"li-ion.in" file

460	! lim, limit on number of iterations
96.0d-06	! h1, thickness of negative electrode (m)
25.0d-06	! h2, thickness of separator (m)
60.0d-06	! h3, thickness of positive electrode (m)
10.0d-06	! hcn, thickness of negative current collector (m)
10.0d-06	! hcp, thickness of positive current collector (m)
40	! n1, number of nodes in negative electrode (set=0 if in foil mode)
40	! n2, number of nodes in separator
80	! n3, number of nodes in positive electrode
100	! n4, number of nodes in solid particle
0	! mvdc1, flag for variable solid diff coeff in anode
0	! mvdc3, flag for variable solid diff coeff in cathode
10	! lims, number of iterations for solid phase convergence
298.15	! T temperature (K)
1000.0	! xi(1,1), initial salt concentration (mol/m^3)
0.593	! x, initial stoichiometric parameter for neg. (ignored if n1=0)
0.53	! y, initial stoichiometric parameter for positive
1.02d0	! tmmax, maximum time step size (s)
7.0d-14	! dfs1, diffusion coef. in negative solid (m^2/s)
3.0d-14	! dfs3, diffusion coef. in positive solid (m^2/s)
8.0d-6	! Rad1, radius of negative particles (m)
5.0d-6	! Rad3, radius of positive particles (m)
0.4	! ep1, volume fraction of electrolyte in negative electrode
0.0d0	! epp1, volume fraction of polymer in negative electrode
0.064	! epf1, volume fraction of inert filler in negative electrode
0.0d0	! epg1, volume fraction of gas in negative
0.4	! ep2, ep2+epp2=1.0 volume fraction of electrolyte in separator
0.0d0	! epp2, volume fraction of polymer in separator
0.0d0	! epg2, volume fraction gas in separator
0.36	! ep3, volume fraction of electrolyte in positive electrode
0.0d0	! epp3, volume fraction of polymer in positive electrode
0.106	! epf3, volume fraction of inert filler in positive electrode
0.0d0	! epg3, volume fraction of gas in positive
100.0d0	! sig1, conductivity of negative matrix (S/m) (ignored in Foil mode)
0.5d0	! sig3, conductivity of positive matrix (S/m)
3.0d-9	! rka1, rate constant for negative reaction
3.0d-9	! rka3, rate constant for positive reaction
0.35d-2	! ranode, anode film resistance (ohm)
0.000d0	! rcathde, cathode film resistance (ohm)
372.d0	! cot1, coulombic capacity of negative material (mAh/g)
274.d0	! cot3, coulombic capacity of positive material (mAh/g)
1324.0	! re, density of electrolyte (kg/m^3)
1800.0	! rs1, density of negative insertion material (kg/m^3)

5010.0   ! rs3, density of positive insertion material (kg/m^3)

1800.0   ! rf, density of inert filler (kg/m^3)

1780.0   ! rpl, (not used here) density of polymer material (kg/m^3)

552d0   ! rc, density of inert separator material (kg/m^3)

8954.0   ! rcn ,density of negative current collector (kg/m^3) [copper foil]

2707.0   ! rcp, density of positive current collector (kg/m^3) [aluminum foil]

0.0d0   ! htc, heat-transfer coefficient at ends of cell stack (W/m^{2}K)

500.0d0   ! Cp, heat capacity of system (J/kg-K)

298.15d0 ! Tam, ambient air temperature (K)

1   ! ncell, number of cells in a cell stack

0   ! lht, 0 uses htc, 1 calcs htc, 2 isothermal

1   ! il1, 1 for long print-out   0 for short print-out

10   ! il2, prints every il2 th node in long print-out

10   ! il3, prints every il3 th time step in long print-out

1   ! lflag, 0 for electrolyte in separator only, 1 for uniform

0   ! imp, 0 for no impedance, 1 for impedance

0.0d0   ! capp1, capacitance of negative material (F/m^2)

0.0d0   ! capp3, capacitance of positive material (F/m^2)

0   ! lpow 0 for no power peaks, 1 for power peaks

0   ! jsol calculate solid profiles if 1 < jsol < nj

0   ! nside flag to turn on (1) or off (0) side reactions

0.0d0   ! rksa1 rate constant side reaction 1 negative (ignored if nside=0)

0.0d0   ! rksc1 rate constant side reaction 1 positive (ignored if nside=0)

0.0d0   ! rksa2 rate constant side reaction 2 negative (ignored if nside=0)

0.0d0   ! rksc2 rate constant side reaction 2 positive (ignored if nside=0)

0.0d0   ! rksa3 rate constant s0de reaction 3 negative (ignored if nside=0)

0.0d0   ! rksc3 rate constant side reaction 3 positive (ignored if nside=0)

3   ! nneg see below

11   ! nprop see below

6   ! npos see below

1   ! lcurs, number of current changes

10.0d0   120.0d0   -3   0.0001d0   4.70d0

EXPLANATIONS

lines 20-22: ep1, epp1, and epf1

Set equal to 0.0 when running in Foil mode

line 50: il1

            1 gives long print-out no matter if a run converges or not

The long print-out stops at t(noncovergence).

            0 gives short print-out if a run converges but a long

                print-out if the run does not converge.

line 59: lcurs, number of current changes

line 60 onward: cu(i), tt(i), mc(i), vcutlo(i), vcuthi(i)

            cu(i) The ith value of the current (A/m^2), potential (V), power (W/m^2) or load of the segment

tt(i) The ith value of the time (min) or cutoff potential (V) of the segment

mc(i) The mode of the segment; 0 for potentiostatic, 1 for galvanostatic for a given time, 2 for galvanostatic to a cutoff potential, -1 for galvanostatic for a given time with a tapered current upon reaching a cutoff potential, -2 for specified power (in W/m^2), and -3 for specified load

vcutlo(i) low voltage cutoff for current step

vcuthi(i) high voltage cutoff for current step

nneg:

1 ! Li foil

2 ! Carbon (petroleum coke)

3 ! MCMB 2528 graphite (Bellcore) (0.01 < x < 0.90)

4 ! TiS2

5 ! Tungsten oxide (LixWO3 with 0<x<0.67)

6 ! Lonza KS6 graphite (Bellcore)

7 ! Albertus MH

8 ! Add your own negative electrode

nprop:

1 ! AsF6 in methyl acetate

2 ! Perchlorate in PEO

3 ! Sodium Triflate in PEO

4 ! LiPF6 in PC (Sony cell simulation)

5 ! Perchlorate in PC (West simulation)

6 ! Triflate in PEO

7 ! LiPF6 in EC/DMC and p(VdF-HFP) (Bellcore)

8 ! LiPF6 in EC/DMC and p(VdF-HFP) (Bellcore) cell #2

9 ! Ideal ion exchange membrane

10 ! TFSI in PEMO at 40 C (oxymethylene-linked PEO) (LBL)

11 ! LiPF6 in EC:DMC (liquid)

12 ! LiTFSI in PEO at 85 C (LBL)

13 ! Paxton 30% KOH in H2O

14 ! Add your own electrolyte

npos:

1 ! TiS2

2 ! Spinel Mn2O4 (lower plateau)

3 ! NaCoO2:   Sodium cobalt oxide (P2 phase, 0.3<y<0.92)

4 ! Spinel Mn2O4 (upper plateau) (0.2 < y < 1.0)

5 ! Tungsten oxide (LixWO3 with 0<x<0.67)

6 ! CoO2 (Cobalt dioxide) (0.5 < y < 0.99)

7 ! V2O5 (Vanadium oxide) (0 < y < 0.95)

8 ! Ni0.8Co0.2O2 (Gen 1) (0.4 < y < 0.99)

9 ! Spinel Mn2O4 (Bellcore)

10 ! V6O13 (vanadium oxide) (LiyV02.167, 0.05 < y < 1.0)

11 ! LiAl0.2Mn1.8O4F0.2 (Bellcore doped spinel) (0.21 < y < 1.0)

12 ! Albertus NiOOHHy

13 ! Add your own positive electrode

'profiles.out' file

Distance (microns)	C Elec (mol/m3)	C Sol Surf x or y	Liq Pot (V)	Solid Pot (V)	Liq Cur (A/m2)	j main (A/m2)	j side 1 (A/m2)	j side 2 (A/m2)	j side 3 (A/m2)
t = 4.145296E-03 min									
0.0,	1000.3,	0.7997,	0.302E-02,	0.180,	0.09646,	0.6099E-5 ,	0.000 ,	0.000 ,	0.000
24.0,	1000.3,	0.7996,	0.293E-02,	0.180,	2.061,	0.6597E-5,	0.000,	0.000,	0.000
48.0,	1000.4,	0.7996,	0.268E-02,	0.180,	4.237,	0.7236E-5,	0.000,	0.000,	0.000
72.0,	1000.5,	0.7995,	0.222E-02,	0.180,	6.852,	0.7985E-5,	0.000 ,	0.000 ,	0.000
96.0,	1000.1,	0.7993,	0.150E-02,	0.180,	10.00,	0.8602E-5,	0.000,	0.000,	0.000
96.01,	1000.1,	0.7993,	0.150E-02,	0.180,	10.00,	0.000E-5,	0.000 ,	0.000,	0.000
102.2,	1000.0,	0.0000,	0.144E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000 ,	0.000,	0.000
108.5,	1000.0,	0.0000,	0.138E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000 ,	0.000,	0.000
114.7,	999.9,	0.0000,	0.132E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000,	0.000,	0.000
120.9,	999.7,	0.5007,	0.126E-02,	4.242,	9.886 ,	0.000E-5 ,	0.000 ,	0.000,	0.000
121.0,	999.7,	0.5007,	0.126E-02,	4.242,	9.886 ,	-1.274E-5 ,	0.000 ,	0.000,	0.000
128.5,	999.3,	0.5004,	0.962E-03,	4.242,	8.018 ,	-1.123E-5 ,	0.000,	0.000,	0.000
136.0,	999.4,	0.5003,	0.733E-03,	4.242,	6.698 ,	-.9570E-5 ,	0.000,	0.000,	0.000
143.5,	999.5,	0.5002,	0.542E-03,	4.242,	5.293 ,	-.7910E-5 ,	0.000,	0.000,	0.000
151.0,	999.6,	0.5002,	0.378E-03,	4.242,	4.232 ,	-.5881E-5 ,	0.000,	0.000,	0.000
158.5,	999.5,	0.5002,	0.236E-03,	4.242,	3.374 ,	-.5233E-5 ,	0.000,	0.000,	0.000
166.0,	999.4,	0.5003,	0.119E-03,	4.241,	2.376 ,	-.5389E-5 ,	0.000,	0.000,	0.000
173.5,	999.1,	0.5004,	0.347E-04,	4.241,	1.083 ,	-.6054E-5 ,	0.000,	0.000,	0.000
181.0,	998.9,	0.5006,	0.00 ,	4.241,	0.000 ,	-.8038E-5 ,	0.000,	0.000,	0.000

Distance (microns)	C Elec (mol/m3)	C Sol Surf x or y	Liq Pot (V)	Solid Pot (V)	Liq Cur (A/m2)	j main (A/m2)	j side 1 (A/m2)	j side 2 (A/m2)	j side 3 (A/m2)
t =2.97796E+01 min									
0.0,	1032.6,	0.6873,	0.513E-02,	0.185,	0.9822E-01,	0.6572E-5,	0.000,	0.000,	0.000
24.0,	1030.5,	0.6816,	0.499E-02,	0.185,	2.098 ,	0.6869E-5 ,	0.000,	0.000 ,	0.000
48.0,	1024.2,	0.6626,	0.455E-02,	0.185,	4.311 ,	0.7192E-5 ,	0.000,	0.000 ,	0.000
72.0,	1012.9,	0.6262,	0.376E-02,	0.185,	6.977 ,	0.7390E-5 ,	0.000 ,	0.000 ,	0.000
96.0,	1000.8,	0.5702,	0.254E-02,	0.185,	10.00 ,	0.7495E-5 ,	0.000,	0.000,	0.000
96.01,	1000.8,	0.5702,	0.254E-02,	0.185,	10.00 ,	0.000E-5 ,	0.000 ,	0.000,	0.000
102.2,	998.9,	0.0000,	0.244E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000 ,	0.000,	0.000
108.5,	996.1,	0.0000,	0.234E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000 ,	0.000,	0.000
114.7,	993.8,	0.0000,	0.225E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000 ,	0.000,	0.000
120.9,	991.5,	0.6175,	0.215E-02,	4.049,	9.938 ,	0.000E-5 ,	0.000,	0.000,	0.000
121.0,	991.5,	0.6175,	0.215E-02,	4.049,	9.938 ,	-.7823E-5 ,	0.000 ,	0.000,	0.000
128.5,	983.5,	0.6170,	0.165E-02,	4.049,	8.702 ,	-.7860E-5 ,	0.000,	0.000,	0.000
136.0,	977.5,	0.6165,	0.121E-02,	4.049,	7.458 ,	-.7889E-5 ,	0.000,	0.000,	0.000
143.5,	972.5,	0.6162,	0.844E-03,	4.049,	6.209 ,	-.7910E-5 ,	0.000,	0.000,	0.000
151.0,	968.4,	0.6160,	0.540E-03,	4.048,	4.955 ,	-.7923E-5 ,	0.000,	0.000,	0.000
158.5,	965.2,	0.6159,	0.304E-03,	4.048,	3.699 ,	-.7928E-5 ,	0.000,	0.000,	0.000
166.0,	962.9,	0.6160,	0.135E-03,	4.048,	2.443 ,	-.7925E-5 ,	0.000,	0.000,	0.000

| 173.5, | 961.5, | 0.6161, | 0.337E-04, | 4.048, | 1.188 | , -.7915E-5 , | 0.000 , | 0.000 , | 0.000 |
| 181.0, | 961.1, | 0.6164, | 0.00 , | 4.048, | 0.000 | , -.7897E-5 , | 0.000 , | 0.000 , | 0.000 |

Distance (microns)	C Elec (mol/m3)	C Sol Surf x or y	Liq Pot (V)	Solid Pot (V)	Liq Cur (A/m2)	j main (A/m2)	j side 1 (A/m2)	j side 2 (A/m2)	j side 3 (A/m2)
t = 6.13142E+01 min									
0.0,	1036.2,	0.5012,	0.537E-02,	0.202,	0.1408 ,	0.7838E-5 ,	0.000 ,	0.000 ,	0.000
24.0,	1033.3,	0.5006,	0.518E-02,	0.202,	2.905 ,	0.7567E-5 ,	0.000 ,	0.000 ,	0.000
48.0,	1025.1,	0.4990,	0.461E-02,	0.202,	5.461 ,	0.7210E-5 ,	0.000 ,	0.000 ,	0.000
72.0,	1012.0,	0.4967,	0.369E-02,	0.202,	7.831 ,	0.6602E-5 ,	0.000 ,	0.000 ,	0.000
96.0,	1000.5,	0.4939,	0.244E-02,	0.202,	10.00 ,	0.6095E-5 ,	0.000 ,	0.000 ,	0.000
96.01,	1000.5,	0.4939,	0.244E-02,	0.202,	10.00 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
102.2,	998.5,	0.0000,	0.235E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
108.5,	995.7,	0.0000,	0.226E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
114.7,	993.4,	0.0000,	0.216E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
120.9,	991.4,	0.7378,	0.207E-02,	3.944,	9.936 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
121.0,	991.4,	0.7378,	0.207E-02,	3.944,	9.936 ,	-.8017E-5 ,	0.000 ,	0.000 ,	0.000
128.5,	982.7,	0.7369,	0.159E-02,	3.944,	8.666 ,	-.7961E-5 ,	0.000 ,	0.000 ,	0.000
136.0,	976.9,	0.7361,	0.117E-02,	3.944,	7.408 ,	-.7918E-5 ,	0.000 ,	0.000 ,	0.000
143.5,	972.1,	0.7356,	0.811E-03,	3.944,	6.158 ,	-.7888E-5 ,	0.000 ,	0.000 ,	0.000
151.0,	968.1,	0.7353,	0.519E-03,	3.944,	4.914 ,	-.7870E-5 ,	0.000 ,	0.000 ,	0.000
158.5,	965.0,	0.7352,	0.293E-03,	3.943,	3.673 ,	-.7864E-5 ,	0.000 ,	0.000 ,	0.000
166.0,	962.8,	0.7353,	0.130E-03,	3.943,	2.431 ,	-.7869E-5 ,	0.000 ,	0.000 ,	0.000
173.5,	961.5,	0.7355,	0.326E-04,	3.943,	1.187 ,	-.7886E-5 ,	0.000 ,	0.000 ,	0.000
181.0,	961.1,	0.7360,	0.00 ,	3.943,	0.000 ,	-.7915E-5 ,	0.000 ,	0.000 ,	0.000

Distance (microns)	C Elec (mol/m3)	C Sol Surf x or y	Liq Pot (V)	Solid Pot (V)	Liq Cur (A/m2)	j main (A/m2)	j side 1 (A/m2)	j side 2 (A/m2)	j side 3 (A/m2)
t = 8.93450E+01 min									
0.0,	1030.6,	0.3801,	0.480E-02,	0.221,	0.1018 ,	0.6421E-5 ,	0.000 ,	0.000 ,	0.000
24.0,	1028.6,	0.3775,	0.466E-02,	0.221,	2.156 ,	0.6821E-5 ,	0.000 ,	0.000 ,	0.000
48.0,	1022.5,	0.3690,	0.424E-02,	0.221,	4.324 ,	0.7222E-5 ,	0.000 ,	0.000 ,	0.000
72.0,	1012.0,	0.3520,	0.349E-02,	0.221,	6.809 ,	0.7777E-5 ,	0.000 ,	0.000 ,	0.000
96.0,	1000.1,	0.3184,	0.236E-02,	0.221,	10.00 ,	0.8204E-5 ,	0.000 ,	0.000 ,	0.000
96.01,	1000.1,	0.3184,	0.236E-02,	0.221,	10.00 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
102.2,	998.0,	0.0000,	0.227E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
108.5,	995.2,	0.0000,	0.218E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
114.7,	993.0,	0.0000,	0.209E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
120.9,	991.1,	0.8502,	0.200E-02,	3.915,	9.931 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
121.0,	991.1,	0.8502,	0.200E-02,	3.915,	9.931 ,	-.8581E-5 ,	0.000 ,	0.000 ,	0.000
128.5,	984.5,	0.8461,	0.153E-02,	3.915,	8.584 ,	-.8274E-5 ,	0.000 ,	0.000 ,	0.000
136.0,	979.0,	0.8431,	0.112E-02,	3.915,	7.298 ,	-.7964E-5 ,	0.000 ,	0.000 ,	0.000
143.5,	974.3,	0.8411,	0.781E-03,	3.915,	6.053 ,	-.7826E-5 ,	0.000 ,	0.000 ,	0.000
151.0,	970.5,	0.8399,	0.502E-03,	3.914,	4.832 ,	-.7979E-5 ,	0.000 ,	0.000 ,	0.000

Distance (microns)	C Elec (mol/m3)	C Sol Surf x or y	Liq Pot (V)	Solid Pot (V)	Liq Cur (A/m2)	j main (A/m2)	j side 1 (A/m2)	j side 2 (A/m2)	j side 3 (A/m2)
158.5,	967.5,	0.8394,	0.284E-03,	3.914,	3.623 ,	-.7956E-5 ,	0.000 ,	0.000 ,	0.000
166.0,	965.4,	0.8398,	0.127E-03,	3.914,	2.412 ,	-.7934E-5 ,	0.000 ,	0.000 ,	0.000
173.5,	964.1,	0.8410,	0.320E-04,	3.914,	1.188 ,	-.7916E-5 ,	0.000 ,	0.000 ,	0.000
181.0,	963.7,	0.8430,	0.00 ,	3.914,	0.000 ,	-.7909E-5 ,	0.000 ,	0.000 ,	0.000

Distance (microns)	C Elec (mol/m3)	C Sol Surf x or y	Liq Pot (V)	Solid Pot (V)	Liq Cur (A/m2)	j main (A/m2)	j side 1 (A/m2)	j side 2 (A/m2)	j side 3 (A/m2)
t = 1.173758E+02 min									
0.0,	1035.2,	0.2303,	0.532E-02,	0.236,	0.1437 ,	0.8657E-5 ,	0.000 ,	0.000 ,	0.000
24.0,	1032.5,	0.2296,	0.513E-02,	0.236,	2.966 ,	0.7887E-5 ,	0.000 ,	0.000 ,	0.000
48.0,	1024.5,	0.2278,	0.457E-02,	0.236,	5.566 ,	0.7242E-5 ,	0.000 ,	0.000 ,	0.000
72.0,	1011.8,	0.2253,	0.368E-02,	0.236,	7.922 ,	0.6400E-5 ,	0.000 ,	0.000 ,	0.000
96.0,	1000.0,	0.2223,	0.248E-02,	0.236,	10.00 ,	0.5702E-5 ,	0.000 ,	0.000 ,	0.000
96.01,	1000.0,	0.2223,	0.248E-02,	0.236,	10.00 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
102.2,	997.7,	0.0000,	0.239E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
108.5,	994.9,	0.0000,	0.230E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
114.7,	992.6,	0.0000,	0.221E-02,	0.000,	10.00 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
120.9,	990.8,	0.9596,	0.212E-02,	3.908,	9.968 ,	0.000E-5 ,	0.000 ,	0.000 ,	0.000
121.0,	990.8,	0.9596,	0.212E-02,	3.908,	9.968 ,	-.5667E-5 ,	0.000 ,	0.000 ,	0.000
128.5,	983.4,	0.9561,	0.165E-02,	3.908,	9.198 ,	-.6485E-5 ,	0.000 ,	0.000 ,	0.000
136.0,	977.5,	0.9519,	0.121E-02,	3.908,	8.158 ,	-.7250E-5 ,	0.000 ,	0.000 ,	0.000
143.5,	972.4,	0.9476,	0.834E-03,	3.908,	6.864 ,	-.7949E-5 ,	0.000 ,	0.000 ,	0.000
151.0,	968.2,	0.9442,	0.524E-03,	3.908,	5.423 ,	-.8530E-5 ,	0.000 ,	0.000 ,	0.000
158.5,	965.0,	0.9427,	0.287E-03,	3.907,	3.944 ,	-.8629E-5 ,	0.000 ,	0.000 ,	0.000
166.0,	962.7,	0.9434,	0.123E-03,	3.907,	2.497 ,	-.8205E-5 ,	0.000 ,	0.000 ,	0.000
173.5,	961.5,	0.9461,	0.291E-04,	3.907,	1.137 ,	-.7909E-5 ,	0.000 ,	0.000 ,	0.000
181.0,	961.1,	0.9499,	0.00 ,	3.907,	0.000 ,	-.7633E-5 ,	0.000 ,	0.000 ,	0.000

'dualfoil5.out' file

Time (min)	Util N x	Util P y	Cell Pot (V)	Uocp (V)	Curr (A/m2)	Temp (C)	heatgen (W/m2)
0.000,	0.5930,	0.5300,	4.00325,	4.00893,	10.00,	24.85,	0.06,
0.001,	0.5930,	0.5300,	4.00312,	4.00892,	10.00,	24.85,	0.06,
0.001,	0.5930,	0.5300,	4.00303,	4.00892,	10.00,	24.85,	0.06,
0.001,	0.5930,	0.5300,	4.00295,	4.00892,	10.00,	24.85,	0.06,
0.002,	0.5930,	0.5300,	4.00287,	4.00891,	10.00,	24.85,	0.06,
0.002,	0.5930,	0.5300,	4.00280,	4.00891,	10.00,	24.85,	0.06,
0.003,	0.5930,	0.5300,	4.00273,	4.00890,	10.00,	24.85,	0.06,
0.003,	0.5930,	0.5300,	4.00266,	4.00890,	10.00,	24.85,	0.06,
0.004,	0.5930,	0.5300,	4.00259,	4.00889,	10.00,	24.85,	0.06,
0.005,	0.5930,	0.5300,	4.00252,	4.00889,	10.00,	24.85,	0.06,
0.006,	0.5930,	0.5300,	4.00245,	4.00888,	10.00,	24.85,	0.06,
0.007,	0.5930,	0.5300,	4.00238,	4.00887,	10.00,	24.85,	0.06,
0.007,	0.5930,	0.5300,	4.00231,	4.00887,	10.00,	24.85,	0.07,

0.009, 0.5930, 0.5300, 4.00223, 4.00886, 10.00, 24.85, 0.07,
0.010, 0.5930, 0.5300, 4.00216, 4.00885, 10.00, 24.85, 0.07,
0.011, 0.5929, 0.5300, 4.00208, 4.00884, 10.00, 24.85, 0.07,
0.012, 0.5929, 0.5300, 4.00199, 4.00883, 10.00, 24.85, 0.07,
0.014, 0.5929, 0.5301, 4.00191, 4.00881, 10.00, 24.85, 0.07,
0.016, 0.5929, 0.5301, 4.00182, 4.00880, 10.00, 24.85, 0.07,
0.017, 0.5929, 0.5301, 4.00172, 4.00878, 10.00, 24.85, 0.07,
0.019, 0.5929, 0.5301, 4.00163, 4.00877, 10.00, 24.85, 0.07,
0.022, 0.5929, 0.5301, 4.00153, 4.00875, 10.00, 24.85, 0.07,
0.024, 0.5929, 0.5301, 4.00142, 4.00873, 10.00, 24.85, 0.07,
0.027, 0.5929, 0.5301, 4.00131, 4.00870, 10.00, 24.85, 0.07,
0.030, 0.5929, 0.5301, 4.00120, 4.00868, 10.00, 24.85, 0.07,
0.033, 0.5928, 0.5301, 4.00108, 4.00865, 10.00, 24.85, 0.08,
0.037, 0.5928, 0.5301, 4.00095, 4.00862, 10.00, 24.85, 0.08,
0.041, 0.5928, 0.5302, 4.00082, 4.00859, 10.00, 24.85, 0.08,
0.045, 0.5928, 0.5302, 4.00069, 4.00856, 10.00, 24.85, 0.08,
0.050, 0.5928, 0.5302, 4.00054, 4.00852, 10.00, 24.85, 0.08,
0.055, 0.5927, 0.5302, 4.00040, 4.00847, 10.00, 24.85, 0.08,
0.061, 0.5927, 0.5302, 4.00024, 4.00843, 10.00, 24.85, 0.08,
0.067, 0.5927, 0.5303, 4.00008, 4.00837, 10.00, 24.85, 0.08,
0.074, 0.5926, 0.5303, 3.99991, 4.00832, 10.00, 24.85, 0.08,
0.082, 0.5926, 0.5303, 3.99973, 4.00826, 10.00, 24.85, 0.09,
0.091, 0.5926, 0.5303, 3.99955, 4.00819, 10.00, 24.85, 0.09,
0.100, 0.5925, 0.5304, 3.99936, 4.00812, 10.00, 24.85, 0.09,
0.110, 0.5925, 0.5304, 3.99916, 4.00804, 10.00, 24.85, 0.09,
0.122, 0.5924, 0.5305, 3.99896, 4.00795, 10.00, 24.85, 0.09,
0.134, 0.5924, 0.5305, 3.99875, 4.00785, 10.00, 24.85, 0.09,
0.148, 0.5923, 0.5306, 3.99853, 4.00775, 10.00, 24.85, 0.09,
0.163, 0.5922, 0.5306, 3.99830, 4.00764, 10.00, 24.85, 0.09,
0.180, 0.5921, 0.5307, 3.99806, 4.00751, 10.00, 24.85, 0.09,
0.198, 0.5920, 0.5307, 3.99782, 4.00738, 10.00, 24.85, 0.10,
0.218, 0.5919, 0.5308, 3.99757, 4.00724, 10.00, 24.85, 0.10,
0.240, 0.5918, 0.5309, 3.99732, 4.00708, 10.00, 24.86, 0.10,
0.264, 0.5917, 0.5310, 3.99706, 4.00691, 10.00, 24.86, 0.10,
0.291, 0.5916, 0.5311, 3.99679, 4.00673, 10.00, 24.86, 0.10,
0.320, 0.5915, 0.5312, 3.99652, 4.00654, 10.00, 24.86, 0.10,
0.353, 0.5913, 0.5313, 3.99625, 4.00633, 10.00, 24.86, 0.10,
0.388, 0.5911, 0.5315, 3.99597, 4.00610, 10.00, 24.86, 0.10,
0.427, 0.5909, 0.5316, 3.99569, 4.00586, 10.00, 24.86, 0.10,
0.470, 0.5907, 0.5318, 3.99541, 4.00561, 10.00, 24.86, 0.10,
0.518, 0.5905, 0.5320, 3.99513, 4.00534, 10.00, 24.86, 0.10,
0.570, 0.5902, 0.5322, 3.99484, 4.00505, 10.00, 24.86, 0.10,
0.627, 0.5900, 0.5324, 3.99456, 4.00476, 10.00, 24.86, 0.10,
0.690, 0.5897, 0.5326, 3.99427, 4.00444, 10.00, 24.87, 0.10,

0.760, 0.5893, 0.5329,   3.99399,   4.00411,   10.00,   24.87,   0.10,

0.836, 0.5890, 0.5332,   3.99370,   4.00377,   10.00,   24.87,   0.10,

0.920, 0.5886, 0.5335,   3.99341,   4.00342,   10.00,   24.87,   0.10,

1.012, 0.5881, 0.5338,   3.99311,   4.00306,   10.00,   24.87,   0.10,

1.113, 0.5876, 0.5342,   3.99281,   4.00269,   10.00,   24.88,   0.10,

1.225, 0.5871, 0.5346,   3.99249,   4.00231,   10.00,   24.88,   0.10,

1.348, 0.5865, 0.5351,   3.99216,   4.00192,   10.00,   24.88,   0.10,

1.483, 0.5858, 0.5356,   3.99181,   4.00153,   10.00,   24.89,   0.10,

1.632, 0.5851, 0.5362,   3.99144,   4.00113,   10.00,   24.89,   0.10,

1.795, 0.5843, 0.5368,   3.99103,   4.00071,   10.00,   24.89,   0.10,

1.975, 0.5834, 0.5375,   3.99057,   4.00028,   10.00,   24.90,   0.10,

2.173, 0.5825, 0.5382,   3.99005,   3.99982,   10.00,   24.90,   0.10,

2.390, 0.5814, 0.5391,   3.98944,   3.99933,   10.00,   24.91,   0.10,

2.629, 0.5803, 0.5400,   3.98874,   3.99878,   10.00,   24.91,   0.10,

2.893, 0.5790, 0.5410,   3.98789,   3.99816,   10.00,   24.92,   0.10,

3.182, 0.5776, 0.5421,   3.98685,   3.99743,   10.00,   24.93,   0.11,

3.501, 0.5761, 0.5433,   3.98558,   3.99654,   10.00,   24.93,   0.11,

3.851, 0.5744, 0.5446,   3.98398,   3.99544,   10.00,   24.94,   0.11,

4.202, 0.5727, 0.5459,   3.98216,   3.99418,   10.00,   24.95,   0.12,

4.552, 0.5710, 0.5472,   3.98008,   3.99274,   10.00,   24.97,   0.13,

4.902, 0.5693, 0.5486,   3.97774,   3.99108,   10.00,   24.98,   0.13,

5.253, 0.5676, 0.5499,   3.97512,   3.98919,   10.00,   24.99,   0.14,

5.603, 0.5659, 0.5512,   3.97219,   3.98705,   10.00,   25.00,   0.15,

5.954, 0.5642, 0.5526,   3.96897,   3.98462,   10.00,   25.01,   0.16,

6.304, 0.5625, 0.5539,   3.96545,   3.98191,   10.00,   25.03,   0.16,

6.654, 0.5608, 0.5552,   3.96165,   3.97890,   10.00,   25.04,   0.17,

7.005, 0.5591, 0.5565,   3.95758,   3.97560,   10.00,   25.06,   0.18,

7.355, 0.5574, 0.5579,   3.95328,   3.97200,   10.00,   25.07,   0.19,

7.705, 0.5557, 0.5592,   3.94876,   3.96812,   10.00,   25.09,   0.19,

8.056, 0.5540, 0.5605,   3.94409,   3.96399,   10.00,   25.11,   0.20,

8.406, 0.5523, 0.5619,   3.93931,   3.95963,   10.00,   25.12,   0.20,

8.757, 0.5506, 0.5632,   3.93447,   3.95507,   10.00,   25.14,   0.21,

9.107, 0.5489, 0.5645,   3.92961,   3.95038,   10.00,   25.16,   0.21,

9.457, 0.5473, 0.5658,   3.92480,   3.94558,   10.00,   25.18,   0.21,

9.808, 0.5456, 0.5672,   3.92008,   3.94075,   10.00,   25.20,   0.21,

10.158, 0.5439, 0.5685,   3.91549,   3.93592,   10.00,   25.21,   0.20,

10.509, 0.5422, 0.5698,   3.91107,   3.93115,   10.00,   25.23,   0.20,

10.859, 0.5405, 0.5711,   3.90684,   3.92648,   10.00,   25.25,   0.20,

11.209, 0.5388, 0.5725,   3.90283,   3.92196,   10.00,   25.26,   0.19,

11.560, 0.5371, 0.5738,   3.89905,   3.91761,   10.00,   25.28,   0.19,

11.910, 0.5354, 0.5751,   3.89549,   3.91347,   10.00,   25.29,   0.18,

12.260, 0.5337, 0.5765,   3.89217,   3.90954,   10.00,   25.31,   0.17,

12.611, 0.5320, 0.5778,   3.88906,   3.90584,   10.00,   25.32,   0.17,

12.961, 0.5303, 0.5791,   3.88616,   3.90236,   10.00,   25.34,   0.16,

13.312, 0.5286, 0.5804, 3.88344, 3.89911, 10.00, 25.35, 0.16,
13.662, 0.5269, 0.5818, 3.88090, 3.89607, 10.00, 25.36, 0.15,
14.012, 0.5252, 0.5831, 3.87851, 3.89323, 10.00, 25.38, 0.15,
14.363, 0.5235, 0.5844, 3.87625, 3.89058, 10.00, 25.39, 0.14,
14.713, 0.5218, 0.5858, 3.87410, 3.88808, 10.00, 25.40, 0.14,
15.064, 0.5201, 0.5871, 3.87205, 3.88573, 10.00, 25.41, 0.14,
15.414, 0.5184, 0.5884, 3.87007, 3.88350, 10.00, 25.42, 0.14,
15.764, 0.5167, 0.5897, 3.86816, 3.88138, 10.00, 25.43, 0.13,
16.115, 0.5150, 0.5911, 3.86629, 3.87935, 10.00, 25.45, 0.13,
16.465, 0.5134, 0.5924, 3.86446, 3.87739, 10.00, 25.46, 0.13,
16.815, 0.5117, 0.5937, 3.86266, 3.87548, 10.00, 25.47, 0.13,
17.166, 0.5100, 0.5950, 3.86087, 3.87362, 10.00, 25.48, 0.13,
17.516, 0.5083, 0.5964, 3.85910, 3.87179, 10.00, 25.49, 0.13,
17.867, 0.5066, 0.5977, 3.85733, 3.86999, 10.00, 25.50, 0.13,
18.217, 0.5049, 0.5990, 3.85556, 3.86819, 10.00, 25.51, 0.13,
18.567, 0.5032, 0.6004, 3.85379, 3.86641, 10.00, 25.52, 0.13,
18.918, 0.5015, 0.6017, 3.85202, 3.86463, 10.00, 25.53, 0.13,
19.268, 0.4998, 0.6030, 3.85025, 3.86285, 10.00, 25.54, 0.13,
19.619, 0.4981, 0.6043, 3.84847, 3.86107, 10.00, 25.55, 0.13,
19.969, 0.4964, 0.6057, 3.84669, 3.85929, 10.00, 25.57, 0.13,
20.319, 0.4947, 0.6070, 3.84490, 3.85750, 10.00, 25.58, 0.13,
20.670, 0.4930, 0.6083, 3.84312, 3.85571, 10.00, 25.59, 0.13,
21.020, 0.4913, 0.6097, 3.84134, 3.85391, 10.00, 25.60, 0.13,
21.370, 0.4896, 0.6110, 3.83955, 3.85211, 10.00, 25.61, 0.13,
21.721, 0.4879, 0.6123, 3.83777, 3.85031, 10.00, 25.62, 0.13,
22.071, 0.4862, 0.6136, 3.83599, 3.84851, 10.00, 25.63, 0.13,
22.422, 0.4845, 0.6150, 3.83422, 3.84672, 10.00, 25.64, 0.12,
22.772, 0.4828, 0.6163, 3.83245, 3.84492, 10.00, 25.65, 0.12,
23.122, 0.4812, 0.6176, 3.83069, 3.84313, 10.00, 25.66, 0.12,
23.473, 0.4795, 0.6189, 3.82893, 3.84134, 10.00, 25.67, 0.12,
23.823, 0.4778, 0.6203, 3.82718, 3.83955, 10.00, 25.68, 0.12,
24.174, 0.4761, 0.6216, 3.82544, 3.83778, 10.00, 25.69, 0.12,
24.524, 0.4744, 0.6229, 3.82371, 3.83601, 10.00, 25.70, 0.12,
24.874, 0.4727, 0.6243, 3.82198, 3.83424, 10.00, 25.71, 0.12,
25.225, 0.4710, 0.6256, 3.82026, 3.83249, 10.00, 25.72, 0.12,
25.575, 0.4693, 0.6269, 3.81855, 3.83074, 10.00, 25.73, 0.12,
25.925, 0.4676, 0.6282, 3.81684, 3.82900, 10.00, 25.75, 0.12,
26.276, 0.4659, 0.6296, 3.81515, 3.82727, 10.00, 25.76, 0.12,
26.626, 0.4642, 0.6309, 3.81346, 3.82555, 10.00, 25.77, 0.12,
26.977, 0.4625, 0.6322, 3.81178, 3.82383, 10.00, 25.78, 0.12,
27.327, 0.4608, 0.6336, 3.81011, 3.82213, 10.00, 25.79, 0.12,
27.677, 0.4591, 0.6349, 3.80845, 3.82043, 10.00, 25.80, 0.12,
28.028, 0.4574, 0.6362, 3.80679, 3.81874, 10.00, 25.81, 0.12,
28.378, 0.4557, 0.6375, 3.80514, 3.81706, 10.00, 25.82, 0.12,

28.729, 0.4540, 0.6389,   3.80350,   3.81539,   10.00,   25.83,   0.12,
29.079, 0.4523, 0.6402,   3.80187,   3.81373,   10.00,   25.84,   0.12,
29.429, 0.4506, 0.6415,   3.80025,   3.81207,   10.00,   25.85,   0.12,
29.780, 0.4489, 0.6428,   3.79863,   3.81042,   10.00,   25.86,   0.12,
30.130, 0.4473, 0.6442,   3.79702,   3.80879,   10.00,   25.87,   0.12,
30.480, 0.4456, 0.6455,   3.79542,   3.80716,   10.00,   25.88,   0.12,
30.831, 0.4439, 0.6468,   3.79383,   3.80554,   10.00,   25.89,   0.12,
31.181, 0.4422, 0.6482,   3.79225,   3.80393,   10.00,   25.90,   0.12,
31.532, 0.4405, 0.6495,   3.79068,   3.80233,   10.00,   25.91,   0.12,
31.882, 0.4388, 0.6508,   3.78912,   3.80074,   10.00,   25.92,   0.12,
32.232, 0.4371, 0.6521,   3.78756,   3.79915,   10.00,   25.93,   0.12,
32.583, 0.4354, 0.6535,   3.78602,   3.79758,   10.00,   25.94,   0.12,
32.933, 0.4337, 0.6548,   3.78449,   3.79602,   10.00,   25.95,   0.11,
33.284, 0.4320, 0.6561,   3.78297,   3.79447,   10.00,   25.96,   0.11,
33.634, 0.4303, 0.6575,   3.78146,   3.79292,   10.00,   25.97,   0.11,
33.984, 0.4286, 0.6588,   3.77996,   3.79139,   10.00,   25.98,   0.11,
34.335, 0.4269, 0.6601,   3.77847,   3.78987,   10.00,   25.99,   0.11,
34.685, 0.4252, 0.6614,   3.77700,   3.78837,   10.00,   25.99,   0.11,
35.035, 0.4235, 0.6628,   3.77553,   3.78687,   10.00,   26.00,   0.11,
35.386, 0.4218, 0.6641,   3.77408,   3.78538,   10.00,   26.01,   0.11,
35.736, 0.4201, 0.6654,   3.77264,   3.78391,   10.00,   26.02,   0.11,
36.087, 0.4184, 0.6667,   3.77122,   3.78245,   10.00,   26.03,   0.11,
36.437, 0.4167, 0.6681,   3.76981,   3.78100,   10.00,   26.04,   0.11,
36.787, 0.4151, 0.6694,   3.76841,   3.77956,   10.00,   26.05,   0.11,
37.138, 0.4134, 0.6707,   3.76702,   3.77814,   10.00,   26.06,   0.11,
37.488, 0.4117, 0.6721,   3.76565,   3.77673,   10.00,   26.07,   0.11,
37.839, 0.4100, 0.6734,   3.76429,   3.77533,   10.00,   26.08,   0.11,
38.189, 0.4083, 0.6747,   3.76295,   3.77395,   10.00,   26.09,   0.11,
38.539, 0.4066, 0.6760,   3.76163,   3.77258,   10.00,   26.10,   0.11,
38.890, 0.4049, 0.6774,   3.76031,   3.77123,   10.00,   26.11,   0.11,
39.240, 0.4032, 0.6787,   3.75902,   3.76989,   10.00,   26.12,   0.11,
39.590, 0.4015, 0.6800,   3.75773,   3.76856,   10.00,   26.13,   0.11,
39.941, 0.3998, 0.6814,   3.75647,   3.76725,   10.00,   26.14,   0.11,
40.291, 0.3981, 0.6827,   3.75522,   3.76595,   10.00,   26.15,   0.11,
40.642, 0.3964, 0.6840,   3.75398,   3.76467,   10.00,   26.15,   0.11,
40.992, 0.3947, 0.6853,   3.75276,   3.76340,   10.00,   26.16,   0.11,
41.342, 0.3930, 0.6867,   3.75156,   3.76215,   10.00,   26.17,   0.11,
41.693, 0.3913, 0.6880,   3.75037,   3.76091,   10.00,   26.18,   0.11,
42.043, 0.3896, 0.6893,   3.74920,   3.75969,   10.00,   26.19,   0.10,
42.394, 0.3879, 0.6906,   3.74804,   3.75849,   10.00,   26.20,   0.10,
42.744, 0.3862, 0.6920,   3.74690,   3.75729,   10.00,   26.21,   0.10,
43.094, 0.3845, 0.6933,   3.74578,   3.75612,   10.00,   26.22,   0.10,
43.445, 0.3828, 0.6946,   3.74468,   3.75496,   10.00,   26.23,   0.10,
43.795, 0.3812, 0.6960,   3.74359,   3.75382,   10.00,   26.23,   0.10,

44.145, 0.3795, 0.6973,   3.74252,   3.75269,   10.00,   26.24,   0.10,
44.496, 0.3778, 0.6986,   3.74146,   3.75158,   10.00,   26.25,   0.10,
44.846, 0.3761, 0.6999,   3.74042,   3.75048,   10.00,   26.26,   0.10,
45.197, 0.3744, 0.7013,   3.73940,   3.74941,   10.00,   26.27,   0.10,
45.547, 0.3727, 0.7026,   3.73840,   3.74834,   10.00,   26.28,   0.10,
45.897, 0.3710, 0.7039,   3.73741,   3.74730,   10.00,   26.29,   0.10,
46.248, 0.3693, 0.7053,   3.73643,   3.74627,   10.00,   26.29,   0.10,
46.598, 0.3676, 0.7066,   3.73548,   3.74525,   10.00,   26.30,   0.10,
46.949, 0.3659, 0.7079,   3.73454,   3.74425,   10.00,   26.31,   0.10,
47.299, 0.3642, 0.7092,   3.73361,   3.74327,   10.00,   26.32,   0.10,
47.649, 0.3625, 0.7106,   3.73270,   3.74230,   10.00,   26.33,   0.10,
48.000, 0.3608, 0.7119,   3.73180,   3.74135,   10.00,   26.34,   0.10,
48.350, 0.3591, 0.7132,   3.73092,   3.74042,   10.00,   26.34,   0.10,
48.700, 0.3574, 0.7145,   3.73005,   3.73950,   10.00,   26.35,   0.10,
49.051, 0.3557, 0.7159,   3.72920,   3.73860,   10.00,   26.36,   0.09,
49.401, 0.3540, 0.7172,   3.72836,   3.73771,   10.00,   26.37,   0.09,
49.752, 0.3523, 0.7185,   3.72752,   3.73684,   10.00,   26.38,   0.09,
50.102, 0.3506, 0.7199,   3.72671,   3.73599,   10.00,   26.38,   0.09,
50.452, 0.3490, 0.7212,   3.72590,   3.73515,   10.00,   26.39,   0.09,
50.803, 0.3473, 0.7225,   3.72510,   3.73432,   10.00,   26.40,   0.09,
51.153, 0.3456, 0.7238,   3.72431,   3.73351,   10.00,   26.41,   0.09,
51.504, 0.3439, 0.7252,   3.72354,   3.73272,   10.00,   26.42,   0.09,
51.854, 0.3422, 0.7265,   3.72277,   3.73194,   10.00,   26.42,   0.09,
52.204, 0.3405, 0.7278,   3.72201,   3.73118,   10.00,   26.43,   0.09,
52.555, 0.3388, 0.7291,   3.72126,   3.73042,   10.00,   26.44,   0.09,
52.905, 0.3371, 0.7305,   3.72052,   3.72969,   10.00,   26.45,   0.09,
53.255, 0.3354, 0.7318,   3.71979,   3.72897,   10.00,   26.45,   0.09,
53.606, 0.3337, 0.7331,   3.71907,   3.72826,   10.00,   26.46,   0.09,
53.956, 0.3320, 0.7345,   3.71836,   3.72756,   10.00,   26.47,   0.09,
54.307, 0.3303, 0.7358,   3.71766,   3.72688,   10.00,   26.48,   0.09,
54.657, 0.3286, 0.7371,   3.71697,   3.72621,   10.00,   26.49,   0.09,
55.007, 0.3269, 0.7384,   3.71628,   3.72555,   10.00,   26.49,   0.09,
55.358, 0.3252, 0.7398,   3.71560,   3.72490,   10.00,   26.50,   0.09,
55.708, 0.3235, 0.7411,   3.71494,   3.72427,   10.00,   26.51,   0.09,
56.059, 0.3218, 0.7424,   3.71428,   3.72364,   10.00,   26.52,   0.09,
56.409, 0.3201, 0.7438,   3.71363,   3.72303,   10.00,   26.52,   0.09,
56.759, 0.3184, 0.7451,   3.71298,   3.72242,   10.00,   26.53,   0.09,
57.110, 0.3167, 0.7464,   3.71235,   3.72183,   10.00,   26.54,   0.09,
57.460, 0.3151, 0.7477,   3.71172,   3.72124,   10.00,   26.55,   0.09,
57.810, 0.3134, 0.7491,   3.71110,   3.72066,   10.00,   26.56,   0.09,
58.161, 0.3117, 0.7504,   3.71049,   3.72009,   10.00,   26.56,   0.09,
58.511, 0.3100, 0.7517,   3.70989,   3.71953,   10.00,   26.57,   0.09,
58.862, 0.3083, 0.7530,   3.70930,   3.71897,   10.00,   26.58,   0.09,
59.212, 0.3066, 0.7544,   3.70871,   3.71842,   10.00,   26.59,   0.09,

59.562, 0.3049, 0.7557, 3.70813, 3.71788, 10.00, 26.60, 0.09,
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62.015, 0.2930, 0.7650, 3.70422, 3.71414, 10.00, 26.65, 0.10,
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66.920, 0.2693, 0.7836, 3.69661, 3.70638, 10.00, 26.77, 0.10,
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67.972, 0.2642, 0.7876, 3.69479, 3.70452, 10.00, 26.80, 0.10,
68.322, 0.2625, 0.7889, 3.69416, 3.70388, 10.00, 26.81, 0.10,
68.672, 0.2608, 0.7902, 3.69352, 3.70323, 10.00, 26.81, 0.10,
69.023, 0.2591, 0.7916, 3.69286, 3.70257, 10.00, 26.82, 0.10,
69.373, 0.2574, 0.7929, 3.69218, 3.70189, 10.00, 26.83, 0.10,
69.723, 0.2557, 0.7942, 3.69149, 3.70120, 10.00, 26.84, 0.10,
70.074, 0.2540, 0.7955, 3.69078, 3.70050, 10.00, 26.85, 0.10,
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71.125, 0.2490, 0.7995, 3.68856, 3.69831, 10.00, 26.87, 0.10,
71.475, 0.2473, 0.8008, 3.68778, 3.69756, 10.00, 26.88, 0.10,
71.826, 0.2456, 0.8022, 3.68699, 3.69679, 10.00, 26.89, 0.10,
72.176, 0.2439, 0.8035, 3.68619, 3.69600, 10.00, 26.90, 0.10,
72.527, 0.2422, 0.8048, 3.68537, 3.69520, 10.00, 26.91, 0.10,
72.877, 0.2405, 0.8062, 3.68453, 3.69439, 10.00, 26.92, 0.10,
73.227, 0.2388, 0.8075, 3.68368, 3.69356, 10.00, 26.93, 0.10,
73.578, 0.2371, 0.8088, 3.68281, 3.69272, 10.00, 26.93, 0.10,
73.928, 0.2354, 0.8101, 3.68193, 3.69186, 10.00, 26.94, 0.10,
74.278, 0.2337, 0.8115, 3.68103, 3.69099, 10.00, 26.95, 0.10,
74.629, 0.2320, 0.8128, 3.68012, 3.69011, 10.00, 26.96, 0.10,

74.979, 0.2303, 0.8141,   3.67919,   3.68921,   10.00,   26.97,   0.10,
75.330, 0.2286, 0.8155,   3.67825,   3.68830,   10.00,   26.98,   0.10,
75.680, 0.2269, 0.8168,   3.67730,   3.68737,   10.00,   26.99,   0.10,
76.030, 0.2252, 0.8181,   3.67633,   3.68644,   10.00,   26.99,   0.10,
76.381, 0.2235, 0.8194,   3.67535,   3.68548,   10.00,   27.00,   0.10,
76.731, 0.2218, 0.8208,   3.67436,   3.68452,   10.00,   27.01,   0.10,
77.082, 0.2201, 0.8221,   3.67336,   3.68354,   10.00,   27.02,   0.10,
77.432, 0.2184, 0.8234,   3.67234,   3.68256,   10.00,   27.03,   0.10,
77.782, 0.2167, 0.8247,   3.67131,   3.68156,   10.00,   27.04,   0.10,
78.133, 0.2151, 0.8261,   3.67028,   3.68055,   10.00,   27.05,   0.10,
78.483, 0.2134, 0.8274,   3.66923,   3.67952,   10.00,   27.06,   0.10,
78.833, 0.2117, 0.8287,   3.66818,   3.67849,   10.00,   27.06,   0.10,
79.184, 0.2100, 0.8301,   3.66711,   3.67745,   10.00,   27.07,   0.10,
79.534, 0.2083, 0.8314,   3.66604,   3.67640,   10.00,   27.08,   0.10,
79.885, 0.2066, 0.8327,   3.66496,   3.67534,   10.00,   27.09,   0.10,
80.235, 0.2049, 0.8340,   3.66387,   3.67427,   10.00,   27.10,   0.10,
80.585, 0.2032, 0.8354,   3.66277,   3.67319,   10.00,   27.11,   0.10,
80.936, 0.2015, 0.8367,   3.66166,   3.67210,   10.00,   27.12,   0.10,
81.286, 0.1998, 0.8380,   3.66055,   3.67101,   10.00,   27.13,   0.10,
81.637, 0.1981, 0.8394,   3.65944,   3.66991,   10.00,   27.14,   0.10,
81.987, 0.1964, 0.8407,   3.65832,   3.66880,   10.00,   27.14,   0.10,
82.337, 0.1947, 0.8420,   3.65719,   3.66769,   10.00,   27.15,   0.10,
82.688, 0.1930, 0.8433,   3.65606,   3.66657,   10.00,   27.16,   0.11,
83.038, 0.1913, 0.8447,   3.65493,   3.66544,   10.00,   27.17,   0.11,
83.388, 0.1896, 0.8460,   3.65379,   3.66431,   10.00,   27.18,   0.11,
83.739, 0.1879, 0.8473,   3.65265,   3.66318,   10.00,   27.19,   0.11,
84.089, 0.1862, 0.8486,   3.65150,   3.66204,   10.00,   27.20,   0.11,
84.440, 0.1845, 0.8500,   3.65036,   3.66090,   10.00,   27.21,   0.11,
84.790, 0.1829, 0.8513,   3.64921,   3.65976,   10.00,   27.22,   0.11,
85.140, 0.1812, 0.8526,   3.64806,   3.65861,   10.00,   27.22,   0.11,
85.491, 0.1795, 0.8540,   3.64690,   3.65746,   10.00,   27.23,   0.11,
85.841, 0.1778, 0.8553,   3.64575,   3.65631,   10.00,   27.24,   0.11,
86.192, 0.1761, 0.8566,   3.64459,   3.65516,   10.00,   27.25,   0.11,
86.542, 0.1744, 0.8579,   3.64343,   3.65400,   10.00,   27.26,   0.11,
86.892, 0.1727, 0.8593,   3.64227,   3.65285,   10.00,   27.27,   0.11,
87.243, 0.1710, 0.8606,   3.64111,   3.65169,   10.00,   27.28,   0.11,
87.593, 0.1693, 0.8619,   3.63994,   3.65053,   10.00,   27.29,   0.11,
87.943, 0.1676, 0.8633,   3.63877,   3.64936,   10.00,   27.30,   0.11,
88.294, 0.1659, 0.8646,   3.63760,   3.64820,   10.00,   27.31,   0.11,
88.644, 0.1642, 0.8659,   3.63642,   3.64703,   10.00,   27.32,   0.11,
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89.695, 0.1591, 0.8699,   3.63285,   3.64351,   10.00,   27.34,   0.11,
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91.447, 0.1506, 0.8765,   3.62672,   3.63751,   10.00,   27.39,   0.11,
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92.148, 0.1473, 0.8792,   3.62417,   3.63504,   10.00,   27.41,   0.11,
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92.849, 0.1439, 0.8818,   3.62157,   3.63252,   10.00,   27.43,   0.11,
93.199, 0.1422, 0.8832,   3.62026,   3.63124,   10.00,   27.43,   0.11,
93.550, 0.1405, 0.8845,   3.61893,   3.62995,   10.00,   27.44,   0.11,
93.900, 0.1388, 0.8858,   3.61760,   3.62864,   10.00,   27.45,   0.11,
94.250, 0.1371, 0.8872,   3.61627,   3.62732,   10.00,   27.46,   0.11,
94.601, 0.1354, 0.8885,   3.61495,   3.62599,   10.00,   27.47,   0.11,
94.951, 0.1337, 0.8898,   3.61364,   3.62465,   10.00,   27.48,   0.11,
95.302, 0.1320, 0.8911,   3.61236,   3.62332,   10.00,   27.49,   0.11,
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96.353, 0.1269, 0.8951,   3.60875,   3.61940,   10.00,   27.52,   0.11,
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109.667, 0.0625, 0.9456, 3.58990, 3.59953, 10.00, 27.80, 0.10,

110.018, 0.0608, 0.9469, 3.58905, 3.59886, 10.00, 27.81, 0.10,

110.368, 0.0591, 0.9482, 3.58810, 3.59814, 10.00, 27.82, 0.10,

110.718, 0.0574, 0.9496, 3.58706, 3.59735, 10.00, 27.83, 0.10,

111.069, 0.0557, 0.9509, 3.58589, 3.59649, 10.00, 27.83, 0.11,

111.419, 0.0540, 0.9522, 3.58457, 3.59554, 10.00, 27.84, 0.11,

111.770, 0.0523, 0.9535, 3.58307, 3.59449, 10.00, 27.85, 0.12,

112.120, 0.0506, 0.9549, 3.58134, 3.59330, 10.00, 27.86, 0.12,

112.470, 0.0490, 0.9562, 3.57934, 3.59196, 10.00, 27.87, 0.13,

112.821, 0.0473, 0.9575, 3.57701, 3.59042, 10.00, 27.89, 0.13,

113.171, 0.0456, 0.9588, 3.57427, 3.58866, 10.00, 27.90, 0.14,

113.522, 0.0439, 0.9602, 3.57103, 3.58661, 10.00, 27.91, 0.16,

113.872, 0.0422, 0.9615, 3.56717, 3.58422, 10.00, 27.93, 0.17,

114.222, 0.0405, 0.9628, 3.56257, 3.58140, 10.00, 27.94, 0.19,

114.573, 0.0388, 0.9642, 3.55705, 3.57808, 10.00, 27.96, 0.21,

114.923, 0.0371, 0.9655, 3.55042, 3.57413, 10.00, 27.98, 0.24,

115.273, 0.0354, 0.9668, 3.54242, 3.56941, 10.00, 28.00, 0.27,

115.624, 0.0337, 0.9681, 3.53276, 3.56376, 10.00, 28.03, 0.31,

115.974, 0.0320, 0.9695, 3.52105, 3.55696, 10.00, 28.06, 0.36,

116.325, 0.0303, 0.9708, 3.50685, 3.54877, 10.00, 28.10, 0.42,

116.675, 0.0286, 0.9721, 3.48960, 3.53887, 10.00, 28.14, 0.49,

117.025, 0.0269, 0.9735, 3.46861, 3.52688, 10.00, 28.19, 0.58,

117.376, 0.0252, 0.9748, 3.44307, 3.51234, 10.00, 28.25, 0.69,

117.726, 0.0235, 0.9761, 3.43195, 3.49468, 10.00, 28.32, 0.83,

118.077, 0.0218, 0.9774, 3.42400, 3.47319, 10.00, 28.40, 0.99,

118.427, 0.0201, 0.9788, 3.40769, 3.44704, 10.00, 28.50, 1.19,

118.777, 0.0184, 0.9801, 3.37117, 3.41518, 10.00, 28.63, 1.44,

119.128, 0.0168, 0.9814, 3.33214, 3.37632, 10.00, 28.78, 1.74,

119.478, 0.0151, 0.9827, 3.29779, 3.32892, 10.00, 28.96, 2.11,

119.828, 0.0134, 0.9841, 3.24471, 3.27105, 10.00, 29.17, 2.56,

120.000, 0.0125, 0.9847, 3.23620, 3.23822, 10.00, 29.29, 2.82,