.0675058
627	-24.535	113.894	92.8335	.621944	354.2	.618812	-.0623382
628	-24.535	113.894	93.8594	.558594	354.2	.555686	-.0569261
629	-24.535	113.894	94.8854	.493971	354.	.491305	-.0512539
630	-24.535	113.894	95.9114	.427874	353.9	.425469	-.0452989
631	-24.535	113.894	96.9373	.359995	353.8	.357873	-.0390274
632	-24.535	113.894	97.9633	.289839	353.6	.288024	-.0323855
633	-24.535	113.894	98.9893	.216518	353.3	.215038	-.0252775
634	-24.535	113.894	100.015	.138178	352.7	.137065	-.0175047
END	-24.535	113.894	101.041	.0535763	350.4	.0528303	-8.91E-03
2J39	-23.655	114.3	53.1634	3.98E-03	270.5	3.44E-05	-3.98E-03
END	-24.623	114.859	53.1634	.0196361	196.1	-.018867	-5.44E-03
2J40	-24.623	114.859	53.1634	.0308886	16.6	.0295971	8.84E-03
END	-24.623	113.741	53.1634	.013022	34.7	.0107035	7.42E-03
2J41	-24.623	113.741	53.1634	2.63E-03	275.3	2.44E-04	-2.62E-03
END	-23.655	114.3	53.1634	.0190369	192.	-.0186199	-3.96E-03
2J42	-23.655	114.3	66.8426	.0113807	357.2	.0113668	-5.63E-04
END	-24.623	114.859	66.8426	.0121429	182.5	-.0121313	-5.31E-04
2J43	-24.623	114.859	66.8426	.0127162	4.6	.0126751	1.02E-03
END	-24.623	113.741	66.8426	.0108682	174.2	-.0108132	1.09E-03
2J44	-24.623	113.741	66.8426	.0111177	358.5	.0111139	-2.92E-04
END	-23.655	114.3	66.8426	.0123385	180.6	-.0123378	-1.38E-04
2J45	-23.831	114.3	80.5219	6.89E-03	349.9	6.78E-03	-1.21E-03
END	-24.535	114.706	80.5219	.0111575	181.6	-.011153	-3.16E-04
2J46	-24.535	114.706	80.5219	.0109283	2.3	.0109196	4.34E-04
END	-24.535	113.894	80.5219	7.11E-03	169.1	-6.98E-03	1.35E-03
2J47	-24.535	113.894	80.5219	7.54E-03	353.3	7.48E-03	-8.85E-04
END	-23.831	114.3	80.5219	.0104213	179.6	-.0104211	7.46E-05
2J48	-23.831	114.3	101.041	.0266275	350.3	.0262497	-4.47E-03
END	-24.535	114.706	101.041	.0342075	177.2	-.0341655	1.69E-03
2J49	-24.535	114.706	101.041	.0358353	358.3	.0358203	-1.04E-03
END	-24.535	113.894	101.041	.0250529	168.1	-.0245182	5.15E-03
2J50	-24.535	113.894	101.041	.0285608	352.4	.0283121	-3.76E-03
END	-23.831	114.3	101.041	.0321533	175.6	-.0320569	2.49E-03
GND	-48.6	228.6	0	2.05814	274.9	.177081	-2.05051
660	-48.6	228.6	1.3676	2.08535	273.6	.129295	-2.08134
END	-48.6	228.6	2.7352	2.09943	272.9	.104655	-2.09682
GND	-45.975	228.6	0	.0669641	210.4	-.0577402	-.0339154
662	-45.975	228.6	1.3676	.0529712	210.4	-.0457048	-.0267773
END	-45.975	228.6	2.7352	.10407	210.3	-.0898887	-.0524462
GND	-49.913	230.874	0	.0669797	210.3	-.0578475	-.033763

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664	-49.913	230.874	1.3676	.0529887	210.2	-.0457919	-.0266627
END	-49.913	230.874	2.7352	.10412	210.1	-.0900657	-.0522411
GND	-49.913	226.326	0	.0669172	210.5	-.0576848	-.0339173
666	-49.913	226.326	1.3676	.0529308	210.4	-.0456608	-.0267723
END	-49.913	226.326	2.7352	.103978	210.3	-.0898014	-.0524136
2J64	-45.975	228.6	2.7352	.716342	88.9	.0142272	.716201
668	-47.2875	228.6	2.7352	.70309	90.7	-8.2E-03	.703042
END	-48.6	228.6	2.7352	.691376	92.4	-.0287954	.690776
2J65	-49.913	230.874	2.7352	.76665	91.6	-.0209689	.766363
671	-49.2565	229.737	2.7352	.75447	93.3	-.0434431	.753218
END	-48.6	228.6	2.7352	.74372	94.9	-.0640567	.740957
2J66	-49.913	226.326	2.7352	.691207	87.4	.0312129	.690502
674	-49.2565	227.463	2.7352	.677433	89.3	8.79E-03	.677376
END	-48.6	228.6	2.7352	.665194	91.	-.0118033	.665089
2J64	-45.975	228.6	2.7352	.775666	262.3	-.104116	-.768647
677	-46.0146	228.6	3.76461	.79223	260.8	-.127312	-.781933
678	-46.0542	228.6	4.79402	.808965	259.3	-.150297	-.794881
679	-46.0938	228.6	5.82344	.824891	258.	-.171867	-.806788
680	-46.1334	228.6	6.85285	.839997	256.8	-.192139	-.817727
681	-46.173	228.6	7.88226	.85431	255.7	-.211238	-.827782
682	-46.2126	228.6	8.91167	.86785	254.7	-.229274	-.837017
683	-46.2522	228.6	9.94108	.880639	253.8	-.246348	-.845481
684	-46.2918	228.6	10.9705	.892724	252.9	-.262542	-.853245
685	-46.3314	228.6	11.9999	.904122	252.1	-.277926	-.860345
686	-46.371	228.6	13.0293	.914848	251.3	-.292561	-.866808
687	-46.4106	228.6	14.0587	.924934	250.6	-.306494	-.872677
688	-46.4502	228.6	15.0881	.934391	250.	-.319765	-.877973
689	-46.4898	228.6	16.1176	.943232	249.4	-.332411	-.882717
690	-46.5294	228.6	17.147	.951473	248.8	-.34446	-.886932
691	-46.569	228.6	18.1764	.959121	248.2	-.355938	-.89063
692	-46.6086	228.6	19.2058	.966186	247.7	-.366865	-.893826
693	-46.6482	228.6	20.2352	.972677	247.2	-.377261	-.896534
694	-46.6878	228.6	21.2646	.978603	246.7	-.387141	-.898769
695	-46.7274	228.6	22.294	.983969	246.2	-.39652	-.900537
696	-46.767	228.6	23.3234	.988778	245.8	-.405411	-.901845
697	-46.8066	228.6	24.3529	.993041	245.4	-.413824	-.902707
698	-46.8462	228.6	25.3823	.996763	245.	-.42177	-.903132
699	-46.8858	228.6	26.4117	.999942	244.6	-.429259	-.903118
700	-46.9254	228.6	27.4411	1.00259	244.2	-.436297	-.902679
701	-46.965	228.6	28.4705	1.00472	243.8	-.442895	-.901831
702	-47.0046	228.6	29.4999	1.00631	243.5	-.449058	-.900565
703	-47.0442	228.6	30.5293	1.0074	243.2	-.454792	-.898896
704	-47.0838	228.6	31.5587	1.00796	242.8	-.460106	-.896824
705	-47.1234	228.6	32.5881	1.00802	242.5	-.465003	-.894364
706	-47.163	228.6	33.6176	1.00758	242.2	-.469491	-.891514
707	-47.2026	228.6	34.647	1.00664	241.9	-.473574	-.88829
708	-47.2422	228.6	35.6764	1.00521	241.7	-.477259	-.884683
709	-47.2818	228.6	36.7058	1.00329	241.4	-.480549	-.880716
710	-47.3214	228.6	37.7352	1.00088	241.1	-.48345	-.876382
711	-47.361	228.6	38.7646	.998012	240.9	-.485968	-.871701
712	-47.4006	228.6	39.794	.994665	240.6	-.488107	-.866666
713	-47.4402	228.6	40.8234	.990858	240.4	-.489873	-.861292
714	-47.4798	228.6	41.8529	.986597	240.1	-.491271	-.855586
715	-47.5194	228.6	42.8823	.981883	239.9	-.492306	-.849547
716	-47.559	228.6	43.9117	.976736	239.7	-.492983	-.843197
717	-47.5986	228.6	44.9411	.971157	239.5	-.493308	-.836536
718	-47.6382	228.6	45.9705	.965154	239.3	-.493288	-.829571
719	-47.6778	228.6	46.9999	.95874	239.1	-.492927	-.822316
720	-47.7174	228.6	48.0293	.95193	238.9	-.492235	-.814786
721	-47.757	228.6	49.0587	.944733	238.7	-.491217	-.806986
722	-47.7966	228.6	50.0882	.937177	238.5	-.489883	-.798946
723	-47.8362	228.6	51.1176	.929279	238.3	-.488246	-.79068
724	-47.8758	228.6	52.147	.921095	238.1	-.486323	-.782245

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725	-47.9154	228.6	53.1764	.912783	238.	-.484164	-.773795
END	-47.955	228.6	54.2058	.905601	237.8	-.482147	-.766582
2J65	-49.913	230.874	2.7352	.821515	265.2	-.0690968	-.818604
727	-49.8932	230.84	3.76461	.836965	263.7	-.0923447	-.831855
728	-49.8734	230.805	4.79402	.852618	262.2	-.115387	-.844774
729	-49.8536	230.771	5.82344	.867549	260.9	-.137018	-.856661
730	-49.8338	230.737	6.85285	.881739	259.7	-.157352	-.867585
731	-49.814	230.702	7.88226	.895195	258.6	-.176516	-.877619
732	-49.7942	230.668	8.91167	.907951	257.6	-.194621	-.886847
733	-49.7744	230.634	9.94108	.920015	256.7	-.211767	-.895311
734	-49.7546	230.6	10.9705	.931421	255.8	-.228036	-.903075
735	-49.7348	230.565	11.9999	.942183	255.	-.243498	-.910174
736	-49.715	230.531	13.0293	.952326	254.3	-.258214	-.916652
737	-49.6952	230.497	14.0587	.961856	253.6	-.27223	-.922528
738	-49.6754	230.462	15.0881	.970796	252.9	-.285589	-.927838
739	-49.6556	230.428	16.1176	.979156	252.3	-.298324	-.932604
740	-49.6358	230.394	17.147	.986936	251.7	-.310465	-.936832
741	-49.616	230.359	18.1764	.994155	251.1	-.322037	-.940552
742	-49.5962	230.325	19.2058	1.00081	250.6	-.333061	-.943769
743	-49.5764	230.291	20.2352	1.00693	250.1	-.343556	-.946506
744	-49.5566	230.257	21.2646	1.01249	249.6	-.353537	-.948761
745	-49.5368	230.222	22.294	1.01751	249.1	-.36302	-.95055
746	-49.517	230.188	23.3234	1.022	248.7	-.372016	-.951887
747	-49.4972	230.154	24.3529	1.02596	248.2	-.380538	-.952778
748	-49.4774	230.119	25.3823	1.02939	247.8	-.388594	-.953223
749	-49.4576	230.085	26.4117	1.0323	247.4	-.396194	-.953244
750	-49.4378	230.051	27.4411	1.03469	247.1	-.403347	-.952834
751	-49.418	230.016	28.4705	1.03656	246.7	-.41006	-.952007
752	-49.3982	229.982	29.4999	1.03793	246.4	-.41634	-.950769
753	-49.3784	229.948	30.5293	1.03879	246.	-.422194	-.949129
754	-49.3586	229.914	31.5587	1.03915	245.7	-.427628	-.947085
755	-49.3388	229.879	32.5881	1.03901	245.4	-.432648	-.944646
756	-49.319	229.845	33.6176	1.03838	245.1	-.43726	-.941825
757	-49.2992	229.811	34.647	1.03725	244.8	-.441469	-.938614
758	-49.2794	229.776	35.6764	1.03565	244.5	-.44528	-.935036
759	-49.2596	229.742	36.7058	1.03356	244.3	-.448699	-.931084
760	-49.2398	229.708	37.7352	1.031	244.	-.451731	-.92677
761	-49.22	229.673	38.7646	1.02798	243.8	-.454379	-.922103
762	-49.2002	229.639	39.794	1.02448	243.5	-.456651	-.917076
763	-49.1804	229.605	40.8234	1.02054	243.3	-.458551	-.911716
764	-49.1606	229.571	41.8529	1.01614	243.1	-.460084	-.906017
765	-49.1408	229.536	42.8823	1.0113	242.9	-.461255	-.899985
766	-49.121	229.502	43.9117	1.00602	242.7	-.462068	-.893628
767	-49.1012	229.468	44.9411	1.00032	242.5	-.462532	-.886967
768	-49.0814	229.433	45.9705	.994201	242.3	-.46265	-.879995
769	-49.0616	229.399	46.9999	.98767	242.1	-.462429	-.872726
770	-49.0418	229.365	48.0293	.980749	241.9	-.461876	-.865181
771	-49.022	229.33	49.0587	.973441	241.7	-.460999	-.857361
772	-49.0022	229.296	50.0882	.965774	241.6	-.459806	-.849293
773	-48.9824	229.262	51.1176	.957771	241.4	-.45831	-.840998
774	-48.9626	229.228	52.147	.949484	241.3	-.456529	-.832527
775	-48.9428	229.193	53.1764	.941065	241.1	-.454512	-.824028
END	-48.923	229.159	54.2058	.933809	241.	-.452629	-.816778
2J66	-49.913	226.326	2.7352	.752707	260.7	-.121014	-.742915
777	-49.8932	226.36	3.76461	.769804	259.2	-.144186	-.756181
778	-49.8734	226.395	4.79402	.787045	257.7	-.167144	-.769092
779	-49.8536	226.429	5.82344	.803442	256.4	-.188687	-.780972
780	-49.8338	226.463	6.85285	.818974	255.2	-.208929	-.791875
781	-49.814	226.497	7.88226	.833677	254.1	-.227996	-.801895
782	-49.7942	226.532	8.91167	.847573	253.1	-.246001	-.811088
783	-49.7744	226.566	9.94108	.860703	252.2	-.263041	-.819523
784	-49.7546	226.6	10.9705	.873091	251.4	-.279201	-.827245
785	-49.7348	226.635	11.9999	.884771	250.6	-.29455	-.834302

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786	-49.715	226.669	13.0293	.895767	249.8	-.309147	-.840729
787	-49.6952	226.703	14.0587	.906097	249.1	-.323041	-.846556
788	-49.6754	226.738	15.0881	.915784	248.5	-.336274	-.85181
789	-49.6556	226.772	16.1176	.92484	247.8	-.348879	-.856512
790	-49.6358	226.806	17.147	.933282	247.3	-.360886	-.860684
791	-49.616	226.84	18.1764	.94112	246.7	-.372321	-.86434
792	-49.5962	226.875	19.2058	.948362	246.2	-.383205	-.867493
793	-49.5764	226.909	20.2352	.95502	245.7	-.393555	-.870159
794	-49.5566	226.943	21.2646	.961097	245.2	-.403389	-.872344
795	-49.5368	226.978	22.294	.96661	244.7	-.41272	-.87407
796	-49.517	227.012	23.3234	.971559	244.3	-.421563	-.875335
797	-49.4972	227.046	24.3529	.975953	243.9	-.429926	-.876156
798	-49.4774	227.081	25.3823	.979799	243.5	-.437822	-.876537
799	-49.4576	227.115	26.4117	.983094	243.1	-.445259	-.876481
800	-49.4378	227.149	27.4411	.985857	242.7	-.452245	-.876007
801	-49.418	227.184	28.4705	.988087	242.3	-.45879	-.875116
802	-49.3982	227.218	29.4999	.989783	242.	-.464898	-.873808
803	-49.3784	227.252	30.5293	.990963	241.6	-.470578	-.872104
804	-49.3586	227.286	31.5587	.991622	241.3	-.475836	-.869997
805	-49.3388	227.321	32.5881	.99177	241.	-.480677	-.867501
806	-49.319	227.355	33.6176	.991407	240.7	-.485107	-.864615
807	-49.2992	227.389	34.647	.990547	240.4	-.489132	-.861356
808	-49.2794	227.424	35.6764	.989189	240.1	-.492757	-.857721
809	-49.2596	227.458	36.7058	.987339	239.8	-.495987	-.853719
810	-49.2398	227.492	37.7352	.985011	239.6	-.498828	-.849363
811	-49.22	227.527	38.7646	.982205	239.3	-.501285	-.844654
812	-49.2002	227.561	39.794	.978921	239.1	-.503362	-.839591
813	-49.1804	227.595	40.8234	.975178	238.8	-.505065	-.834196
814	-49.1606	227.629	41.8529	.970979	238.6	-.5064	-.828468
815	-49.1408	227.664	42.8823	.966329	238.3	-.507371	-.822415
816	-49.121	227.698	43.9117	.961242	238.1	-.507983	-.816051
817	-49.1012	227.732	44.9411	.95572	237.9	-.508243	-.809376
818	-49.0814	227.767	45.9705	.949771	237.7	-.508157	-.802397
819	-49.0616	227.801	46.9999	.94342	237.4	-.507731	-.795142
820	-49.0418	227.835	48.0293	.936665	237.2	-.506971	-.787604
821	-49.022	227.87	49.0587	.929525	237.	-.505886	-.779805
822	-49.0022	227.904	50.0882	.922023	236.8	-.504485	-.771765
823	-48.9824	227.938	51.1176	.914183	236.6	-.50278	-.763506
824	-48.9626	227.972	52.147	.906059	236.4	-.50079	-.755085
825	-48.9428	228.007	53.1764	.897804	236.3	-.498565	-.746649
END	-48.923	228.041	54.2058	.890669	236.1	-.496484	-.739456
2J70	-47.955	228.6	54.2058	.901512	238.	-.478307	-.764164
827	-47.955	228.6	55.2787	.892808	237.8	-.475644	-.755558
828	-47.955	228.6	56.3516	.882329	237.6	-.472254	-.745305
829	-47.955	228.6	57.4245	.871251	237.5	-.468479	-.734578
830	-47.955	228.6	58.4973	.859672	237.3	-.464346	-.723477
831	-47.955	228.6	59.5702	.8476	237.1	-.45986	-.712008
832	-47.955	228.6	60.6431	.835046	237.	-.455025	-.700181
833	-47.955	228.6	61.716	.82202	236.8	-.449842	-.688011
834	-47.955	228.6	62.7889	.808525	236.7	-.444313	-.675498
835	-47.955	228.6	63.8618	.794564	236.5	-.43844	-.662648
836	-47.955	228.6	64.9346	.780145	236.4	-.432226	-.649467
837	-47.955	228.6	66.0075	.765293	236.2	-.425681	-.635978
838	-47.955	228.6	67.0804	.750121	236.1	-.41886	-.622284
END	-47.955	228.6	68.1533	.736359	235.9	-.412555	-.609937
2J71	-48.923	229.159	54.2058	.917105	239.7	-.462485	-.791953
840	-48.923	229.159	55.2787	.908361	239.6	-.459984	-.783284
841	-48.923	229.159	56.3516	.897837	239.4	-.456762	-.772967
842	-48.923	229.159	57.4245	.886724	239.3	-.45316	-.762184
843	-48.923	229.159	58.4973	.875101	239.1	-.449202	-.751012
844	-48.923	229.159	59.5702	.862994	239.	-.444893	-.739479
845	-48.923	229.159	60.6431	.850405	238.8	-.440236	-.727585
846	-48.923	229.159	61.716	.837345	238.7	-.435233	-.715345

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847	-48.923	229.159	62.7889	.82382	238.5	-.429886	-.702764
848	-48.923	229.159	63.8618	.80983	238.4	-.424197	-.689841
849	-48.923	229.159	64.9346	.795384	238.3	-.418169	-.676587
850	-48.923	229.159	66.0075	.780506	238.2	-.411812	-.663023
851	-48.923	229.159	67.0804	.765312	238.	-.40518	-.649254
END	-48.923	229.159	68.1533	.751534	237.9	-.399061	-.636831
2J72	-48.923	228.041	54.2058	.895267	237.1	-.486135	-.751782
853	-48.923	228.041	55.2787	.886581	237.	-.483397	-.743205
854	-48.923	228.041	56.3516	.876122	236.8	-.479927	-.73298
855	-48.923	228.041	57.4245	.865064	236.6	-.476073	-.722282
856	-48.923	228.041	58.4973	.853503	236.4	-.471858	-.711209
857	-48.923	228.041	59.5702	.841446	236.3	-.46729	-.699765
858	-48.923	228.041	60.6431	.82891	236.1	-.46237	-.687972
859	-48.923	228.041	61.716	.8159	235.9	-.457103	-.675833
860	-48.923	228.041	62.7889	.802418	235.8	-.451488	-.66335
861	-48.923	228.041	63.8618	.78847	235.6	-.445528	-.65053
862	-48.923	228.041	64.9346	.774064	235.4	-.439226	-.637382
863	-48.923	228.041	66.0075	.759223	235.3	-.432593	-.623925
864	-48.923	228.041	67.0804	.744062	235.1	-.425682	-.610265
END	-48.923	228.041	68.1533	.730308	235.	-.419289	-.597951
2J73	-47.955	228.6	68.1533	.729529	235.9	-.408844	-.604201
866	-47.9685	228.6	69.2262	.716331	235.8	-.402673	-.59244
867	-47.9821	228.6	70.299	.700548	235.7	-.395185	-.578444
868	-47.9956	228.6	71.3719	.684146	235.5	-.387288	-.563972
869	-48.0092	228.6	72.4448	.667305	235.4	-.379065	-.549187
870	-48.0227	228.6	73.5177	.650077	235.3	-.370541	-.534135
871	-48.0362	228.6	74.5906	.632483	235.1	-.361727	-.518834
872	-48.0498	228.6	75.6634	.614538	235.	-.352632	-.503297
873	-48.0633	228.6	76.7363	.596254	234.9	-.34326	-.487536
874	-48.0768	228.6	77.8092	.577641	234.7	-.33362	-.471558
875	-48.0904	228.6	78.8821	.558713	234.6	-.323718	-.455375
876	-48.1039	228.6	79.9549	.539491	234.5	-.313567	-.439006
877	-48.1175	228.6	81.0278	.520037	234.3	-.303199	-.422503
END	-48.131	228.6	82.1007	.501998	234.2	-.293503	-.407256
2J74	-48.923	229.159	68.1533	.742356	237.6	-.397754	-.626804
879	-48.9162	229.147	69.2262	.729152	237.5	-.391752	-.614973
880	-48.9095	229.135	70.299	.71336	237.4	-.384441	-.600906
881	-48.9027	229.124	71.3719	.69695	237.3	-.376718	-.586364
882	-48.8959	229.112	72.4448	.680103	237.2	-.368668	-.57151
883	-48.8892	229.1	73.5177	.662868	237.1	-.360316	-.556387
884	-48.8824	229.088	74.5906	.64527	237.	-.351671	-.541018
885	-48.8756	229.077	75.6634	.627322	236.9	-.342744	-.525413
886	-48.8688	229.065	76.7363	.609035	236.8	-.333539	-.509583
887	-48.8621	229.053	77.8092	.590421	236.7	-.324063	-.493538
888	-48.8553	229.041	78.8821	.571493	236.6	-.314324	-.477289
889	-48.8485	229.03	79.9549	.552272	236.6	-.304334	-.460853
890	-48.8418	229.018	81.0278	.53282	236.5	-.294126	-.444283
END	-48.835	229.006	82.1007	.514788	236.4	-.284586	-.428972
2J75	-48.923	228.041	68.1533	.723728	235.1	-.413976	-.593639
892	-48.9162	228.053	69.2262	.710532	235.	-.407725	-.581908
893	-48.9095	228.065	70.299	.694755	234.8	-.400155	-.567944
894	-48.9027	228.076	71.3719	.678357	234.7	-.392176	-.553504
895	-48.8959	228.088	72.4448	.661523	234.5	-.383873	-.538752
896	-48.8892	228.1	73.5177	.6443	234.4	-.37527	-.523732
897	-48.8824	228.112	74.5906	.626712	234.2	-.366378	-.508464
898	-48.8756	228.123	75.6634	.608774	234.1	-.357204	-.492961
899	-48.8688	228.135	76.7363	.590496	233.9	-.347757	-.477232
900	-48.8621	228.147	77.8092	.571891	233.8	-.338042	-.461288
901	-48.8553	228.159	78.8821	.552971	233.6	-.328066	-.44514
902	-48.8485	228.17	79.9549	.533759	233.5	-.317842	-.428806
903	-48.8418	228.182	81.0278	.514315	233.3	-.307404	-.412338
END	-48.835	228.194	82.1007	.496286	233.1	-.297639	-.397127
2J76	-48.131	228.6	82.1007	.496312	234.3	-.289859	-.402874

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905	-48.131	228.6	83.1468	.479687	234.2	-.280843	-.388879
906	-48.131	228.6	84.1929	.460506	234.	-.270365	-.372784
907	-48.131	228.6	85.239	.440737	233.9	-.259489	-.356251
908	-48.131	228.6	86.285	.420502	233.8	-.248276	-.339383
909	-48.131	228.6	87.3311	.399837	233.7	-.236746	-.322213
910	-48.131	228.6	88.3772	.378753	233.6	-.224905	-.304749
911	-48.131	228.6	89.4233	.357253	233.5	-.212752	-.286995
912	-48.131	228.6	90.4694	.33533	233.3	-.200282	-.268948
913	-48.131	228.6	91.5155	.312978	233.2	-.187493	-.250602
914	-48.131	228.6	92.5616	.290181	233.1	-.174372	-.231947
915	-48.131	228.6	93.6076	.266919	232.9	-.160907	-.212967
916	-48.131	228.6	94.6537	.243164	232.8	-.14708	-.193639
917	-48.131	228.6	95.6998	.218876	232.6	-.132867	-.173934
918	-48.131	228.6	96.7459	.193998	232.5	-.118232	-.153806
919	-48.131	228.6	97.792	.168451	232.3	-.103125	-.133196
920	-48.131	228.6	98.8381	.142113	232.	-.0874706	-.112005
921	-48.131	228.6	99.8841	.114787	231.7	-.071147	-.0900784
922	-48.131	228.6	100.93	.0861207	231.2	-.0539376	-.067138
923	-48.131	228.6	101.976	.0553751	230.3	-.0353848	-.0425948
END	-48.131	228.6	103.022	.0219991	226.6	-.0151133	-.0159859
2J77	-48.835	229.006	82.1007	.505819	236.	-.28254	-.419552
925	-48.835	229.006	83.1468	.489204	236.	-.27366	-.405501
926	-48.835	229.006	84.1929	.470031	235.9	-.263324	-.389345
927	-48.835	229.006	85.239	.450272	235.9	-.252589	-.372751
928	-48.835	229.006	86.285	.430048	235.8	-.24152	-.355823
929	-48.835	229.006	87.3311	.409395	235.8	-.230132	-.338591
930	-48.835	229.006	88.3772	.388325	235.8	-.218435	-.321064
931	-48.835	229.006	89.4233	.366838	235.8	-.206425	-.303247
932	-48.835	229.006	90.4694	.344932	235.8	-.1941	-.285138
933	-48.835	229.006	91.5155	.322598	235.8	-.181455	-.266728
934	-48.835	229.006	92.5616	.299821	235.8	-.168478	-.248008
935	-48.835	229.006	93.6076	.276583	235.9	-.155158	-.228963
936	-48.835	229.006	94.6537	.252853	236.	-.141476	-.209569
937	-48.835	229.006	95.6998	.228595	236.1	-.127407	-.189798
938	-48.835	229.006	96.7459	.203754	236.3	-.112917	-.169605
939	-48.835	229.006	97.792	.178253	236.7	-.0979542	-.148926
940	-48.835	229.006	98.8381	.151974	237.1	-.0824452	-.127668
941	-48.835	229.006	99.8841	.124732	237.9	-.0662666	-.105674
942	-48.835	229.006	100.93	.0961991	239.2	-.0492023	-.0826644
943	-48.835	229.006	101.976	.0657145	242.1	-.0307952	-.0580522
END	-48.835	229.006	103.022	.0331377	251.2	-.0106729	-.0313719
2J78	-48.835	228.194	82.1007	.491822	233.4	-.29312	-.39493
945	-48.835	228.194	83.1468	.475203	233.3	-.284044	-.380968
946	-48.835	228.194	84.1929	.456028	233.1	-.273505	-.364906
947	-48.835	228.194	85.239	.436267	233.	-.262566	-.348407
948	-48.835	228.194	86.285	.41604	232.8	-.251291	-.331575
949	-48.835	228.194	87.3311	.395383	232.7	-.239699	-.314439
950	-48.835	228.194	88.3772	.374308	232.5	-.227796	-.297011
951	-48.835	228.194	89.4233	.352815	232.3	-.21558	-.279292
952	-48.835	228.194	90.4694	.330904	232.1	-.203049	-.261282
953	-48.835	228.194	91.5155	.308563	231.9	-.190198	-.242973
954	-48.835	228.194	92.5616	.285778	231.7	-.177015	-.224354
955	-48.835	228.194	93.6076	.26253	231.5	-.163488	-.20541
956	-48.835	228.194	94.6537	.23879	231.2	-.149599	-.186121
957	-48.835	228.194	95.6998	.21452	230.9	-.135323	-.166453
958	-48.835	228.194	96.7459	.189666	230.5	-.120626	-.146364
959	-48.835	228.194	97.792	.164149	230.	-.105457	-.125792
960	-48.835	228.194	98.8381	.137851	229.4	-.0897411	-.10464
961	-48.835	228.194	99.8841	.110586	228.4	-.0733567	-.0827528
962	-48.835	228.194	100.93	.0820236	226.9	-.0560855	-.0598522
963	-48.835	228.194	101.976	.0515142	223.3	-.0374716	-.0353495
END	-48.835	228.194	103.022	.0192576	207.1	-.017138	-8.78E-03
2J70	-47.955	228.6	54.2058	7.24E-03	136.3	-5.23E-03	5.E-03

**APPENDIX B – DAY ARRAY OPERATION
WNYC(AM) – NEW YORK, NEW YORK**

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END	-48.923	229.159	54.2058	.0107071	111.	-3.84E-03	1.E-02
2J71	-48.923	229.159	54.2058	.0160043	292.1	6.02E-03	-.0148298
END	-48.923	228.041	54.2058	.0123494	307.1	7.45E-03	-9.85E-03
2J72	-48.923	228.041	54.2058	3.81E-03	139.5	-2.9E-03	2.47E-03
END	-47.955	228.6	54.2058	7.55E-03	100.6	-1.39E-03	7.42E-03
2J73	-47.955	228.6	68.1533	3.27E-03	218.9	-2.54E-03	-2.05E-03
END	-48.923	229.159	68.1533	4.74E-03	79.7	8.45E-04	4.66E-03
2J74	-48.923	229.159	68.1533	5.38E-03	265.1	-4.61E-04	-5.36E-03
END	-48.923	228.041	68.1533	3.25E-03	24.2	2.97E-03	1.33E-03
2J75	-48.923	228.041	68.1533	3.79E-03	231.8	-2.35E-03	-2.98E-03
END	-47.955	228.6	68.1533	3.87E-03	72.4	1.17E-03	3.68E-03
2J76	-48.131	228.6	82.1007	2.36E-03	203.6	-2.17E-03	-9.44E-04
END	-48.835	229.006	82.1007	4.57E-03	74.7	1.21E-03	4.41E-03
2J77	-48.835	229.006	82.1007	5.08E-03	260.5	-8.37E-04	-5.01E-03
END	-48.835	228.194	82.1007	2.57E-03	7.1	2.55E-03	3.18E-04
2J78	-48.835	228.194	82.1007	2.72E-03	223.7	-1.97E-03	-1.88E-03
END	-48.131	228.6	82.1007	3.74E-03	66.7	1.48E-03	3.44E-03
2J79	-48.131	228.6	103.022	9.63E-03	206.3	-8.63E-03	-4.27E-03
END	-48.835	229.006	103.022	.0155372	68.7	5.65E-03	.0144751
2J80	-48.835	229.006	103.022	.0176288	253.4	-5.03E-03	-.0168969
END	-48.835	228.194	103.022	9.43E-03	11.1	9.26E-03	1.81E-03
2J81	-48.835	228.194	103.022	.0105224	221.5	-7.88E-03	-6.97E-03
END	-48.131	228.6	103.022	.0133919	61.	6.48E-03	.011717

APPENDIX C

NIGHTTIME DIRECTIONAL ARRAY MODEL

APPENDIX C –NIGHTTIME DIRECTIONAL OPERATION WNYC(AM) – NEW YORK, NEW YORK

PAGE C-1

IMPEDANCE - NIGHT

normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
.82	23.868	30.046	38.373	51.5	2.9948	-6.032	-1.2456
source = 2; node 330, sector 1							
.82	63.803	52.386	82.554	39.4	2.5237	-7.2819	-.89903
source = 3; node 659, sector 1							
.82	182.73	43.257	187.78	13.3	3.875	-4.5867	-1.8562

GEOMETRY - NIGHT

Dimensions in meters

Environment: perfect ground

wire	caps	X	Y	Z	radius	segs
1	none	0	0	0	.0127	2
		0	0	2.6563		
2	none	2.625	0	0	.0333	2
		2.625	0	2.6563		
3	none	-1.313	2.274	0	.0333	2
		-1.313	2.274	2.6563		
4	none	-1.313	-2.274	0	.0333	2
		-1.313	-2.274	2.6563		
5	none	2.625	0	2.6563	.0127	2
		0	0	2.6563		
6	none	-1.313	2.274	2.6563	.0127	2
		0	0	2.6563		
7	none	-1.313	-2.274	2.6563	.0127	2
		0	0	2.6563		
8	none	2.625	0	2.6563	.0333	50
		.645	0	52.6422		
9	none	-1.313	2.274	2.6563	.0333	50
		-.323	.559	52.6422		
10	none	-1.313	-2.274	2.6563	.0333	50
		-.323	-.559	52.6422		
11	none	.645	0	52.6422	.0476	13
		.645	0	66.1873		
12	none	-.323	.559	52.6422	.0476	13
		-.323	.559	66.1873		
13	none	-.323	-.559	52.6422	.0476	13
		-.323	-.559	66.1873		
14	none	.645	0	66.1873	.0365	13
		.469	0	79.7324		
15	none	-.323	.559	66.1873	.0365	13
		-.235	.406	79.7324		
16	none	-.323	-.559	66.1873	.0365	13
		-.235	-.406	79.7324		
17	none	.469	0	79.7324	.027	20
		.469	0	100.051		
18	none	-.235	.406	79.7324	.027	20
		-.235	.406	100.051		
19	none	-.235	-.406	79.7324	.027	20
		-.235	-.406	100.051		
20	none	.645	0	52.6422	.0476	1
		-.323	.559	52.6422		
21	none	-.323	.559	52.6422	.0476	1
		-.323	-.559	52.6422		
22	none	-.323	-.559	52.6422	.0476	1
		.645	0	52.6422		
23	none	.645	0	66.1873	.0365	1
		-.323	.559	66.1873		

**APPENDIX C –NIGHTTIME DIRECTIONAL OPERATION
WNYC(AM) – NEW YORK, NEW YORK**

PAGE C-2

24	none	-.323	.559	66.1873	.0365	1
		-.323	-.559	66.1873		
25	none	-.323	-.559	66.1873	.0365	1
		.645	0	66.1873		
26	none	.469	0	79.7324	.027	1
		-.235	.406	79.7324		
27	none	-.235	.406	79.7324	.027	1
		-.235	-.406	79.7324		
28	none	-.235	-.406	79.7324	.027	1
		.469	0	79.7324		
29	none	.469	0	100.051	.027	1
		-.235	.406	100.051		
30	none	-.235	.406	100.051	.027	1
		-.235	-.406	100.051		
31	none	-.235	-.406	100.051	.027	1
		.469	0	100.051		
32	none	-24.3	114.3	0	.0127	2
		-24.3	114.3	2.6826		
33	none	-21.675	114.3	0	.0333	2
		-21.675	114.3	2.6826		
34	none	-25.613	116.574	0	.0333	2
		-25.613	116.574	2.6826		
35	none	-25.613	112.026	0	.0333	2
		-25.613	112.026	2.6826		
36	none	-21.675	114.3	2.6826	.0127	2
		-24.3	114.3	2.6826		
37	none	-25.613	116.574	2.6826	.0127	2
		-24.3	114.3	2.6826		
38	none	-25.613	112.026	2.6826	.0127	2
		-24.3	114.3	2.6826		
39	none	-21.675	114.3	2.6826	.0333	50
		-23.655	114.3	53.1634		
40	none	-25.613	116.574	2.6826	.0333	50
		-24.623	114.859	53.1634		
41	none	-25.613	112.026	2.6826	.0333	50
		-24.623	113.741	53.1634		
42	none	-23.655	114.3	53.1634	.0476	13
		-23.655	114.3	66.8426		
43	none	-24.623	114.859	53.1634	.0476	13
		-24.623	114.859	66.8426		
44	none	-24.623	113.741	53.1634	.0476	13
		-24.623	113.741	66.8426		
45	none	-23.655	114.3	66.8426	.0365	13
		-23.831	114.3	80.5219		
46	none	-24.623	114.859	66.8426	.0365	13
		-24.535	114.706	80.5219		
47	none	-24.623	113.741	66.8426	.0365	13
		-24.535	113.894	80.5219		
48	none	-23.831	114.3	80.5219	.027	20
		-23.831	114.3	101.041		
49	none	-24.535	114.706	80.5219	.027	20
		-24.535	114.706	101.041		
50	none	-24.535	113.894	80.5219	.027	20
		-24.535	113.894	101.041		
51	none	-23.655	114.3	53.1634	.0476	1
		-24.623	114.859	53.1634		
52	none	-24.623	114.859	53.1634	.0476	1
		-24.623	113.741	53.1634		
53	none	-24.623	113.741	53.1634	.0476	1
		-23.655	114.3	53.1634		
54	none	-23.655	114.3	66.8426	.0365	1
		-24.623	114.859	66.8426		

**APPENDIX C –NIGHTTIME DIRECTIONAL OPERATION
WNYC(AM) – NEW YORK, NEW YORK**

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55	none	-24.623	114.859	66.8426	.0365	1
		-24.623	113.741	66.8426		
56	none	-24.623	113.741	66.8426	.0365	1
		-23.655	114.3	66.8426		
57	none	-23.831	114.3	80.5219	.027	1
		-24.535	114.706	80.5219		
58	none	-24.535	114.706	80.5219	.027	1
		-24.535	113.894	80.5219		
59	none	-24.535	113.894	80.5219	.027	1
		-23.831	114.3	80.5219		
60	none	-23.831	114.3	101.041	.027	1
		-24.535	114.706	101.041		
61	none	-24.535	114.706	101.041	.027	1
		-24.535	113.894	101.041		
62	none	-24.535	113.894	101.041	.027	1
		-23.831	114.3	101.041		
63	none	-48.6	228.6	0	.0127	2
		-48.6	228.6	2.7352		
64	none	-45.975	228.6	0	.0333	2
		-45.975	228.6	2.7352		
65	none	-49.913	230.874	0	.0333	2
		-49.913	230.874	2.7352		
66	none	-49.913	226.326	0	.0333	2
		-49.913	226.326	2.7352		
67	none	-45.975	228.6	2.7352	.0127	2
		-48.6	228.6	2.7352		
68	none	-49.913	230.874	2.7352	.0127	2
		-48.6	228.6	2.7352		
69	none	-49.913	226.326	2.7352	.0127	2
		-48.6	228.6	2.7352		
70	none	-45.975	228.6	2.7352	.0333	50
		-47.955	228.6	54.2058		
71	none	-49.913	230.874	2.7352	.0333	50
		-48.923	229.159	54.2058		
72	none	-49.913	226.326	2.7352	.0333	50
		-48.923	228.041	54.2058		
73	none	-47.955	228.6	54.2058	.0476	13
		-47.955	228.6	68.1533		
74	none	-48.923	229.159	54.2058	.0476	13
		-48.923	229.159	68.1533		
75	none	-48.923	228.041	54.2058	.0476	13
		-48.923	228.041	68.1533		
76	none	-47.955	228.6	68.1533	.0365	13
		-48.131	228.6	82.1007		
77	none	-48.923	229.159	68.1533	.0365	13
		-48.835	229.006	82.1007		
78	none	-48.923	228.041	68.1533	.0365	13
		-48.835	228.194	82.1007		
79	none	-48.131	228.6	82.1007	.027	20
		-48.131	228.6	103.022		
80	none	-48.835	229.006	82.1007	.027	20
		-48.835	229.006	103.022		
81	none	-48.835	228.194	82.1007	.027	20
		-48.835	228.194	103.022		
82	none	-47.955	228.6	54.2058	.0476	1
		-48.923	229.159	54.2058		
83	none	-48.923	229.159	54.2058	.0476	1
		-48.923	228.041	54.2058		
84	none	-48.923	228.041	54.2058	.0476	1
		-47.955	228.6	54.2058		
85	none	-47.955	228.6	68.1533	.0365	1
		-48.923	229.159	68.1533		

APPENDIX C –NIGHTTIME DIRECTIONAL OPERATION WNYC(AM) – NEW YORK, NEW YORK

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86	none	-48.923	229.159	68.1533	.0365	1
		-48.923	228.041	68.1533		
87	none	-48.923	228.041	68.1533	.0365	1
		-47.955	228.6	68.1533		
88	none	-48.131	228.6	82.1007	.027	1
		-48.835	229.006	82.1007		
89	none	-48.835	229.006	82.1007	.027	1
		-48.835	228.194	82.1007		
90	none	-48.835	228.194	82.1007	.027	1
		-48.131	228.6	82.1007		
91	none	-48.131	228.6	103.022	.027	1
		-48.835	229.006	103.022		
92	none	-48.835	229.006	103.022	.027	1
		-48.835	228.194	103.022		
93	none	-48.835	228.194	103.022	.027	1
		-48.131	228.6	103.022		

Number of wires = 93
current nodes = 987

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	89	.811996	63	1.3676
segment/radius ratio	11	21.8893	63	107.685
radius	1	.0127	11	.0476

ELECTRICAL DESCRIPTION - NIGHT

Frequencies (MHz)

frequency		no. of steps	segment length (wavelengths)	
no.	lowest		minimum	maximum
1	.82	0	2.22E-03	3.74E-03

Sources

source	node	sector	magnitude	phase	type
1	1	1	116.631	141.9	voltage
2	330	1	363.643	48.9	voltage
3	659	1	323.262	313.2	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	4	0	0	0	1.5E-05	0
2	6	0	0	0	1.5E-05	0
3	8	0	0	0	1.5E-05	0
4	333	0	0	0	1.5E-05	0
5	335	0	0	0	1.5E-05	0
6	337	0	0	0	1.5E-05	0
7	662	0	0	0	1.5E-05	0
8	664	0	0	0	1.5E-05	0
9	666	0	0	0	1.5E-05	0

RMS CURRENT - NIGHT

Frequency = .82 MHz
Input power = 1,000. watts
Efficiency = 100. %
coordinates in meters

current				mag	phase	real	imaginary
no.	X	Y	Z	(amps)	(deg)	(amps)	(amps)
GND	0	0	0	2.14919	90.4	-.0133727	2.14915
2	0	0	1.32815	2.1541	90.2	-9.33E-03	2.15408
END	0	0	2.6563	2.15624	90.2	-7.25E-03	2.15622
GND	2.625	0	0	5.68E-03	29.2	4.96E-03	2.78E-03

**APPENDIX C –NIGHTTIME DIRECTIONAL OPERATION
WNYC(AM) – NEW YORK, NEW YORK**

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4	2.625	0	1.32815	4.49E-03	28.5	3.94E-03	2.14E-03
END	2.625	0	2.6563	8.64E-03	27.3	7.68E-03	3.96E-03
GND	-1.313	2.274	0	5.69E-03	28.9	4.98E-03	2.75E-03
6	-1.313	2.274	1.32815	4.49E-03	28.2	3.96E-03	2.12E-03
END	-1.313	2.274	2.6563	8.65E-03	26.9	7.71E-03	3.91E-03
GND	-1.313	-2.274	0	5.68E-03	29.4	4.95E-03	2.79E-03
8	-1.313	-2.274	1.32815	4.49E-03	28.6	3.94E-03	2.15E-03
END	-1.313	-2.274	2.6563	8.64E-03	27.4	7.67E-03	3.97E-03
2J2	2.625	0	2.6563	.71933	269.8	-2.54E-03	-.719326
10	1.3125	0	2.6563	.718244	270.	-5.7E-04	-.718244
END	0	0	2.6563	.717064	270.1	1.23E-03	-.717063
2J3	-1.313	2.274	2.6563	.728111	270.3	3.76E-03	-.728101
13	-.6565	1.137	2.6563	.727042	270.5	5.73E-03	-.727019
END	0	0	2.6563	.725877	270.6	7.54E-03	-.725838
2J4	-1.313	-2.274	2.6563	.715619	269.6	-5.29E-03	-.715599
16	-.6565	-1.137	2.6563	.714518	269.7	-3.33E-03	-.71451
END	0	0	2.6563	.713324	269.9	-1.52E-03	-.713322
2J2	2.625	0	2.6563	.723358	89.2	.0102173	.723286
19	2.5854	0	3.65602	.724152	89.	.0121774	.724049
20	2.5458	0	4.65574	.724731	88.9	.0141232	.724594
21	2.5062	0	5.65545	.725045	88.7	.0159501	.72487
22	2.4666	0	6.65517	.725099	88.6	.0176679	.724884
23	2.427	0	7.65489	.7249	88.5	.0192873	.724643
24	2.3874	0	8.65461	.724469	88.4	.0208176	.724169
25	2.3478	0	9.65433	.723798	88.2	.0222671	.723455
26	2.3082	0	10.654	.722902	88.1	.0236428	.722515
27	2.2686	0	11.6538	.72178	88.	.0249506	.721348
28	2.229	0	12.6535	.720446	87.9	.0261955	.719969
29	2.1894	0	13.6532	.718893	87.8	.0273816	.718371
30	2.1498	0	14.6529	.717128	87.7	.0285124	.716561
31	2.1102	0	15.6526	.715158	87.6	.0295907	.714546
32	2.0706	0	16.6524	.71299	87.5	.0306191	.712333
33	2.031	0	17.6521	.71061	87.5	.0315998	.709907
34	1.9914	0	18.6518	.708032	87.4	.0325344	.707284
35	1.9518	0	19.6515	.705262	87.3	.0334245	.70447
36	1.9122	0	20.6512	.702295	87.2	.0342716	.701458
37	1.8726	0	21.6509	.699135	87.1	.0350768	.698255
38	1.833	0	22.6507	.695787	87.	.0358411	.694863
39	1.7934	0	23.6504	.69225	87.	.0365656	.691283
40	1.7538	0	24.6501	.688528	86.9	.0372509	.687519
41	1.7142	0	25.6498	.684624	86.8	.0378979	.683574
42	1.6746	0	26.6495	.680539	86.8	.0385073	.679448
43	1.635	0	27.6493	.676277	86.7	.0390797	.675147
44	1.5954	0	28.649	.671839	86.6	.0396156	.67067
45	1.5558	0	29.6487	.667229	86.6	.0401157	.666022
46	1.5162	0	30.6484	.662449	86.5	.0405803	.661204
47	1.4766	0	31.6481	.657502	86.4	.04101	.656221
48	1.437	0	32.6478	.652389	86.4	.0414053	.651074
49	1.3974	0	33.6476	.647116	86.3	.0417664	.645767
50	1.3578	0	34.6473	.641684	86.2	.0420939	.640302
51	1.3182	0	35.647	.636095	86.2	.0423881	.634682
52	1.2786	0	36.6467	.630356	86.1	.0426494	.628912
53	1.239	0	37.6464	.624467	86.1	.0428783	.622993
54	1.1994	0	38.6461	.618433	86.	.043075	.616931
55	1.1598	0	39.6459	.612258	86.	.0432401	.610729
56	1.1202	0	40.6456	.605946	85.9	.0433737	.604391
57	1.0806	0	41.6453	.599501	85.8	.0434765	.597923
58	1.041	0	42.645	.592928	85.8	.0435488	.591327
59	1.0014	0	43.6447	.586233	85.7	.043591	.58461
60	.9618	0	44.6445	.579421	85.7	.0436035	.577778
61	.9222	0	45.6442	.572499	85.6	.043587	.570837
62	.8826	0	46.6439	.565474	85.6	.0435418	.563795
63	.843	0	47.6436	.558356	85.5	.0434686	.556661

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64	.8034	0	48.6433	.551158	85.5	.0433681	.549449
65	.7638	0	49.643	.5439	85.4	.0432414	.542179
66	.7242	0	50.6428	.536623	85.4	.0430899	.53489
67	.6846	0	51.6425	.529454	85.4	.0429177	.527712
END	.645	0	52.6422	.523453	85.3	.0427555	.521704
2J3	-1.313	2.274	2.6563	.732022	89.7	3.95E-03	.732011
69	-1.2932	2.2397	3.65602	.732799	89.5	5.92E-03	.732775
70	-1.2734	2.2054	4.65574	.733348	89.4	7.88E-03	.733305
71	-1.2536	2.1711	5.65545	.733638	89.2	9.72E-03	.733574
72	-1.2338	2.1368	6.65517	.73367	89.1	.0114502	.733581
73	-1.214	2.1025	7.65489	.733457	89.	.0130835	.733341
74	-1.1942	2.0682	8.65461	.733006	88.9	.0146286	.73286
75	-1.1744	2.0339	9.65433	.732315	88.7	.0160938	.732139
76	-1.1546	1.9996	10.654	.731407	88.6	.0174859	.731198
77	-1.1348	1.9653	11.6538	.730267	88.5	.0188109	.730024
78	-1.115	1.931	12.6535	.728915	88.4	.0200737	.728638
79	-1.0952	1.8967	13.6532	.727352	88.3	.0212784	.72704
80	-1.0754	1.8624	14.6529	.72557	88.2	.0224285	.725223
81	-1.0556	1.8281	15.6526	.72359	88.1	.0235269	.723208
82	-1.0358	1.7938	16.6524	.721399	88.	.0245761	.72098
83	-1.016	1.7595	17.6521	.71901	88.	.025578	.718555
84	-.9962	1.7252	18.6518	.716423	87.9	.0265345	.715932
85	-.9764	1.6909	19.6515	.713638	87.8	.0274472	.71311
86	-.9566	1.6566	20.6512	.710655	87.7	.0283174	.710091
87	-.9368	1.6223	21.6509	.707486	87.6	.0291462	.706885
88	-.917	1.588	22.6507	.704125	87.6	.0299347	.703488
89	-.8972	1.5537	23.6504	.700577	87.5	.0306838	.699904
90	-.8774	1.5194	24.6501	.696844	87.4	.0313943	.696136
91	-.8576	1.4851	25.6498	.692929	87.3	.032067	.692187
92	-.8378	1.4508	26.6495	.688835	87.3	.0327025	.688058
93	-.818	1.4165	27.6493	.684563	87.2	.0333013	.683753
94	-.7982	1.3822	28.649	.680116	87.1	.0338642	.679272
95	-.7784	1.3479	29.6487	.675497	87.1	.0343915	.674621
96	-.7586	1.3136	30.6484	.670708	87.	.0348837	.6698
97	-.7388	1.2793	31.6481	.665752	87.	.0353413	.664814
98	-.719	1.245	32.6478	.660632	86.9	.0357647	.659663
99	-.6992	1.2107	33.6476	.65535	86.8	.0361543	.654352
100	-.6794	1.1764	34.6473	.649909	86.8	.0365104	.648882
101	-.6596	1.1421	35.647	.644312	86.7	.0368336	.643259
102	-.6398	1.1078	36.6467	.638564	86.7	.037124	.637484
103	-.62	1.0735	37.6464	.632666	86.6	.0373821	.631561
104	-.6002	1.0392	38.6461	.626624	86.6	.0376082	.625494
105	-.5804	1.0049	39.6459	.62044	86.5	.0378027	.619287
106	-.5606	.9706	40.6456	.614118	86.5	.037966	.612944
107	-.5408	.9363	41.6453	.607664	86.4	.0380984	.606469
108	-.521	.902	42.645	.601081	86.4	.0382003	.599866
109	-.5012	.8677	43.6447	.594375	86.3	.0382722	.593141
110	-.4814	.8334	44.6445	.58755	86.3	.0383145	.5863
111	-.4616	.7991	45.6442	.580615	86.2	.0383275	.579349
112	-.4418	.7648	46.6439	.573577	86.2	.0383118	.572296
113	-.422	.7305	47.6436	.566445	86.1	.0382681	.565151
114	-.4022	.6962	48.6433	.559232	86.1	.0381971	.557926
115	-.3824	.6619	49.643	.551958	86.	.0380996	.550642
116	-.3626	.6276	50.6428	.544665	86.	.0379771	.54334
117	-.3428	.5933	51.6425	.537479	86.	.0378338	.536146
END	-.323	.559	52.6422	.531461	85.9	.0376987	.530123
2J4	-1.313	-2.274	2.6563	.71969	89.	.0129596	.719573
119	-1.2932	-2.2397	3.65602	.720498	88.8	.0149154	.720344
120	-1.2734	-2.2054	4.65574	.721086	88.7	.0168562	.720889
121	-1.2536	-2.1711	5.65545	.721413	88.5	.0186777	.721171
122	-1.2338	-2.1368	6.65517	.721474	88.4	.0203898	.721186
123	-1.214	-2.1025	7.65489	.721288	88.3	.022003	.720952
124	-1.1942	-2.0682	8.65461	.720869	88.1	.0235268	.720485

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125	-1.1744	-2.0339	9.65433	.720211	88.	.0249694	.719778
126	-1.1546	-1.9996	10.654	.71932	87.9	.0263379	.718838
127	-1.1348	-1.9653	11.6538	.71821	87.8	.0276381	.717678
128	-1.115	-1.931	12.6535	.716881	87.7	.028875	.716299
129	-1.0952	-1.8967	13.6532	.71534	87.6	.0300528	.714708
130	-1.0754	-1.8624	14.6529	.713587	87.5	.0311749	.712905
131	-1.0556	-1.8281	15.6526	.711628	87.4	.0322442	.710897
132	-1.0358	-1.7938	16.6524	.709457	87.3	.0332633	.708677
133	-1.016	-1.7595	17.6521	.707088	87.2	.0342343	.706259
134	-.9962	-1.7252	18.6518	.704519	87.1	.0351589	.703641
135	-.9764	-1.6909	19.6515	.701752	87.1	.0360388	.700826
136	-.9566	-1.6566	20.6512	.698791	87.	.0368754	.697817
137	-.9368	-1.6223	21.6509	.695637	86.9	.0376698	.694617
138	-.917	-1.588	22.6507	.692293	86.8	.0384231	.691226
139	-.8972	-1.5537	23.6504	.688762	86.7	.0391362	.68765
140	-.8774	-1.5194	24.6501	.685046	86.7	.0398101	.683888
141	-.8576	-1.4851	25.6498	.681148	86.6	.0404455	.679946
142	-.8378	-1.4508	26.6495	.677068	86.5	.041043	.675823
143	-.818	-1.4165	27.6493	.672812	86.5	.0416033	.671524
144	-.7982	-1.3822	28.649	.668379	86.4	.042127	.66705
145	-.7784	-1.3479	29.6487	.663774	86.3	.0426145	.662404
146	-.7586	-1.3136	30.6484	.658998	86.3	.0430666	.65759
147	-.7388	-1.2793	31.6481	.654055	86.2	.0434835	.652608
148	-.719	-1.245	32.6478	.648948	86.1	.0438658	.647463
149	-.6992	-1.2107	33.6476	.643679	86.1	.044214	.642159
150	-.6794	-1.1764	34.6473	.638251	86.	.0445283	.636696
151	-.6596	-1.1421	35.647	.632668	85.9	.0448093	.63108
152	-.6398	-1.1078	36.6467	.626933	85.9	.0450574	.625312
153	-.62	-1.0735	37.6464	.62105	85.8	.0452729	.619397
154	-.6002	-1.0392	38.6461	.615021	85.8	.0454562	.613339
155	-.5804	-1.0049	39.6459	.608852	85.7	.0456078	.607142
156	-.5606	-.9706	40.6456	.602546	85.6	.045728	.600808
157	-.5408	-.9363	41.6453	.596107	85.6	.0458174	.594344
158	-.521	-.902	42.645	.589542	85.5	.0458762	.587754
159	-.5012	-.8677	43.6447	.582854	85.5	.045905	.581043
160	-.4814	-.8334	44.6445	.576049	85.4	.045904	.574218
161	-.4616	-.7991	45.6442	.569134	85.4	.0458741	.567282
162	-.4418	-.7648	46.6439	.562117	85.3	.0458154	.560247
163	-.422	-.7305	47.6436	.555006	85.3	.0457289	.553119
164	-.4022	-.6962	48.6433	.547815	85.2	.045615	.545913
165	-.3824	-.6619	49.643	.540565	85.2	.045475	.538649
166	-.3626	-.6276	50.6428	.533295	85.1	.0453101	.531367
167	-.3428	-.5933	51.6425	.526134	85.1	.0451249	.524195
END	-.323	-.559	52.6422	.520139	85.	.0449503	.518193
2J8	.645	0	52.6422	.519979	85.3	.0421658	.518266
169	.645	0	53.6841	.51293	85.3	.0419493	.511212
170	.645	0	54.7261	.504611	85.3	.041671	.502887
171	.645	0	55.768	.496018	85.2	.0413593	.494291
172	.645	0	56.8099	.487228	85.2	.0410163	.485498
173	.645	0	57.8519	.478257	85.1	.0406423	.476526
174	.645	0	58.8938	.469112	85.1	.0402375	.467383
175	.645	0	59.9357	.459798	85.	.0398021	.458072
176	.645	0	60.9776	.45032	85.	.039336	.448599
177	.645	0	62.0196	.44068	84.9	.0388394	.438965
178	.645	0	63.0615	.430884	84.9	.0383124	.429177
179	.645	0	64.1034	.420947	84.9	.037756	.419251
180	.645	0	65.1454	.41095	84.8	.0371747	.409265
END	.645	0	66.1873	.402052	84.8	.0366389	.400379
2J9	-.323	.559	52.6422	.524254	85.7	.0395147	.522763
182	-.323	.559	53.6841	.517188	85.6	.0393305	.51569
183	-.323	.559	54.7261	.508851	85.6	.0390862	.507347
184	-.323	.559	55.768	.500239	85.6	.0388089	.498732
185	-.323	.559	56.8099	.491429	85.5	.0385007	.489918

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186	-.323	.559	57.8519	.482438	85.5	.0381619	.480926
187	-.323	.559	58.8938	.473273	85.4	.0377927	.471762
188	-.323	.559	59.9357	.46394	85.4	.0373931	.46243
189	-.323	.559	60.9776	.454441	85.3	.0369633	.452935
190	-.323	.559	62.0196	.44478	85.3	.0365033	.44328
191	-.323	.559	63.0615	.434963	85.3	.0360132	.43347
192	-.323	.559	64.1034	.425006	85.2	.035494	.423522
193	-.323	.559	65.1454	.414988	85.2	.0349501	.413513
END	-.323	.559	66.1873	.406069	85.1	.0344509	.404605
2J10	-.323	-.559	52.6422	.517995	85.2	.0433655	.516176
195	-.323	-.559	53.6841	.510954	85.2	.0431344	.50913
196	-.323	-.559	54.7261	.502643	85.1	.0428407	.500813
197	-.323	-.559	55.768	.494059	85.1	.0425134	.492226
198	-.323	-.559	56.8099	.485276	85.	.0421545	.483442
199	-.323	-.559	57.8519	.476313	85.	.0417644	.474478
200	-.323	-.559	58.8938	.467177	84.9	.0413435	.465344
201	-.323	-.559	59.9357	.457871	84.9	.0408916	.456042
202	-.323	-.559	60.9776	.448401	84.8	.040409	.446577
203	-.323	-.559	62.0196	.438771	84.8	.0398958	.436953
204	-.323	-.559	63.0615	.428983	84.7	.0393521	.427175
205	-.323	-.559	64.1034	.419057	84.7	.0387787	.417259
206	-.323	-.559	65.1454	.409068	84.6	.0381804	.407282
END	-.323	-.559	66.1873	.400179	84.6	.037628	.398406
2J11	.645	0	66.1873	.397192	84.8	.0362691	.395533
208	.631462	0	67.2292	.3888	84.7	.0357436	.387153
209	.617923	0	68.2712	.37884	84.7	.0351023	.37721
210	.604385	0	69.3131	.368607	84.6	.034424	.366996
211	.590846	0	70.355	.35822	84.6	.0337162	.35663
212	.577308	0	71.397	.347714	84.6	.0329809	.346147
213	.563769	0	72.4389	.337103	84.5	.032219	.33556
214	.550231	0	73.4808	.326394	84.5	.0314313	.324877
215	.536692	0	74.5227	.315593	84.4	.0306182	.314105
216	.523154	0	75.5647	.304708	84.4	.0297801	.303249
217	.509615	0	76.6066	.293744	84.4	.0289178	.292317
218	.496077	0	77.6485	.282714	84.3	.0280322	.281321
219	.482538	0	78.6905	.271655	84.3	.0271265	.270297
END	.469	0	79.7324	.261517	84.2	.0262805	.260193
2J12	-.323	.559	66.1873	.400443	85.1	.0344544	.398958
221	-.316231	.547231	67.2292	.392031	85.	.0339621	.390557
222	-.309462	.535462	68.2712	.382053	85.	.0333552	.380594
223	-.302692	.523692	69.3131	.3718	85.	.032711	.370359
224	-.295923	.511923	70.355	.361395	84.9	.0320368	.359973
225	-.289154	.500154	71.397	.350872	84.9	.0313347	.34947
226	-.282385	.488385	72.4389	.340242	84.8	.0306057	.338863
227	-.275615	.476615	73.4808	.329516	84.8	.0298504	.328161
228	-.268846	.464846	74.5227	.318699	84.8	.0290692	.317371
229	-.262077	.453077	75.5647	.307797	84.7	.0282628	.306497
230	-.255308	.441308	76.6066	.296818	84.7	.0274316	.295547
231	-.248538	.429538	77.6485	.285772	84.7	.0265767	.284534
232	-.241769	.417769	78.6905	.274697	84.6	.0257012	.273492
END	-.235	.406	79.7324	.264545	84.6	.0248844	.263372
2J13	-.323	-.559	66.1873	.395714	84.6	.0370867	.393972
234	-.316231	-.547231	67.2292	.387329	84.6	.0365461	.385601
235	-.309462	-.535462	68.2712	.377379	84.5	.0358893	.375668
236	-.302692	-.523692	69.3131	.367154	84.5	.0351955	.365463
237	-.295923	-.511923	70.355	.356777	84.5	.0344725	.355108
238	-.289154	-.500154	71.397	.346281	84.4	.0337221	.344635
239	-.282385	-.488385	72.4389	.335679	84.4	.0329454	.334058
240	-.275615	-.476615	73.4808	.324979	84.3	.032143	.323386
241	-.268846	-.464846	74.5227	.314189	84.3	.0313155	.312625
242	-.262077	-.453077	75.5647	.303314	84.2	.0304633	.301781
243	-.255308	-.441308	76.6066	.292361	84.2	.029587	.29086
244	-.248538	-.429538	77.6485	.281341	84.1	.0286877	.279875

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245	-.241769	-.417769	78.6905	.270293	84.1	.0277685	.268863
END	-.235	-.406	79.7324	.260166	84.1	.0269095	.258771
2J14	.469	0	79.7324	.257992	84.2	.0259247	.256686
247	.469	0	80.7483	.248742	84.2	.0251368	.247468
248	.469	0	81.7642	.238137	84.2	.0242193	.236902
249	.469	0	82.7801	.227279	84.1	.0232639	.226085
250	.469	0	83.796	.216244	84.1	.0222772	.215093
251	.469	0	84.812	.205056	84.	.0212607	.203951
252	.469	0	85.8279	.193722	84.	.0202148	.192665
253	.469	0	86.8438	.182244	84.	.0191396	.181236
254	.469	0	87.8597	.170622	83.9	.0180346	.169666
255	.469	0	88.8756	.158849	83.9	.0168993	.157948
256	.469	0	89.8915	.146922	83.9	.0157326	.146077
257	.469	0	90.9074	.134828	83.8	.0145333	.134042
258	.469	0	91.9233	.122555	83.8	.0132997	.121831
259	.469	0	92.9392	.110084	83.7	.0120294	.109425
260	.469	0	93.9551	.0973869	83.7	.0107193	.0967952
261	.469	0	94.971	.0844256	83.6	9.36E-03	.0839046
262	.469	0	95.987	.0711409	83.6	7.96E-03	.0706943
263	.469	0	97.0029	.0574362	83.5	6.49E-03	.0570683
264	.469	0	98.0188	.0431401	83.4	4.94E-03	.0428565
265	.469	0	99.0347	.0278946	83.3	3.26E-03	.0277029
END	.469	0	100.051	.0114714	82.8	1.44E-03	.0113809
2J15	-.235	.406	79.7324	.260444	84.5	.0248033	.25926
267	-.235	.406	80.7483	.251181	84.5	.0240409	.250028
268	-.235	.406	81.7642	.240563	84.5	.0231496	.239447
269	-.235	.406	82.7801	.229691	84.4	.0222206	.228614
270	-.235	.406	83.796	.218645	84.4	.0212602	.217609
271	-.235	.406	84.812	.207444	84.4	.02027	.206451
272	-.235	.406	85.8279	.196097	84.4	.0192506	.19515
273	-.235	.406	86.8438	.184606	84.3	.0182016	.183706
274	-.235	.406	87.8597	.172969	84.3	.017123	.17212
275	-.235	.406	88.8756	.161183	84.3	.0160138	.160386
276	-.235	.406	89.8915	.149242	84.3	.0148733	.148499
277	-.235	.406	90.9074	.137135	84.3	.0137001	.136449
278	-.235	.406	91.9233	.124848	84.3	.0124926	.124222
279	-.235	.406	92.9392	.112363	84.3	.0112484	.111799
280	-.235	.406	93.9551	.0996528	84.3	9.96E-03	.0991534
281	-.235	.406	94.971	.0866778	84.3	8.64E-03	.0862466
282	-.235	.406	95.987	.0733797	84.3	7.26E-03	.0730201
283	-.235	.406	97.0029	.0596617	84.4	5.81E-03	.0593779
284	-.235	.406	98.0188	.0453529	84.6	4.29E-03	.0451498
285	-.235	.406	99.0347	.0300959	85.	2.64E-03	.0299801
END	-.235	.406	100.051	.0136677	86.5	8.38E-04	.013642
2J16	-.235	-.406	79.7324	.25678	84.1	.0264229	.255417
287	-.235	-.406	80.7483	.247539	84.1	.0256237	.246209
288	-.235	-.406	81.7642	.236944	84.	.0246945	.235654
289	-.235	-.406	82.7801	.226096	84.	.0237276	.224847
290	-.235	-.406	83.796	.215072	83.9	.0227292	.213868
291	-.235	-.406	84.812	.203895	83.9	.0217011	.202737
292	-.235	-.406	85.8279	.192572	83.8	.0206437	.191462
293	-.235	-.406	86.8438	.181105	83.8	.0195569	.180046
294	-.235	-.406	87.8597	.169493	83.8	.0184404	.168487
295	-.235	-.406	88.8756	.157731	83.7	.0172934	.15678
296	-.235	-.406	89.8915	.145813	83.7	.0161152	.14492
297	-.235	-.406	90.9074	.133731	83.6	.0149044	.132898
298	-.235	-.406	91.9233	.121469	83.5	.0136593	.120698
299	-.235	-.406	92.9392	.109008	83.5	.0123776	.108303
300	-.235	-.406	93.9551	.0963231	83.4	.0110561	.0956864
301	-.235	-.406	94.971	.0833729	83.3	9.69E-03	.0828079
302	-.235	-.406	95.987	.0700995	83.2	8.27E-03	.0696096
303	-.235	-.406	97.0029	.0564066	83.1	6.79E-03	.0559961
304	-.235	-.406	98.0188	.0421229	82.9	5.23E-03	.0417969

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305	-.235	-.406	99.0347	.0268908	82.4	3.55E-03	.0266561
END	-.235	-.406	100.051	.0104878	80.6	1.71E-03	.0103479
2J8	.645	0	52.6422	1.21E-03	47.9	8.09E-04	8.97E-04
END	-.323	.559	52.6422	3.45E-03	281.7	7.E-04	-3.38E-03
2J9	-.323	.559	52.6422	4.13E-03	105.7	-1.12E-03	3.98E-03
END	-.323	-.559	52.6422	1.27E-03	193.4	-1.23E-03	-2.94E-04
2J10	-.323	-.559	52.6422	1.76E-03	78.4	3.53E-04	1.72E-03
END	.645	0	52.6422	2.55E-03	274.9	2.19E-04	-2.54E-03
2J11	.645	0	66.1873	2.13E-03	83.1	2.55E-04	2.11E-03
END	-.323	.559	66.1873	2.87E-03	269.3	-3.65E-05	-2.87E-03
2J12	-.323	.559	66.1873	2.78E-03	90.8	-4.E-05	2.78E-03
END	-.323	-.559	66.1873	2.23E-03	261.2	-3.4E-04	-2.2E-03
2J13	-.323	-.559	66.1873	2.24E-03	84.8	2.02E-04	2.23E-03
END	.645	0	66.1873	2.74E-03	267.6	-1.15E-04	-2.73E-03
2J14	.469	0	79.7324	1.57E-03	81.3	2.37E-04	1.55E-03
END	-.235	.406	79.7324	2.12E-03	268.2	-6.48E-05	-2.12E-03
2J15	-.235	.406	79.7324	2.E-03	89.5	1.63E-05	2.E-03
END	-.235	-.406	79.7324	1.68E-03	260.1	-2.9E-04	-1.66E-03
2J16	-.235	-.406	79.7324	1.71E-03	83.4	1.97E-04	1.69E-03
END	.469	0	79.7324	1.96E-03	266.5	-1.19E-04	-1.96E-03
2J17	.469	0	100.051	5.25E-03	80.5	8.64E-04	5.18E-03
END	-.235	.406	100.051	6.63E-03	266.	-4.57E-04	-6.62E-03
2J18	-.235	.406	100.051	7.03E-03	86.9	3.8E-04	7.02E-03
END	-.235	-.406	100.051	4.85E-03	258.8	-9.44E-04	-4.76E-03
2J19	-.235	-.406	100.051	5.64E-03	82.2	7.63E-04	5.59E-03
END	.469	0	100.051	6.23E-03	264.7	-5.74E-04	-6.2E-03
GND	-24.3	114.3	0	3.11475	9.5	3.07222	.512969
331	-24.3	114.3	1.3413	3.12752	9.2	3.08739	.499387
END	-24.3	114.3	2.6826	3.13354	9.	3.09462	.492326
GND	-21.675	114.3	0	.0220906	308.5	.0137419	-.0172961
333	-21.675	114.3	1.3413	.0174897	308.2	.0108146	-.0137452
END	-21.675	114.3	2.6826	.0340178	307.7	.0208243	-.0268991
GND	-25.613	116.574	0	.0221166	308.5	.0137677	-.0173088
335	-25.613	116.574	1.3413	.0175134	308.2	.01084	-.0137555
END	-25.613	116.574	2.6826	.0340774	307.8	.0208951	-.0269196
GND	-25.613	112.026	0	.0220161	308.2	.0136071	-.0173077
337	-25.613	112.026	1.3413	.0174261	307.9	.0106982	-.0137556
END	-25.613	112.026	2.6826	.0338817	307.4	.0205698	-.0269231
2J33	-21.675	114.3	2.6826	1.05154	188.2	-1.0408	-.149865
339	-22.9875	114.3	2.6826	1.0472	188.6	-1.03542	-.156667
END	-24.3	114.3	2.6826	1.04299	189.	-1.03019	-.16287
2J34	-25.613	116.574	2.6826	1.06723	188.5	-1.05548	-.157928
342	-24.9565	115.437	2.6826	1.0629	188.9	-1.05006	-.164734
END	-24.3	114.3	2.6826	1.05873	189.3	-1.04484	-.170945
2J35	-25.613	112.026	2.6826	1.04034	188.	-1.03012	-.145492
345	-24.9565	113.163	2.6826	1.03609	188.5	-1.02483	-.152309
END	-24.3	114.3	2.6826	1.03183	188.8	-1.01958	-.158511
2J33	-21.675	114.3	2.6826	1.06873	6.6	1.06163	.122966
348	-21.7146	114.3	3.69222	1.07291	6.2	1.06662	.116032
349	-21.7542	114.3	4.70183	1.0768	5.8	1.07125	.10911
350	-21.7938	114.3	5.71145	1.08014	5.4	1.07526	.102565
351	-21.8334	114.3	6.72106	1.08297	5.1	1.07867	.0963645
352	-21.873	114.3	7.73068	1.0853	4.8	1.08153	.0904701
353	-21.9126	114.3	8.7403	1.08717	4.5	1.08385	.0848507
354	-21.9522	114.3	9.74991	1.08858	4.2	1.08568	.0794774
355	-21.9918	114.3	10.7595	1.08957	3.9	1.08703	.0743254
356	-22.0314	114.3	11.7691	1.09013	3.6	1.08792	.0693752
357	-22.071	114.3	12.7788	1.09028	3.4	1.08836	.0646089
358	-22.1106	114.3	13.7884	1.09003	3.2	1.08838	.0600127
359	-22.1502	114.3	14.798	1.0894	2.9	1.08798	.0555746
360	-22.1898	114.3	15.8076	1.08839	2.7	1.08718	.0512846
361	-22.2294	114.3	16.8172	1.087	2.5	1.08597	.0471344
362	-22.269	114.3	17.8268	1.08523	2.3	1.08438	.0431168

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363	-22.3086	114.3	18.8365	1.08311	2.1	1.0824	.0392258
364	-22.3482	114.3	19.8461	1.08064	1.9	1.08006	.0354559
365	-22.3878	114.3	20.8557	1.07782	1.7	1.07735	.0318029
366	-22.4274	114.3	21.8653	1.07464	1.5	1.07427	.0282628
367	-22.467	114.3	22.8749	1.07112	1.3	1.07084	.024832
368	-22.5066	114.3	23.8845	1.06727	1.2	1.06705	.0215078
369	-22.5462	114.3	24.8941	1.06308	1.	1.06292	.0182873
370	-22.5858	114.3	25.9038	1.05856	.8	1.05845	.0151682
371	-22.6254	114.3	26.9134	1.05372	.7	1.05365	.0121485
372	-22.665	114.3	27.923	1.04855	.5	1.04851	9.23E-03
373	-22.7046	114.3	28.9326	1.04307	.4	1.04305	6.4E-03
374	-22.7442	114.3	29.9422	1.03728	.2	1.03727	3.67E-03
375	-22.7838	114.3	30.9518	1.03117	.1	1.03117	1.03E-03
376	-22.8234	114.3	31.9615	1.02477	359.9	1.02477	-1.52E-03
377	-22.863	114.3	32.9711	1.01806	359.8	1.01805	-3.98E-03
378	-22.9026	114.3	33.9807	1.01106	359.6	1.01104	-6.35E-03
379	-22.9422	114.3	34.9903	1.00377	359.5	1.00373	-8.63E-03
380	-22.9818	114.3	35.9999	.996196	359.4	.996137	-.0108194
381	-23.0214	114.3	37.0095	.988337	359.3	.988253	-.0129259
382	-23.061	114.3	38.0192	.980214	359.1	.9801	-.0149468
383	-23.1006	114.3	39.0288	.971818	359.	.971671	-.0168831
384	-23.1402	114.3	40.0384	.963163	358.9	.962981	-.0187353
385	-23.1798	114.3	41.048	.954249	358.8	.954029	-.0205043
386	-23.2194	114.3	42.0576	.94509	358.7	.944829	-.0221908
387	-23.259	114.3	43.0672	.935685	358.5	.935382	-.0237954
388	-23.2986	114.3	44.0769	.926048	358.4	.925702	-.0253188
389	-23.3382	114.3	45.0865	.916194	358.3	.915803	-.0267617
390	-23.3778	114.3	46.0961	.90612	358.2	.905684	-.0281245
391	-23.4174	114.3	47.1057	.89585	358.1	.895367	-.0294077
392	-23.457	114.3	48.1153	.885389	358.	.88486	-.0306118
393	-23.4966	114.3	49.1249	.874758	357.9	.874182	-.0317368
394	-23.5362	114.3	50.1345	.863993	357.8	.863371	-.0327821
395	-23.5758	114.3	51.1442	.853156	357.7	.852488	-.0337453
396	-23.6154	114.3	52.1538	.842423	357.6	.841712	-.0346147
END	-23.655	114.3	53.1634	.833411	357.6	.832664	-.0352832
2J34	-25.613	116.574	2.6826	1.08432	6.9	1.07638	.131009
398	-25.5932	116.54	3.69222	1.08849	6.5	1.08139	.124068
399	-25.5734	116.505	4.70183	1.09236	6.2	1.08606	.117139
400	-25.5536	116.471	5.71145	1.09569	5.8	1.0901	.110586
401	-25.5338	116.437	6.72106	1.09851	5.5	1.09354	.104375
402	-25.514	116.402	7.73068	1.10085	5.1	1.09643	.098471
403	-25.4942	116.368	8.7403	1.10271	4.8	1.09879	.0928403
404	-25.4744	116.334	9.74991	1.10412	4.5	1.10065	.0874543
405	-25.4546	116.3	10.7595	1.1051	4.3	1.10203	.0822889
406	-25.4348	116.265	11.7691	1.10566	4.	1.10295	.0773236
407	-25.415	116.231	12.7788	1.10582	3.8	1.10343	.0725414
408	-25.3952	116.197	13.7884	1.10557	3.5	1.10348	.0679282
409	-25.3754	116.162	14.798	1.10494	3.3	1.10312	.0634723
410	-25.3556	116.128	15.8076	1.10392	3.1	1.10234	.0591636
411	-25.3358	116.094	16.8172	1.10254	2.9	1.10116	.0549938
412	-25.316	116.06	17.8268	1.10079	2.7	1.09961	.0509556
413	-25.2962	116.025	18.8365	1.09867	2.5	1.09766	.0470431
414	-25.2764	115.991	19.8461	1.0962	2.3	1.09534	.043251
415	-25.2566	115.957	20.8557	1.09338	2.1	1.09266	.0395749
416	-25.2368	115.922	21.8653	1.09021	1.9	1.08962	.0360108
417	-25.217	115.888	22.8749	1.0867	1.7	1.08621	.0325555
418	-25.1972	115.854	23.8845	1.08285	1.5	1.08245	.0292058
419	-25.1774	115.819	24.8941	1.07866	1.4	1.07835	.0259591
420	-25.1576	115.785	25.9038	1.07415	1.2	1.07391	.0228132
421	-25.1378	115.751	26.9134	1.06931	1.1	1.06913	.0197659
422	-25.118	115.716	27.923	1.06415	.9	1.06402	.0168155
423	-25.0982	115.682	28.9326	1.05867	.8	1.05858	.0139601
424	-25.0784	115.648	29.9422	1.05289	.6	1.05283	.0111984

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425	-25.0586	115.614	30.9518	1.04678	.5	1.04674	8.53E-03
426	-25.0388	115.579	31.9615	1.04038	.3	1.04036	5.95E-03
427	-25.019	115.545	32.9711	1.03367	.2	1.03366	3.46E-03
428	-24.9992	115.511	33.9807	1.02667	.1	1.02667	1.06E-03
429	-24.9794	115.476	34.9903	1.01937	359.9	1.01937	-1.25E-03
430	-24.9596	115.442	35.9999	1.0118	359.8	1.01179	-3.48E-03
431	-24.9398	115.408	37.0095	1.00394	359.7	1.00392	-5.61E-03
432	-24.92	115.373	38.0192	.995806	359.6	.995776	-7.67E-03
433	-24.9002	115.339	39.0288	.987409	359.4	.987362	-9.64E-03
434	-24.8804	115.305	40.0384	.978739	359.3	.978671	-.0115245
435	-24.8606	115.271	41.048	.969818	359.2	.969727	-.0133276
436	-24.8408	115.236	42.0576	.960645	359.1	.960527	-.0150484
437	-24.821	115.202	43.0672	.951234	359.	.951087	-.0166876
438	-24.8012	115.168	44.0769	.941584	358.9	.941407	-.0182458
439	-24.7814	115.133	45.0865	.931709	358.8	.9315	-.0197237
440	-24.7616	115.099	46.0961	.921624	358.7	.921382	-.0211216
441	-24.7418	115.065	47.1057	.911327	358.6	.911051	-.0224403
442	-24.722	115.031	48.1153	.900847	358.5	.900536	-.0236798
443	-24.7022	114.996	49.1249	.890206	358.4	.889859	-.0248403
444	-24.6824	114.962	50.1345	.879415	358.3	.879033	-.0259213
445	-24.6626	114.928	51.1442	.868554	358.2	.868137	-.0269201
446	-24.6428	114.893	52.1538	.857798	358.1	.857346	-.0278253
END	-24.623	114.859	53.1634	.848765	358.1	.848285	-.0285273
2J35	-25.613	112.026	2.6826	1.05736	6.4	1.05069	.118569
448	-25.5932	112.06	3.69222	1.06148	6.	1.05559	.111627
449	-25.5734	112.095	4.70183	1.06529	5.6	1.06013	.104696
450	-25.5536	112.129	5.71145	1.06856	5.3	1.06405	.0981443
451	-25.5338	112.163	6.72106	1.07132	4.9	1.06736	.0919366
452	-25.514	112.198	7.73068	1.07359	4.6	1.07014	.0860358
453	-25.4942	112.232	8.7403	1.07538	4.3	1.07237	.0804115
454	-25.4744	112.266	9.74991	1.07673	4.	1.07412	.0750332
455	-25.4546	112.3	10.7595	1.07764	3.7	1.07538	.0698772
456	-25.4348	112.335	11.7691	1.07814	3.5	1.07618	.0649233
457	-25.415	112.369	12.7788	1.07823	3.2	1.07655	.0601544
458	-25.3952	112.403	13.7884	1.07792	3.	1.07649	.0555562
459	-25.3754	112.438	14.798	1.07722	2.7	1.076	.0511168
460	-25.3556	112.472	15.8076	1.07614	2.5	1.07512	.0468262
461	-25.3358	112.506	16.8172	1.07469	2.3	1.07384	.042676
462	-25.316	112.54	17.8268	1.07288	2.1	1.07218	.038659
463	-25.2962	112.575	18.8365	1.0707	1.9	1.07014	.0347691
464	-25.2764	112.609	19.8461	1.06817	1.7	1.06772	.0310011
465	-25.2566	112.643	20.8557	1.06528	1.5	1.06493	.0273505
466	-25.2368	112.678	21.8653	1.06205	1.3	1.06178	.0238135
467	-25.217	112.712	22.8749	1.05849	1.1	1.05829	.0203863
468	-25.1972	112.746	23.8845	1.05458	.9	1.05444	.0170662
469	-25.1774	112.781	24.8941	1.05034	.8	1.05025	.0138505
470	-25.1576	112.815	25.9038	1.04577	.6	1.04572	.0107367
471	-25.1378	112.849	26.9134	1.04089	.4	1.04086	7.72E-03
472	-25.118	112.883	27.923	1.03568	.3	1.03567	4.81E-03
473	-25.0982	112.918	28.9326	1.03016	.1	1.03016	1.99E-03
474	-25.0784	112.952	29.9422	1.02432	360.	1.02432	-7.38E-04
475	-25.0586	112.986	30.9518	1.01818	359.8	1.01818	-3.37E-03
476	-25.0388	113.021	31.9615	1.01174	359.7	1.01172	-5.91E-03
477	-25.019	113.055	32.9711	1.005	359.5	1.00497	-8.36E-03
478	-24.9992	113.089	33.9807	.997969	359.4	.997912	-.0107168
479	-24.9794	113.124	34.9903	.99065	359.2	.990565	-.0129872
480	-24.9596	113.158	35.9999	.983052	359.1	.982935	-.0151698
481	-24.9398	113.192	37.0095	.975176	359.	.975023	-.0172656
482	-24.92	113.227	38.0192	.96702	358.9	.966827	-.0192755
483	-24.9002	113.261	39.0288	.958605	358.7	.95837	-.0212002
484	-24.8804	113.295	40.0384	.949931	358.6	.949652	-.0230406
485	-24.8606	113.329	41.048	.941005	358.5	.940679	-.0247973
486	-24.8408	113.364	42.0576	.931827	358.4	.931451	-.026471

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487	-24.821	113.398	43.0672	.92241	358.3	.921983	-.0280626
488	-24.8012	113.432	44.0769	.912767	358.1	.912288	-.0295726
489	-24.7814	113.467	45.0865	.9029	358.	.902368	-.0310017
490	-24.7616	113.501	46.0961	.892821	357.9	.892235	-.0323504
491	-24.7418	113.535	47.1057	.882544	357.8	.881904	-.0336191
492	-24.722	113.569	48.1153	.872084	357.7	.871389	-.0348084
493	-24.7022	113.604	49.1249	.861461	357.6	.860712	-.0359183
494	-24.6824	113.638	50.1345	.850703	357.5	.8499	-.0369482
495	-24.6626	113.672	51.1442	.839866	357.4	.839011	-.0378956
496	-24.6428	113.707	52.1538	.829147	357.3	.828241	-.0387492
END	-24.623	113.741	53.1634	.820147	357.2	.8192	-.0394023
2J39	-23.655	114.3	53.1634	.826951	357.5	.826191	-.0354537
498	-23.655	114.3	54.2156	.816321	357.5	.815521	-.0361481
499	-23.655	114.3	55.2679	.803753	357.4	.802906	-.0368865
500	-23.655	114.3	56.3201	.790724	357.3	.789831	-.0375649
501	-23.655	114.3	57.3724	.777356	357.2	.776418	-.0381757
502	-23.655	114.3	58.4246	.763668	357.1	.762686	-.038717
503	-23.655	114.3	59.4769	.749675	357.	.74865	-.0391882
504	-23.655	114.3	60.5291	.735383	356.9	.734317	-.0395889
505	-23.655	114.3	61.5814	.7208	356.8	.719693	-.0399188
506	-23.655	114.3	62.6336	.705921	356.7	.704776	-.0401778
507	-23.655	114.3	63.6859	.690765	356.6	.689585	-.0403656
508	-23.655	114.3	64.7381	.675353	356.6	.674139	-.0404821
509	-23.655	114.3	65.7904	.659803	356.5	.658557	-.0405274
END	-23.655	114.3	66.8426	.645913	356.4	.644641	-.0405073
2J40	-24.623	114.859	53.1634	.832892	357.8	.832272	-.0321169
511	-24.623	114.859	54.2156	.822237	357.7	.821581	-.0328513
512	-24.623	114.859	55.2679	.809636	357.6	.808937	-.0336317
513	-24.623	114.859	56.3201	.796583	357.5	.795842	-.0343527
514	-24.623	114.859	57.3724	.78319	357.4	.782407	-.0350067
515	-24.623	114.859	58.4246	.769477	357.3	.768654	-.0355917
516	-24.623	114.859	59.4769	.75546	357.3	.754596	-.0361071
517	-24.623	114.859	60.5291	.741137	357.2	.740235	-.0365525
518	-24.623	114.859	61.5814	.726523	357.1	.725584	-.0369275
519	-24.623	114.859	62.6336	.711624	357.	.71065	-.0372319
520	-24.623	114.859	63.6859	.696438	356.9	.695429	-.0374657
521	-24.623	114.859	64.7381	.680998	356.8	.679958	-.0376286
522	-24.623	114.859	65.7904	.665418	356.8	.664348	-.0377206
END	-24.623	114.859	66.8426	.651501	356.7	.650407	-.037746
2J41	-24.623	113.741	53.1634	.823437	357.4	.822606	-.0369826
524	-24.623	113.741	54.2156	.812816	357.3	.811943	-.0376587
525	-24.623	113.741	55.2679	.800256	357.3	.799335	-.0383777
526	-24.623	113.741	56.3201	.787243	357.2	.786275	-.0390365
527	-24.623	113.741	57.3724	.773883	357.1	.772868	-.0396275
528	-24.623	113.741	58.4246	.760211	357.	.75915	-.0401488
529	-24.623	113.741	59.4769	.746226	356.9	.745121	-.0405998
530	-24.623	113.741	60.5291	.73195	356.8	.730802	-.0409799
531	-24.623	113.741	61.5814	.717375	356.7	.716186	-.041289
532	-24.623	113.741	62.6336	.70251	356.6	.701281	-.041527
533	-24.623	113.741	63.6859	.687366	356.5	.6861	-.0416936
534	-24.623	113.741	64.7381	.671966	356.4	.670666	-.0417887
535	-24.623	113.741	65.7904	.656427	356.3	.655094	-.0418124
END	-24.623	113.741	66.8426	.642549	356.3	.641189	-.0417712
2J42	-23.655	114.3	66.8426	.638129	356.4	.636849	-.0404026
537	-23.6685	114.3	67.8949	.624976	356.3	.623674	-.0403152
538	-23.6821	114.3	68.9471	.609415	356.2	.608091	-.0401547
539	-23.6956	114.3	69.9994	.593382	356.1	.592037	-.0399243
540	-23.7092	114.3	71.0516	.577075	356.1	.575713	-.0396257
541	-23.7227	114.3	72.1039	.560546	356.	.55917	-.0392599
542	-23.7362	114.3	73.1561	.543817	355.9	.54243	-.0388273
543	-23.7498	114.3	74.2084	.526901	355.8	.525505	-.0383287
544	-23.7633	114.3	75.2606	.509809	355.8	.508409	-.0377647
545	-23.7768	114.3	76.3129	.49255	355.7	.491148	-.0371362

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546	-23.7904	114.3	77.3651	.475135	355.6	.473735	-.0364437
547	-23.8039	114.3	78.4174	.457581	355.5	.456187	-.0356886
548	-23.8175	114.3	79.4696	.439941	355.5	.438557	-.0348735
END	-23.831	114.3	80.5219	.423759	355.4	.422387	-.0340779
2J43	-24.623	114.859	66.8426	.643447	356.6	.642318	-.0380858
550	-24.6162	114.847	67.8949	.630267	356.5	.629118	-.03804
551	-24.6095	114.835	68.9471	.614682	356.5	.613511	-.0379221
552	-24.6027	114.824	69.9994	.598623	356.4	.597433	-.037734
553	-24.5959	114.812	71.0516	.582292	356.3	.581084	-.0374773
554	-24.5892	114.8	72.1039	.565738	356.2	.564517	-.037153
555	-24.5824	114.788	73.1561	.548986	356.2	.547754	-.0367615
556	-24.5756	114.777	74.2084	.532048	356.1	.530808	-.0363035
557	-24.5688	114.765	75.2606	.514933	356.	.513689	-.0357797
558	-24.5621	114.753	76.3129	.497653	355.9	.496407	-.0351907
559	-24.5553	114.741	77.3651	.480216	355.9	.478972	-.0345374
560	-24.5485	114.73	78.4174	.462642	355.8	.461404	-.0338209
561	-24.5418	114.718	79.4696	.444982	355.7	.443753	-.033044
END	-24.535	114.706	80.5219	.428783	355.7	.427566	-.0322852
2J44	-24.623	113.741	66.8426	.635309	356.3	.633955	-.041454
563	-24.6162	113.753	67.8949	.622166	356.2	.62079	-.0413473
564	-24.6095	113.765	68.9471	.606617	356.1	.605219	-.0411671
565	-24.6027	113.776	69.9994	.590595	356.	.589176	-.040917
566	-24.5959	113.788	71.0516	.5743	355.9	.572863	-.0405991
567	-24.5892	113.8	72.1039	.557783	355.9	.556331	-.040214
568	-24.5824	113.812	73.1561	.541066	355.8	.539603	-.0397625
569	-24.5756	113.823	74.2084	.524163	355.7	.522691	-.0392452
570	-24.5688	113.835	75.2606	.507084	355.6	.505608	-.0386628
571	-24.5621	113.847	76.3129	.489837	355.5	.48836	-.0380159
572	-24.5553	113.859	77.3651	.472436	355.5	.470961	-.0373055
573	-24.5485	113.87	78.4174	.454897	355.4	.453427	-.0365326
574	-24.5418	113.882	79.4696	.437271	355.3	.435811	-.0357001
END	-24.535	113.894	80.5219	.421104	355.2	.419657	-.0348878
2J45	-23.831	114.3	80.5219	.41817	355.4	.416808	-.033712
576	-23.831	114.3	81.5479	.403366	355.3	.402019	-.0329341
577	-23.831	114.3	82.5738	.38639	355.2	.385063	-.0319969
578	-23.831	114.3	83.5998	.368985	355.2	.367682	-.0309873
579	-23.831	114.3	84.6258	.351274	355.1	.349998	-.0299108
580	-23.831	114.3	85.6517	.333291	355.	.332047	-.0287689
581	-23.831	114.3	86.6777	.315047	355.	.31384	-.0275618
582	-23.831	114.3	87.7037	.296547	354.9	.29538	-.0262888
583	-23.831	114.3	88.7296	.277788	354.8	.276665	-.0249494
584	-23.831	114.3	89.7556	.258762	354.8	.257689	-.0235424
585	-23.831	114.3	90.7815	.23946	354.7	.238441	-.0220663
586	-23.831	114.3	91.8075	.219864	354.6	.218905	-.020519
587	-23.831	114.3	92.8335	.199954	354.6	.199059	-.0188979
588	-23.831	114.3	93.8594	.179697	354.5	.178872	-.0171994
589	-23.831	114.3	94.8854	.159049	354.4	.1583	-.0154184
590	-23.831	114.3	95.9114	.137946	354.4	.137279	-.0135477
591	-23.831	114.3	96.9373	.116291	354.3	.115713	-.0115768
592	-23.831	114.3	97.9633	.0939254	354.2	.0934449	-9.49E-03
593	-23.831	114.3	98.9893	.0705685	354.1	.0701949	-7.25E-03
594	-23.831	114.3	100.015	.0456292	354.	.0453755	-4.81E-03
END	-23.831	114.3	101.041	.0187023	353.6	.0185842	-2.1E-03
2J46	-24.535	114.706	80.5219	.421767	355.6	.420526	-.0323255
596	-24.535	114.706	81.5479	.406949	355.5	.405722	-.0315799
597	-24.535	114.706	82.5738	.389957	355.5	.388749	-.0306759
598	-24.535	114.706	83.5998	.372537	355.4	.371351	-.0296995
599	-24.535	114.706	84.6258	.35481	355.4	.353651	-.0286564
600	-24.535	114.706	85.6517	.336812	355.3	.335683	-.0275479
601	-24.535	114.706	86.6777	.318553	355.3	.317459	-.0263741
602	-24.535	114.706	87.7037	.300036	355.2	.298982	-.0251346
603	-24.535	114.706	88.7296	.281262	355.1	.280251	-.0238286
604	-24.535	114.706	89.7556	.262221	355.1	.261258	-.022455

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605	-24.535	114.706	90.7815	.242902	355.	.241992	-.0210123
606	-24.535	114.706	91.8075	.223292	355.	.222439	-.0194985
607	-24.535	114.706	92.8335	.203366	354.9	.202576	-.0179107
608	-24.535	114.706	93.8594	.183094	354.9	.182371	-.0162455
609	-24.535	114.706	94.8854	.16243	354.9	.161782	-.0144978
610	-24.535	114.706	95.9114	.141312	354.9	.140743	-.0126604
611	-24.535	114.706	96.9373	.11964	354.9	.119159	-.0107226
612	-24.535	114.706	97.9633	.0972606	354.9	.0968737	-8.67E-03
613	-24.535	114.706	98.9893	.0738889	355.	.0736056	-6.46E-03
614	-24.535	114.706	100.015	.0489365	355.3	.0487685	-4.05E-03
END	-24.535	114.706	101.041	.0220028	356.4	.0219596	-1.38E-03
2J47	-24.535	113.894	80.5219	.416333	355.3	.414915	-.0343347
616	-24.535	113.894	81.5479	.401543	355.2	.400139	-.0335423
617	-24.535	113.894	82.5738	.38458	355.1	.383196	-.0325901
618	-24.535	113.894	83.5998	.367188	355.1	.365829	-.0315654
619	-24.535	113.894	84.6258	.349491	355.	.34816	-.030474
620	-24.535	113.894	85.6517	.331522	354.9	.330223	-.0293171
621	-24.535	113.894	86.6777	.313292	354.9	.31203	-.0280948
622	-24.535	113.894	87.7037	.294806	354.8	.293585	-.0268069
623	-24.535	113.894	88.7296	.276061	354.7	.274885	-.0254525
624	-24.535	113.894	89.7556	.25705	354.6	.255925	-.0240306
625	-24.535	113.894	90.7815	.237763	354.6	.236692	-.0225395
626	-24.535	113.894	91.8075	.218182	354.5	.217172	-.0209775
627	-24.535	113.894	92.8335	.198286	354.4	.197341	-.0193416
628	-24.535	113.894	93.8594	.178045	354.3	.17717	-.0176282
629	-24.535	113.894	94.8854	.157412	354.2	.156614	-.0158325
630	-24.535	113.894	95.9114	.136324	354.1	.135609	-.0139471
631	-24.535	113.894	96.9373	.114684	354.	.114058	-.0119616
632	-24.535	113.894	97.9633	.0923343	353.9	.0918065	-9.86E-03
633	-24.535	113.894	98.9893	.0689939	353.7	.0685731	-7.61E-03
634	-24.535	113.894	100.015	.0440722	353.3	.0437706	-5.15E-03
END	-24.535	113.894	101.041	.0171693	351.9	.0169972	-2.42E-03
2J39	-23.655	114.3	53.1634	9.12E-04	280.2	1.61E-04	-8.98E-04
END	-24.623	114.859	53.1634	6.35E-03	192.3	-6.21E-03	-1.36E-03
2J40	-24.623	114.859	53.1634	.0100585	12.8	9.81E-03	2.23E-03
END	-24.623	113.741	53.1634	3.88E-03	27.3	3.44E-03	1.78E-03
2J41	-24.623	113.741	53.1634	6.4E-04	273.5	3.91E-05	-6.39E-04
END	-23.655	114.3	53.1634	6.4E-03	189.6	-6.31E-03	-1.07E-03
2J42	-23.655	114.3	66.8426	3.75E-03	358.2	3.75E-03	-1.19E-04
END	-24.623	114.859	66.8426	3.96E-03	181.5	-3.96E-03	-1.05E-04
2J43	-24.623	114.859	66.8426	4.14E-03	3.2	4.13E-03	2.34E-04
END	-24.623	113.741	66.8426	3.59E-03	175.9	-3.58E-03	2.58E-04
2J44	-24.623	113.741	66.8426	3.65E-03	359.1	3.65E-03	-5.94E-05
END	-23.655	114.3	66.8426	4.04E-03	180.2	-4.04E-03	-1.42E-05
2J45	-23.831	114.3	80.5219	2.25E-03	352.2	2.23E-03	-3.07E-04
END	-24.535	114.706	80.5219	3.57E-03	180.3	-3.57E-03	-2.13E-05
2J46	-24.535	114.706	80.5219	3.47E-03	.3	3.47E-03	1.91E-05
END	-24.535	113.894	80.5219	2.33E-03	172.4	-2.31E-03	3.1E-04
2J47	-24.535	113.894	80.5219	2.44E-03	354.3	2.43E-03	-2.44E-04
END	-23.831	114.3	80.5219	3.35E-03	179.	-3.35E-03	5.93E-05
2J48	-23.831	114.3	101.041	8.55E-03	351.8	8.46E-03	-1.21E-03
END	-24.535	114.706	101.041	.0107608	176.	-.0107349	7.46E-04
2J49	-24.535	114.706	101.041	.0112424	356.8	.0112247	-6.31E-04
END	-24.535	113.894	101.041	8.06E-03	170.5	-7.94E-03	1.33E-03
2J50	-24.535	113.894	101.041	9.12E-03	353.1	9.05E-03	-1.09E-03
END	-23.831	114.3	101.041	.0101639	175.	-.0101252	8.86E-04
GND	-48.6	228.6	0	1.21726	299.9	.606271	-1.05553
660	-48.6	228.6	1.3676	1.22153	299.	.592694	-1.06811
END	-48.6	228.6	2.7352	1.2236	298.6	.585589	-1.07438
GND	-45.975	228.6	0	.0219145	218.	-.017276	-.0134828
662	-45.975	228.6	1.3676	.0173385	217.8	-.0136914	-.0106382
END	-45.975	228.6	2.7352	.0340744	217.7	-.0269783	-.0208144
GND	-49.913	230.874	0	.0219052	217.8	-.0172985	-.0134389

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664	-49.913	230.874	1.3676	.0173329	217.7	-.0137098	-.0106053
END	-49.913	230.874	2.7352	.0340694	217.5	-.0270172	-.0207557
GND	-49.913	226.326	0	.0219106	217.9	-.017283	-.0134674
666	-49.913	226.326	1.3676	.0173344	217.8	-.0136979	-.0106232
END	-49.913	226.326	2.7352	.034063	217.6	-.0269938	-.0207755
2J64	-45.975	228.6	2.7352	.408274	116.3	-.181091	.365914
668	-47.2875	228.6	2.7352	.406645	117.5	-.187801	.360681
END	-48.6	228.6	2.7352	.405194	118.6	-.193911	.355782
2J65	-49.913	230.874	2.7352	.42604	116.5	-.189831	.381411
671	-49.2565	229.737	2.7352	.424433	117.6	-.19655	.37618
END	-48.6	228.6	2.7352	.422996	118.6	-.202667	.371284
2J66	-49.913	226.326	2.7352	.398494	116.2	-.176181	.357433
674	-49.2565	227.463	2.7352	.396879	117.4	-.182902	.352221
END	-48.6	228.6	2.7352	.395413	118.6	-.189011	.347313
2J64	-45.975	228.6	2.7352	.416305	291.7	.154113	-.386729
677	-46.0146	228.6	3.76461	.418668	290.6	.147092	-.391978
678	-46.0542	228.6	4.79402	.421053	289.4	.140081	-.397067
679	-46.0938	228.6	5.82344	.423305	288.4	.133442	-.401722
680	-46.1334	228.6	6.85285	.425414	287.4	.127141	-.405971
681	-46.173	228.6	7.88226	.427373	286.5	.121142	-.409844
682	-46.2126	228.6	8.91167	.429179	285.6	.11541	-.413371
683	-46.2522	228.6	9.94108	.430832	284.8	.109919	-.416574
684	-46.2918	228.6	10.9705	.432331	284.	.104643	-.419476
685	-46.3314	228.6	11.9999	.433674	283.3	.0995614	-.422091
686	-46.371	228.6	13.0293	.434865	282.6	.0946576	-.424437
687	-46.4106	228.6	14.0587	.4359	281.9	.0899171	-.426525
688	-46.4502	228.6	15.0881	.436781	281.3	.0853287	-.428365
689	-46.4898	228.6	16.1176	.437507	280.7	.080881	-.429966
690	-46.5294	228.6	17.147	.438079	280.1	.0765677	-.431336
691	-46.569	228.6	18.1764	.438497	279.5	.0723795	-.432482
692	-46.6086	228.6	19.2058	.43876	279.	.068312	-.43341
693	-46.6482	228.6	20.2352	.43887	278.4	.0643595	-.434125
694	-46.6878	228.6	21.2646	.438825	277.9	.0605175	-.434632
695	-46.7274	228.6	22.294	.438625	277.4	.0567823	-.434934
696	-46.767	228.6	23.3234	.438272	277.	.0531506	-.435037
697	-46.8066	228.6	24.3529	.437765	276.5	.0496195	-.434944
698	-46.8462	228.6	25.3823	.437104	276.1	.0461863	-.434657
699	-46.8858	228.6	26.4117	.436289	275.6	.0428488	-.43418
700	-46.9254	228.6	27.4411	.435323	275.2	.0396052	-.433517
701	-46.965	228.6	28.4705	.434204	274.8	.0364535	-.432671
702	-47.0046	228.6	29.4999	.432933	274.4	.0333921	-.431644
703	-47.0442	228.6	30.5293	.431511	274.	.0304197	-.430438
704	-47.0838	228.6	31.5587	.42994	273.7	.0275349	-.429058
705	-47.1234	228.6	32.5881	.42822	273.3	.0247367	-.427505
706	-47.163	228.6	33.6176	.426352	273.	.0220238	-.425782
707	-47.2026	228.6	34.647	.424336	272.6	.0193954	-.423892
708	-47.2422	228.6	35.6764	.422175	272.3	.0168505	-.421838
709	-47.2818	228.6	36.7058	.419869	272.	.0143884	-.419623
710	-47.3214	228.6	37.7352	.417422	271.6	.0120084	-.417249
711	-47.361	228.6	38.7646	.414833	271.3	9.71E-03	-.41472
712	-47.4006	228.6	39.794	.412105	271.	7.49E-03	-.412037
713	-47.4402	228.6	40.8234	.409241	270.7	5.35E-03	-.409206
714	-47.4798	228.6	41.8529	.406241	270.5	3.29E-03	-.406228
715	-47.5194	228.6	42.8823	.40311	270.2	1.31E-03	-.403108
716	-47.559	228.6	43.9117	.399849	269.9	-5.87E-04	-.399848
717	-47.5986	228.6	44.9411	.396461	269.7	-2.41E-03	-.396454
718	-47.6382	228.6	45.9705	.39295	269.4	-4.16E-03	-.392928
719	-47.6778	228.6	46.9999	.38932	269.1	-5.82E-03	-.389277
720	-47.7174	228.6	48.0293	.385575	268.9	-7.42E-03	-.385504
721	-47.757	228.6	49.0587	.381722	268.7	-8.93E-03	-.381618
722	-47.7966	228.6	50.0882	.377768	268.4	-.0103678	-.377626
723	-47.8362	228.6	51.1176	.373725	268.2	-.011726	-.373541
724	-47.8758	228.6	52.147	.369615	268.	-.0130013	-.369386

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725	-47.9154	228.6	53.1764	.365512	267.8	-.0141778	-.365237
END	-47.955	228.6	54.2058	.362024	267.6	-.015104	-.361708
2J65	-49.913	230.874	2.7352	.433874	292.	.162814	-.402166
727	-49.8932	230.84	3.76461	.436173	290.9	.155782	-.407405
728	-49.8734	230.805	4.79402	.438492	289.8	.148758	-.412488
729	-49.8536	230.771	5.82344	.440676	288.8	.142103	-.417136
730	-49.8338	230.737	6.85285	.442717	287.9	.135786	-.421379
731	-49.814	230.702	7.88226	.444608	287.	.129768	-.425249
732	-49.7942	230.668	8.91167	.446348	286.1	.124019	-.428773
733	-49.7744	230.634	9.94108	.447935	285.3	.118508	-.431974
734	-49.7546	230.6	10.9705	.449369	284.6	.113211	-.434874
735	-49.7348	230.565	11.9999	.45065	283.9	.108107	-.437491
736	-49.715	230.531	13.0293	.451778	283.2	.10318	-.439838
737	-49.6952	230.497	14.0587	.452753	282.6	.0984152	-.441928
738	-49.6754	230.462	15.0881	.453575	281.9	.0938013	-.44377
739	-49.6556	230.428	16.1176	.454244	281.3	.0893274	-.445374
740	-49.6358	230.394	17.147	.45476	280.8	.0849858	-.446748
741	-49.616	230.359	18.1764	.455122	280.2	.0807693	-.447898
742	-49.5962	230.325	19.2058	.455332	279.7	.0766723	-.44883
743	-49.5764	230.291	20.2352	.455388	279.2	.0726892	-.449549
744	-49.5566	230.257	21.2646	.455291	278.7	.0688156	-.45006
745	-49.5368	230.222	22.294	.45504	278.2	.065048	-.450367
746	-49.517	230.188	23.3234	.454637	277.8	.061383	-.450475
747	-49.4972	230.154	24.3529	.454081	277.3	.0578178	-.450385
748	-49.4774	230.119	25.3823	.453372	276.9	.0543497	-.450103
749	-49.4576	230.085	26.4117	.452511	276.5	.0509767	-.44963
750	-49.4378	230.051	27.4411	.451498	276.1	.0476966	-.448971
751	-49.418	230.016	28.4705	.450333	275.7	.0445079	-.448128
752	-49.3982	229.982	29.4999	.449018	275.3	.0414088	-.447104
753	-49.3784	229.948	30.5293	.447553	274.9	.0383982	-.445902
754	-49.3586	229.914	31.5587	.445938	274.6	.0354746	-.444525
755	-49.3388	229.879	32.5881	.444175	274.2	.0326369	-.442974
756	-49.319	229.845	33.6176	.442265	273.9	.0298843	-.441254
757	-49.2992	229.811	34.647	.440208	273.5	.0272156	-.439366
758	-49.2794	229.776	35.6764	.438006	273.2	.02463	-.437312
759	-49.2596	229.742	36.7058	.43566	272.9	.0221268	-.435098
760	-49.2398	229.708	37.7352	.433172	272.6	.0197052	-.432723
761	-49.22	229.673	38.7646	.430544	272.3	.0173646	-.430193
762	-49.2002	229.639	39.794	.427777	272.	.0151044	-.42751
763	-49.1804	229.605	40.8234	.424872	271.7	.0129239	-.424676
764	-49.1606	229.571	41.8529	.421833	271.5	.0108227	-.421695
765	-49.1408	229.536	42.8823	.418663	271.2	8.8E-03	-.418571
766	-49.121	229.502	43.9117	.415362	270.9	6.86E-03	-.415306
767	-49.1012	229.468	44.9411	.411935	270.7	4.99E-03	-.411905
768	-49.0814	229.433	45.9705	.408385	270.4	3.2E-03	-.408372
769	-49.0616	229.399	46.9999	.404715	270.2	1.49E-03	-.404712
770	-49.0418	229.365	48.0293	.40093	270.	-1.46E-04	-.40093
771	-49.022	229.33	49.0587	.397035	269.8	-1.7E-03	-.397031
772	-49.0022	229.296	50.0882	.393039	269.5	-3.18E-03	-.393026
773	-48.9824	229.262	51.1176	.388954	269.3	-4.58E-03	-.388927
774	-48.9626	229.228	52.147	.384802	269.1	-5.9E-03	-.384757
775	-48.9428	229.193	53.1764	.380656	268.9	-7.12E-03	-.380589
END	-48.923	229.159	54.2058	.377128	268.8	-8.09E-03	-.377042
2J66	-49.913	226.326	2.7352	.406569	291.5	.149187	-.378208
777	-49.8932	226.36	3.76461	.408945	290.3	.14216	-.38344
778	-49.8734	226.395	4.79402	.411345	289.2	.135144	-.388511
779	-49.8536	226.429	5.82344	.413614	288.1	.1285	-.393147
780	-49.8338	226.463	6.85285	.415739	287.1	.122194	-.397376
781	-49.814	226.497	7.88226	.417715	286.2	.116191	-.40123
782	-49.7942	226.532	8.91167	.419539	285.3	.110458	-.404737
783	-49.7744	226.566	9.94108	.421208	284.4	.104964	-.40792
784	-49.7546	226.6	10.9705	.422724	283.6	.0996872	-.410802
785	-49.7348	226.635	11.9999	.424085	282.9	.094606	-.413397

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786	-49.715	226.669	13.0293	.425291	282.2	.0897022	-.415724
787	-49.6952	226.703	14.0587	.426343	281.5	.0849632	-.417791
788	-49.6754	226.738	15.0881	.42724	280.8	.0803761	-.419611
789	-49.6556	226.772	16.1176	.427983	280.2	.0759313	-.421193
790	-49.6358	226.806	17.147	.428571	279.6	.0716207	-.422545
791	-49.616	226.84	18.1764	.429005	279.	.067437	-.423672
792	-49.5962	226.875	19.2058	.429284	278.5	.063374	-.42458
793	-49.5764	226.909	20.2352	.429409	278.	.0594266	-.425277
794	-49.5566	226.943	21.2646	.429378	277.4	.0555905	-.425765
795	-49.5368	226.978	22.294	.429194	276.9	.0518618	-.426049
796	-49.517	227.012	23.3234	.428855	276.5	.0482371	-.426134
797	-49.4972	227.046	24.3529	.428362	276.	.0447135	-.426022
798	-49.4774	227.081	25.3823	.427716	275.5	.0412885	-.425719
799	-49.4576	227.115	26.4117	.426916	275.1	.0379598	-.425225
800	-49.4378	227.149	27.4411	.425963	274.7	.0347255	-.424546
801	-49.418	227.184	28.4705	.424859	274.3	.0315836	-.423684
802	-49.3982	227.218	29.4999	.423603	273.9	.0285326	-.422641
803	-49.3784	227.252	30.5293	.422196	273.5	.0255711	-.421421
804	-49.3586	227.286	31.5587	.420639	273.1	.0226977	-.420027
805	-49.3388	227.321	32.5881	.418933	272.7	.0199114	-.41846
806	-49.319	227.355	33.6176	.41708	272.4	.0172109	-.416724
807	-49.2992	227.389	34.647	.415079	272.	.0145953	-.414822
808	-49.2794	227.424	35.6764	.412932	271.7	.0120638	-.412756
809	-49.2596	227.458	36.7058	.410643	271.3	9.62E-03	-.41053
810	-49.2398	227.492	37.7352	.40821	271.	7.25E-03	-.408146
811	-49.22	227.527	38.7646	.405637	270.7	4.97E-03	-.405606
812	-49.2002	227.561	39.794	.402925	270.4	2.76E-03	-.402916
813	-49.1804	227.595	40.8234	.400077	270.1	6.39E-04	-.400076
814	-49.1606	227.629	41.8529	.397094	269.8	-1.4E-03	-.397092
815	-49.1408	227.664	42.8823	.39398	269.5	-3.37E-03	-.393965
816	-49.121	227.698	43.9117	.390736	269.2	-5.25E-03	-.390701
817	-49.1012	227.732	44.9411	.387366	269.	-7.06E-03	-.387302
818	-49.0814	227.767	45.9705	.383874	268.7	-8.79E-03	-.383773
819	-49.0616	227.801	46.9999	.380263	268.4	-.0104382	-.38012
820	-49.0418	227.835	48.0293	.376537	268.2	-.0120119	-.376346
821	-49.022	227.87	49.0587	.372705	267.9	-.0135081	-.37246
822	-49.0022	227.904	50.0882	.368771	267.7	-.0149266	-.368469
823	-48.9824	227.938	51.1176	.36475	267.4	-.016266	-.364387
824	-48.9626	227.972	52.147	.360664	267.2	-.0175223	-.360238
825	-48.9428	228.007	53.1764	.356584	267.	-.0186794	-.356095
END	-48.923	228.041	54.2058	.353117	266.8	-.0195872	-.352574
2J70	-47.955	228.6	54.2058	.360097	267.5	-.0154992	-.359763
827	-47.955	228.6	55.2787	.355948	267.3	-.0164936	-.355565
828	-47.955	228.6	56.3516	.351019	267.1	-.0175804	-.350578
829	-47.955	228.6	57.4245	.345879	266.9	-.0186161	-.345377
830	-47.955	228.6	58.4973	.340567	266.7	-.0195903	-.340003
831	-47.955	228.6	59.5702	.335094	266.5	-.0205007	-.334467
832	-47.955	228.6	60.6431	.329465	266.3	-.0213461	-.328773
833	-47.955	228.6	61.716	.323681	266.1	-.0221262	-.322924
834	-47.955	228.6	62.7889	.317744	265.9	-.0228405	-.316922
835	-47.955	228.6	63.8618	.311656	265.7	-.0234886	-.310769
836	-47.955	228.6	64.9346	.30542	265.5	-.0240703	-.30447
837	-47.955	228.6	66.0075	.299047	265.3	-.0245847	-.298034
838	-47.955	228.6	67.0804	.292584	265.1	-.0250294	-.291511
END	-47.955	228.6	68.1533	.286762	264.9	-.0253637	-.285638
2J71	-48.923	229.159	54.2058	.36839	268.2	-.0118424	-.3682
840	-48.923	229.159	55.2787	.364207	268.	-.0128845	-.363979
841	-48.923	229.159	56.3516	.359242	267.8	-.0140216	-.358968
842	-48.923	229.159	57.4245	.354065	267.6	-.0151082	-.353743
843	-48.923	229.159	58.4973	.348718	267.3	-.016134	-.348344
844	-48.923	229.159	59.5702	.343208	267.1	-.0170965	-.342782
845	-48.923	229.159	60.6431	.337542	266.9	-.0179947	-.337062
846	-48.923	229.159	61.716	.33172	266.7	-.018828	-.331186

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847	-48.923	229.159	62.7889	.325746	266.6	-.0195961	-.325156
848	-48.923	229.159	63.8618	.319621	266.4	-.0202986	-.318976
849	-48.923	229.159	64.9346	.313349	266.2	-.020935	-.312649
850	-48.923	229.159	66.0075	.306938	266.	-.0215048	-.306184
851	-48.923	229.159	67.0804	.300439	265.8	-.0220052	-.299632
END	-48.923	229.159	68.1533	.294582	265.6	-.0223942	-.29373
2J72	-48.923	228.041	54.2058	.356492	267.2	-.0172726	-.356074
853	-48.923	228.041	55.2787	.352358	267.	-.0182448	-.351885
854	-48.923	228.041	56.3516	.347446	266.8	-.0193084	-.34691
855	-48.923	228.041	57.4245	.342323	266.6	-.0203203	-.341719
856	-48.923	228.041	58.4973	.337029	266.4	-.0212706	-.336357
857	-48.923	228.041	59.5702	.331573	266.2	-.0221567	-.330832
858	-48.923	228.041	60.6431	.325961	266.	-.0229777	-.32515
859	-48.923	228.041	61.716	.320193	265.7	-.0237328	-.319312
860	-48.923	228.041	62.7889	.314272	265.5	-.024422	-.313322
861	-48.923	228.041	63.8618	.308201	265.3	-.0250447	-.307181
862	-48.923	228.041	64.9346	.301982	265.1	-.0256007	-.300895
863	-48.923	228.041	66.0075	.295625	264.9	-.0260893	-.294471
864	-48.923	228.041	67.0804	.289178	264.7	-.026508	-.287961
END	-48.923	228.041	68.1533	.283373	264.6	-.0268168	-.282101
2J73	-47.955	228.6	68.1533	.283914	264.9	-.0254578	-.282771
866	-47.9685	228.6	69.2262	.278375	264.7	-.0257045	-.277186
867	-47.9821	228.6	70.299	.271789	264.5	-.0259341	-.270548
868	-47.9956	228.6	71.3719	.264984	264.3	-.0261038	-.263695
869	-48.0092	228.6	72.4448	.258036	264.2	-.0262102	-.256702
870	-48.0227	228.6	73.5177	.250968	264.	-.0262525	-.249591
871	-48.0362	228.6	74.5906	.243786	263.8	-.0262311	-.242371
872	-48.0498	228.6	75.6634	.236498	263.7	-.0261461	-.235048
873	-48.0633	228.6	76.7363	.229106	263.5	-.0259981	-.227626
874	-48.0768	228.6	77.8092	.221617	263.3	-.0257874	-.220111
875	-48.0904	228.6	78.8821	.214034	263.2	-.0255148	-.212508
876	-48.1039	228.6	79.9549	.206366	263.	-.0251811	-.204823
877	-48.1175	228.6	81.0278	.198635	262.8	-.0247879	-.197083
END	-48.131	228.6	82.1007	.191495	262.7	-.024375	-.189938
2J74	-48.923	229.159	68.1533	.290519	265.5	-.0229972	-.289607
879	-48.9162	229.147	69.2262	.284949	265.3	-.0232936	-.283995
880	-48.9095	229.135	70.299	.278331	265.1	-.0235747	-.277331
881	-48.9027	229.124	71.3719	.271495	265.	-.0237955	-.27045
882	-48.8959	229.112	72.4448	.264517	264.8	-.0239523	-.263431
883	-48.8892	229.1	73.5177	.257418	264.6	-.0240446	-.256293
884	-48.8824	229.088	74.5906	.250207	264.5	-.0240725	-.249047
885	-48.8756	229.077	75.6634	.242891	264.3	-.0240364	-.241698
886	-48.8688	229.065	76.7363	.235471	264.2	-.0239366	-.234251
887	-48.8621	229.053	77.8092	.227953	264.	-.0237736	-.22671
888	-48.8553	229.041	78.8821	.220343	263.9	-.023548	-.219081
889	-48.8485	229.03	79.9549	.212647	263.7	-.0232606	-.211371
890	-48.8418	229.018	81.0278	.204892	263.6	-.0229132	-.203607
END	-48.835	229.006	82.1007	.197728	263.5	-.0225446	-.196438
2J75	-48.923	228.041	68.1533	.280817	264.6	-.0266151	-.279553
892	-48.9162	228.053	69.2262	.275291	264.4	-.0268385	-.27398
893	-48.9095	228.065	70.299	.268719	264.2	-.0270441	-.267354
894	-48.9027	228.076	71.3719	.261929	264.	-.02719	-.260514
895	-48.8959	228.088	72.4448	.254996	263.9	-.0272727	-.253533
896	-48.8892	228.1	73.5177	.247941	263.7	-.0272916	-.246435
897	-48.8824	228.112	74.5906	.240774	263.5	-.0272472	-.239227
898	-48.8756	228.123	75.6634	.2335	263.3	-.0271393	-.231917
899	-48.8688	228.135	76.7363	.226123	263.2	-.0269688	-.224509
900	-48.8621	228.147	77.8092	.218647	263.	-.026736	-.217006
901	-48.8553	228.159	78.8821	.211079	262.8	-.0264416	-.209416
902	-48.8485	228.17	79.9549	.203425	262.6	-.0260862	-.201745
903	-48.8418	228.182	81.0278	.19571	262.5	-.0256718	-.194019
END	-48.835	228.194	82.1007	.188584	262.3	-.0252384	-.186888
2J76	-48.131	228.6	82.1007	.189294	262.7	-.0241634	-.187745

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905	-48.131	228.6	83.1468	.182742	262.5	-.0237347	-.181194
906	-48.131	228.6	84.1929	.175206	262.4	-.0231952	-.173664
907	-48.131	228.6	85.239	.167467	262.2	-.0225923	-.165936
908	-48.131	228.6	86.285	.159571	262.1	-.0219284	-.158058
909	-48.131	228.6	87.3311	.151533	262.	-.0212041	-.150042
910	-48.131	228.6	88.3772	.143359	261.8	-.0204188	-.141897
911	-48.131	228.6	89.4233	.135048	261.7	-.0195723	-.133622
912	-48.131	228.6	90.4694	.126599	261.5	-.0186638	-.125216
913	-48.131	228.6	91.5155	.11801	261.4	-.0176923	-.116676
914	-48.131	228.6	92.5616	.109274	261.2	-.0166565	-.107997
915	-48.131	228.6	93.6076	.100386	261.1	-.0155549	-.0991732
916	-48.131	228.6	94.6537	.0913329	260.9	-.0143851	-.0901929
917	-48.131	228.6	95.6998	.0821019	260.8	-.0131442	-.0810429
918	-48.131	228.6	96.7459	.0726711	260.6	-.0118283	-.0717021
919	-48.131	228.6	97.792	.0630118	260.5	-.0104315	-.0621423
920	-48.131	228.6	98.8381	.0530781	260.3	-8.95E-03	-.0523188
921	-48.131	228.6	99.8841	.0427969	260.1	-7.36E-03	-.04216
922	-48.131	228.6	100.93	.0320373	259.9	-5.64E-03	-.031537
923	-48.131	228.6	101.976	.0205227	259.5	-3.75E-03	-.0201779
END	-48.131	228.6	103.022	8.04E-03	258.3	-1.63E-03	-7.87E-03
2J77	-48.835	229.006	82.1007	.193998	263.3	-.0227025	-.192665
925	-48.835	229.006	83.1468	.187424	263.2	-.0223125	-.186091
926	-48.835	229.006	84.1929	.179868	263.	-.0218132	-.17854
927	-48.835	229.006	85.239	.172107	262.9	-.0212506	-.17079
928	-48.835	229.006	86.285	.164189	262.8	-.0206272	-.162888
929	-48.835	229.006	87.3311	.15613	262.7	-.0199432	-.154851
930	-48.835	229.006	88.3772	.147934	262.5	-.0191984	-.146683
931	-48.835	229.006	89.4233	.139602	262.4	-.0183924	-.138385
932	-48.835	229.006	90.4694	.131132	262.3	-.0175244	-.129956
933	-48.835	229.006	91.5155	.122521	262.2	-.0165935	-.121393
934	-48.835	229.006	92.5616	.113765	262.1	-.0155983	-.112691
935	-48.835	229.006	93.6076	.104856	262.	-.0145371	-.103843
936	-48.835	229.006	94.6537	.0957824	262.	-.0134079	-.0948393
937	-48.835	229.006	95.6998	.08653	261.9	-.0122075	-.0856646
938	-48.835	229.006	96.7459	.0770795	261.8	-.0109319	-.0763004
939	-48.835	229.006	97.792	.0673998	261.8	-9.58E-03	-.0667161
940	-48.835	229.006	98.8381	.0574465	261.9	-8.13E-03	-.0568683
941	-48.835	229.006	99.8841	.0471465	262.	-6.58E-03	-.0466849
942	-48.835	229.006	100.93	.0363696	262.2	-4.9E-03	-.0360373
943	-48.835	229.006	101.976	.0248416	262.9	-3.05E-03	-.0246534
END	-48.835	229.006	103.022	.0123581	265.5	-9.76E-04	-.0123195
2J78	-48.835	228.194	82.1007	.187017	262.4	-.024837	-.18536
945	-48.835	228.194	83.1468	.180477	262.2	-.0243904	-.178821
946	-48.835	228.194	84.1929	.172954	262.1	-.0238323	-.171304
947	-48.835	228.194	85.239	.165228	261.9	-.023211	-.163589
948	-48.835	228.194	86.285	.157345	261.8	-.0225286	-.155724
949	-48.835	228.194	87.3311	.149321	261.6	-.0217856	-.147723
950	-48.835	228.194	88.3772	.141159	261.5	-.0209818	-.139591
951	-48.835	228.194	89.4233	.132861	261.3	-.0201168	-.13133
952	-48.835	228.194	90.4694	.124426	261.1	-.0191898	-.122938
953	-48.835	228.194	91.5155	.11585	261.	-.0181998	-.114411
954	-48.835	228.194	92.5616	.107128	260.8	-.0171456	-.105747
955	-48.835	228.194	93.6076	.098253	260.6	-.0160254	-.0969373
956	-48.835	228.194	94.6537	.0892143	260.4	-.0148372	-.0879719
957	-48.835	228.194	95.6998	.0799968	260.2	-.0135779	-.0788361
958	-48.835	228.194	96.7459	.0705799	260.	-.0122436	-.0695098
959	-48.835	228.194	97.792	.0609345	259.8	-.0108285	-.0599647
960	-48.835	228.194	98.8381	.0510153	259.5	-9.32E-03	-.050156
961	-48.835	228.194	99.8841	.0407494	259.1	-7.72E-03	-.0400121
962	-48.835	228.194	100.93	.0300067	258.5	-5.98E-03	-.0294043
963	-48.835	228.194	101.976	.0185136	257.3	-4.07E-03	-.0180606
END	-48.835	228.194	103.022	6.08E-03	251.4	-1.94E-03	-5.77E-03
2J70	-47.955	228.6	54.2058	1.36E-03	126.1	-8.E-04	1.1E-03

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END	-48.923	229.159	54.2058	3.81E-03	112.	-1.43E-03	3.53E-03
2J71	-48.923	229.159	54.2058	5.8E-03	293.7	2.33E-03	-5.31E-03
END	-48.923	228.041	54.2058	3.35E-03	300.7	1.71E-03	-2.88E-03
2J72	-48.923	228.041	54.2058	8.68E-04	134.1	-6.04E-04	6.24E-04
END	-47.955	228.6	54.2058	3.27E-03	111.4	-1.19E-03	3.04E-03
2J73	-47.955	228.6	68.1533	1.23E-03	266.7	-7.11E-05	-1.23E-03
END	-48.923	229.159	68.1533	1.98E-03	97.3	-2.53E-04	1.96E-03
2J74	-48.923	229.159	68.1533	2.19E-03	279.2	3.5E-04	-2.16E-03
END	-48.923	228.041	68.1533	1.04E-03	80.	1.81E-04	1.02E-03
2J75	-48.923	228.041	68.1533	1.53E-03	269.2	-2.11E-05	-1.53E-03
END	-47.955	228.6	68.1533	1.65E-03	95.8	-1.65E-04	1.64E-03
2J76	-48.131	228.6	82.1007	7.24E-04	255.4	-1.82E-04	-7.E-04
END	-48.835	229.006	82.1007	1.8E-03	91.3	-3.96E-05	1.8E-03
2J77	-48.835	229.006	82.1007	1.97E-03	273.4	1.18E-04	-1.97E-03
END	-48.835	228.194	82.1007	5.91E-04	63.1	2.67E-04	5.28E-04
2J78	-48.835	228.194	82.1007	1.01E-03	262.4	-1.34E-04	-1.E-03
END	-48.131	228.6	82.1007	1.49E-03	88.9	2.93E-05	1.49E-03
2J79	-48.131	228.6	103.022	3.03E-03	251.3	-9.7E-04	-2.87E-03
END	-48.835	229.006	103.022	5.82E-03	84.7	5.34E-04	5.8E-03
2J80	-48.835	229.006	103.022	6.54E-03	266.1	-4.43E-04	-6.52E-03
END	-48.835	228.194	103.022	2.38E-03	63.4	1.07E-03	2.13E-03
2J81	-48.835	228.194	103.022	3.74E-03	256.6	-8.69E-04	-3.64E-03
END	-48.131	228.6	103.022	5.05E-03	82.5	6.6E-04	5.E-03

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END	-48.923	229.159	54.2058	3.81E-03	112.	-1.43E-03	3.53E-03
2J71	-48.923	229.159	54.2058	5.8E-03	293.7	2.33E-03	-5.31E-03
END	-48.923	228.041	54.2058	3.35E-03	300.7	1.71E-03	-2.88E-03
2J72	-48.923	228.041	54.2058	8.68E-04	134.1	-6.04E-04	6.24E-04
END	-47.955	228.6	54.2058	3.27E-03	111.4	-1.19E-03	3.04E-03
2J73	-47.955	228.6	68.1533	1.23E-03	266.7	-7.11E-05	-1.23E-03
END	-48.923	229.159	68.1533	1.98E-03	97.3	-2.53E-04	1.96E-03
2J74	-48.923	229.159	68.1533	2.19E-03	279.2	3.5E-04	-2.16E-03
END	-48.923	228.041	68.1533	1.04E-03	80.	1.81E-04	1.02E-03
2J75	-48.923	228.041	68.1533	1.53E-03	269.2	-2.11E-05	-1.53E-03
END	-47.955	228.6	68.1533	1.65E-03	95.8	-1.65E-04	1.64E-03
2J76	-48.131	228.6	82.1007	7.24E-04	255.4	-1.82E-04	-7.E-04
END	-48.835	229.006	82.1007	1.8E-03	91.3	-3.96E-05	1.8E-03
2J77	-48.835	229.006	82.1007	1.97E-03	273.4	1.18E-04	-1.97E-03
END	-48.835	228.194	82.1007	5.91E-04	63.1	2.67E-04	5.28E-04
2J78	-48.835	228.194	82.1007	1.01E-03	262.4	-1.34E-04	-1.E-03
END	-48.131	228.6	82.1007	1.49E-03	88.9	2.93E-05	1.49E-03
2J79	-48.131	228.6	103.022	3.03E-03	251.3	-9.7E-04	-2.87E-03
END	-48.835	229.006	103.022	5.82E-03	84.7	5.34E-04	5.8E-03
2J80	-48.835	229.006	103.022	6.54E-03	266.1	-4.43E-04	-6.52E-03
END	-48.835	228.194	103.022	2.38E-03	63.4	1.07E-03	2.13E-03
2J81	-48.835	228.194	103.022	3.74E-03	256.6	-8.69E-04	-3.64E-03
END	-48.131	228.6	103.022	5.05E-03	82.5	6.6E-04	5.E-03