

MATHEMATISCH CENTRUM

2e BOERHAAVESTRAAT 49

AMSTERDAM

REKENAFDELING

Leiding: Prof. Dr Ir A. van Wijngaarden

OMZETTING VAN GRADEN, MINUTEN EN SECONDEN IN CENTIGRADEN

Rapport R 234.

1 9 5 4 .

OMZETTING VAN GRADEN, MINUTEN EN SECONDEN IN CENTIGRADEN

Dit werk bevat 2 tabellen te weten:

- 1<sup>o</sup>. Op de pagina's 3 tot en met 92 bij een argument gegeven in graden en minuten het bijbehorende aantal centigraden, opgegeven in 7 decimalen.
- 2<sup>o</sup>. Op de pagina 93 bij een gegeven aantal boogseconden (0 (1) 60) het bijbehorende aantal centigraden, eveneens in 7 decimalen.

0	0.00000000
1	0.0135185
2	0.0370370
3	0.0555556
4	0.0740741
5	0.0925926
6	0.1111111
7	0.1296296
8	0.1481481
9	0.1666667
10	0.1851852
11	0.2037037
12	0.2222222
13	0.2407407
14	0.2592593
15	0.2777778
16	0.2962963
17	0.3148148
18	0.3333333
19	0.3518519
20	0.3703704
21	0.3888889
22	0.4074074
23	0.4259259
24	0.4444444
25	0.4629630
26	0.4814815
27	0.5000000
28	0.5185185
29	0.5370370
30	0.5555556

30	0.5555556
31	0.5740741
32	0.5925926
33	0.6111111
34	0.6296296
35	0.6481481
36	0.6666667
37	0.6851852
38	0.7037037
39	0.7222222
40	0.7407407
41	0.7592593
42	0.7777778
43	0.7962963
44	0.8148148
45	0.8333333
46	0.8518519
47	0.8703704
48	0.8888889
49	0.9074074
50	0.9259259
51	0.9444444
52	0.9629630
53	0.9814815
54	1.0000000
55	1.0185185
56	1.0370370
57	1.0555556
58	1.0740741
59	1.0925926
60	1.1111111

1°	0'	1.1 1 1 1 1 1 1
	1	1.1 2 9 6 2 9 6
	2	1.1 4 8 1 4 8 1
	3	1.1 6 6 6 6 6 7
	4	1.1 8 5 1 8 5 2
	5	1.2 0 3 7 0 3 7
	6	1.2 2 2 2 2 2 2
	7	1.2 4 0 7 4 0 7
	8	1.2 5 9 2 5 9 3
	9	1.2 7 7 7 7 7 8
	10	1.2 9 6 2 9 6 3
	11	1.3 1 4 8 1 4 8
	12	1.3 3 3 3 3 3 3
	13	1.3 5 1 8 5 1 9
	14	1.3 7 0 3 7 0 4
	15	1.3 8 8 8 8 8 9
	16	1.4 0 7 4 0 7 4
	17	1.4 2 5 9 2 5 9
	18	1.4 4 4 4 4 4 4
	19	1.4 6 2 9 6 3 0
	20	1.4 8 1 4 8 1 5
	21	1.5 0 0 0 0 0 0
	22	1.5 1 8 5 1 8 5
	23	1.5 3 7 0 3 7 0
	24	1.5 5 5 5 5 5 6
	25	1.5 7 4 0 7 4 1
	26	1.5 9 2 5 9 2 6
	27	1.6 1 1 1 1 1 1
	28	1.6 2 9 6 2 9 6
	29	1.6 4 8 1 4 8 1
	30	1.6 6 6 6 6 6 7

1°	30'	1.6 6 6 6 6 6 7
	31	1.6 8 5 1 8 5 2
	32	1.7 0 3 7 0 3 7
	33	1.7 2 2 2 2 2 2
	34	1.7 4 0 7 4 0 7
	35	1.7 5 9 2 5 9 3
	36	1.7 7 7 7 7 7 8
	37	1.7 9 6 2 9 6 3
	38	1.8 1 4 8 1 4 8
	39	1.8 3 3 3 3 3 3
	40	1.8 5 1 8 5 1 9
	41	1.8 7 0 3 7 0 4
	42	1.8 8 8 8 8 8 9
	43	1.9 0 7 4 0 7 4
	44	1.9 2 5 9 2 5 9
	45	1.9 4 4 4 4 4 4
	46	1.9 6 2 9 6 3 0
	47	1.9 8 1 4 8 1 5
	48	2.0 0 0 0 0 0 0
	49	2.0 1 8 5 1 8 5
	50	2.0 3 7 0 3 7 0
	51	2.0 5 5 5 5 5 6
	52	2.0 7 4 0 7 4 1
	53	2.0 9 2 5 9 2 6
	54	2.1 1 1 1 1 1 1
	55	2.1 2 9 6 2 9 6
	56	2.1 4 8 1 4 8 1
	57	2.1 6 6 6 6 6 7
	58	2.1 8 5 1 8 5 2
	59	2.2 0 3 7 0 3 7
	60	2.2 2 2 2 2 2 2

2°	0'	2.2 2 22222 2
	1	2.2 4 07407
	2	2.2 5 92593
	3	2.2 7 77778
	4	2.2 9 62963
	5	2.3 1 48148
	6	2.3 3 33333
	7	2.3 5 18519
	8	2.3 7 03704
	9	2.3 8 88889
	10	2.4 0 74074
	11	2.4 2 59259
	12	2.4 4 44444
	13	2.4 6 29630
	14	2.4 8 14815
	15	2.5 0 00000
	16	2.5 1 85185
	17	2.5 3 70370
	18	2.5 5 55556
	19	2.5 7 40741
	20	2.5 9 25926
	21	2.6 1 11111
	22	2.6 2 96296
	23	2.6 4 81481
	24	2.6 6 66667
	25	2.6 8 51852
	26	2.7 0 37037
	27	2.7 2 22222
	28	2.7 4 07407
	29	2.7 5 92593
	30	2.7 7 77778

2°	30'	2.7 7 77778
	31	2.7 9 62963
	32	2.8 1 48148
	33	2.8 3 33333
	34	2.8 5 18519
	35	2.8 7 03704
	36	2.8 8 88889
	37	2.9 0 74074
	38	2.9 2 59259
	39	2.9 4 44444
	40	2.9 6 29630
	41	2.9 8 14815
	42	3.0 0 00000
	43	3.0 1 85185
	44	3.0 3 70370
	45	3.0 5 55556
	46	3.0 7 40741
	47	3.0 9 25926
	48	3.1 1 11111
	49	3.1 2 96296
	50	3.1 4 81481
	51	3.1 6 66667
	52	3.1 8 51852
	53	3.2 0 37037
	54	3.2 2 22222
	55	3.2 4 07407
	56	3.2 5 92593
	57	3.2 7 77778
	58	3.2 9 62963
	59	3.3 1 48148
	60	3.3 3 33333

5.

3° 0'	0	3.3 3 33333 3
	1	3.3 5 18519
	2	3.3 7 0370 4
	3	3.3 8 8888 9
	4	3.4 0 7407 4
	5	3.4 2 5925 9
	6	3.4 4 4444 4
	7	3.4 6 2963 0
	8	3.4 8 1481 5
	9	3.5 0 0000 0
	10	3.5 1 8518 5
	11	3.5 3 7037 0
	12	3.5 5 5555 6
	13	3.5 7 4074 1
	14	3.5 9 2592 6
	15	3.6 1 1111 1
	16	3.6 2 9629 6
	17	3.6 4 8148 1
	18	3.6 6 6666 7
	19	3.6 8 5185 2
	20	3.7 0 3703 7
	21	3.7 2 2222 2
	22	3.7 4 0740 7
	23	3.7 5 9259 3
	24	3.7 7 7777 8
	25	3.7 9 6296 3
	26	3.8 1 4814 6
	27	3.8 3 3333 3
	28	3.8 5 1851 9
	29	3.8 7 0370 4
	30	3.8 8 8888 9

3° 30'	30	3.8 8 8888 9
	31	3.9 0 7407 4
	32	3.9 2 5925 9
	33	3.9 4 4444 4
	34	3.9 6 2963 0
	35	3.9 8 1481 5
	36	4.0 0 0000 0
	37	4.0 1 8518 5
	38	4.0 3 7037 0
	39	4.0 5 5555 6
	40	4.0 7 4074 1
	41	4.0 9 2592 6
	42	4.1 1 1111 1
	43	4.1 2 9629 6
	44	4.1 4 8148 1
	45	4.1 6 6666 7
	46	4.1 8 5185 2
	47	4.2 0 3703 7
	48	4.2 2 2222 2
	49	4.2 4 0740 7
	50	4.2 5 9259 3
	51	4.2 7 7777 8
	52	4.2 9 6296 3
	53	4.3 1 4814 8
	54	4.3 3 3333 3
	55	4.3 5 1851 9
	56	4.3 7 0370 4
	57	4.3 8 8888 9
	58	4.4 0 7407 4
	59	4.4 2 5925 9
	60	4.4 4 4444 4

4°	0'	4.4 4 4444 4
	1	4.4 6 2963 0
	2	4.4 8 1481 5
	3	4.5 0 0000 0
	4	4.5 1 8518 5
	5	4.5 3 7037 0
	6	4.5 5 5555 6
	7	4.5 7 4074 1
	8	4.5 9 2592 6
	9	4.6 1 1111 1
	10	4.6 2 9629 6
	11	4.6 4 8148 1
	12	4.6 6 6666 7
	13	4.6 8 5185 2
	14	4.7 0 3703 7
	15	4.7 2 2222 2
	16	4.7 4 0740 7
	17	4.7 5 9259 3
	18	4.7 7 7777 8
	19	4.7 9 6296 3
	20	4.8 1 4814 8
	21	4.8 3 3333 3
	22	4.8 5 1851 9
	23	4.8 7 0370 4
	24	4.8 8 8888 9
	25	4.9 0 7407 4
	26	4.9 2 5925 9
	27	4.9 4 4444 4
	28	4.9 6 2963 0
	29	4.9 8 1481 5
	30	5.0 0 0000 0

4°	30'	5.0 0 0000 0
	31	5.0 1 8518 5
	32	5.0 3 7037 0
	33	5.0 5 5555 6
	34	5.0 7 4074 1
	35	5.0 9 2592 6
	36	5.1 1 1111 1
	37	5.1 2 9629 6
	38	5.1 4 8148 1
	39	5.1 6 6666 7
	40	5.1 8 5185 2
	41	5.2 0 3703 7
	42	5.2 2 2222 2
	43	5.2 4 0740 7
	44	5.2 5 9259 3
	45	5.2 7 7777 8
	46	5.2 9 6296 3
	47	5.3 1 4814 8
	48	5.3 3 3333 3
	49	5.3 5 1851 9
	50	5.3 7 0370 4
	51	5.3 8 8888 9
	52	5.4 0 7407 4
	53	5.4 2 5925 9
	54	5.4 4 4444 4
	55	5.4 6 2963 0
	56	5.4 8 1481 5
	57	5.5 0 0000 0
	58	5.5 1 8518 5
	59	5.5 3 7037 0
	60	5.5 5 5555 6

5°	0'	5.5 5 55555 6
	1	5.5 7 40741
	2	5.5 9 25926
	3	5.6 1 11111
	4	5.6 2 96296
	5	5.6 4 81481
	6	5.6 6 66667
	7	5.6 8 51852
	8	5.7 0 37037
	9	5.7 2 22222
	10	5.7 4 07407
	11	5.7 5 92593
	12	5.7 7 77778
	13	5.7 9 62963
	14	5.8 1 48148
	15	5.8 3 33333
	16	5.8 5 18519
	17	5.8 7 03704
	18	5.8 8 88889
	19	5.9 0 74074
	20	5.9 2 59259
	21	5.9 4 44444
	22	5.9 6 29630
	23	5.9 8 14815
	24	6.0 0 00000
	25	6.0 1 85185
	26	6.0 3 70370
	27	6.0 5 55556
	28	6.0 7 40741
	29	6.0 9 25926
	30	6.1 1 11111

5°	30'	6.1 1 11111
	31	6.1 2 96296
	32	6.1 4 81481
	33	6.1 6 66667
	34	6.1 8 51852
	35	6.2 0 37037
	36	6.2 2 22222
	37	6.2 4 07407
	38	6.2 5 92593
	39	6.2 7 77778
	40	6.2 9 62963
	41	6.3 1 48148
	42	6.3 3 33333
	43	6.3 5 18519
	44	6.3 7 03704
	45	6.3 8 88889
	46	6.4 0 74074
	47	6.4 2 59259
	48	6.4 4 44444
	49	6.4 6 29630
	50	6.4 8 14815
	51	6.5 0 00000
	52	6.5 1 85185
	53	6.5 3 70370
	54	6.5 5 55556
	55	6.5 7 40741
	56	6.5 9 25926
	57	6.6 1 11111
	58	6.6 2 96296
	59	6.6 4 81481
	60	6.6 6 66667



6°	0	6.6 6 666 6 7
	1	6.6 8 518 5 2
	2	6.7 0 370 3 7
	3	6.7 2 222 2 2
	4	6.7 4 074 0 7
	5	6.7 5 925 9 3
	6	6.7 7 777 7 8
	7	6.7 9 629 6 3
	8	6.8 1 481 4 8
	9	6.8 3 333 3 3
	10	6.8 5 185 1 9
	11	6.8 7 037 0 4
	12	6.8 8 888 8 9
	13	6.9 0 740 7 4
	14	6.9 2 592 5 9
	15	6.9 4 444 4 4
	16	6.9 6 296 3 0
	17	6.9 8 148 1 5
	18	7.0 0 000 0 0
	19	7.0 1 851 8 5
	20	7.0 3 703 7 0
	21	7.0 5 555 5 6
	22	7.0 7 407 4 1
	23	7.0 9 259 2 6
	24	7.1 1 111 1 1
	25	7.1 2 962 9 6
	26	7.1 4 814 8 1
	27	7.1 6 666 6 7
	28	7.1 8 518 5 2
	29	7.2 0 370 3 7
	30	7.2 2 222 2 2

6°	30'	7.2 2 222 2 2
	31	7.2 4 074 0 7
	32	7.2 5 925 9 3
	33	7.2 7 777 7 8
	34	7.2 9 629 6 3
	35	7.3 1 481 4 8
	36	7.3 3 333 3 3
	37	7.3 5 185 1 9
	38	7.3 7 037 0 4
	39	7.3 8 888 8 9
	40	7.4 0 740 7 4
	41	7.4 2 592 5 9
	42	7.4 4 444 4 4
	43	7.4 6 296 3 0
	44	7.4 8 148 1 5
	45	7.5 0 000 0 0
	46	7.5 1 851 8 5
	47	7.5 3 703 7 0
	48	7.5 5 555 5 6
	49	7.5 7 407 4 1
	50	7.5 9 259 2 6
	51	7.6 1 111 1 1
	52	7.6 2 962 9 6
	53	7.6 4 814 8 1
	54	7.6 6 666 6 7
	55	7.6 8 518 5 2
	56	7.7 0 370 3 7
	57	7.7 2 222 2 2
	58	7.7 4 074 0 7
	59	7.7 5 925 9 3
	60	7.7 7 777 7 8

7°	0	7.7 7 7 7 7 7 8
	1	7.7 9 6 2 9 6 3
	2	7.8 1 4 8 1 4 8
	3	7.8 3 3 3 3 3 3
	4	7.8 5 1 8 5 1 9
	5	7.8 7 0 3 7 0 4
	6	7.8 8 8 8 8 8 9
	7	7.9 0 7 4 0 7 4
	8	7.9 2 5 9 2 5 9
	9	7.9 4 4 4 4 4 4
	10	7.9 6 2 9 6 3 0
	11	7.9 8 1 4 8 1 5
	12	8.0 0 0 0 0 0 0
	13	8.0 1 8 5 1 8 5
	14	8.0 3 7 0 3 7 0
	15	8.0 5 5 5 5 5 6
	16	8.0 7 4 0 7 4 1
	17	8.0 9 2 5 9 2 6
	18	8.1 1 1 1 1 1 1
	19	8.1 2 9 6 2 9 6
	20	8.1 4 8 1 4 8 1
	21	8.1 6 6 6 6 6 7
	22	8.1 8 5 1 8 5 2
	23	8.2 0 3 7 0 3 7
	24	8.2 2 2 2 2 2 2
	25	8.2 4 0 7 4 0 7
	26	8.2 5 9 2 5 9 3
	27	8.2 7 7 7 7 7 8
	28	8.2 9 6 2 9 6 3
	29	8.3 1 4 8 1 4 8
	30	8.3 3 3 3 3 3 3

7°	30	8.3 3 3 3 3 3 3
	31	8.3 5 1 8 5 1 9
	32	8.3 7 0 3 7 0 4
	33	8.3 8 8 8 8 8 9
	34	8.4 0 7 4 0 7 4
	35	8.4 2 5 9 2 5 9
	36	8.4 4 4 4 4 4 4
	37	8.4 6 2 9 6 3 0
	38	8.4 8 1 4 8 1 5
	39	8.5 0 0 0 0 0 0
	40	8.5 1 8 5 1 8 5
	41	8.5 3 7 0 3 7 0
	42	8.5 5 5 5 5 5 6
	43	8.5 7 4 0 7 4 1
	44	8.5 9 2 5 9 2 6
	45	8.6 1 1 1 1 1 1
	46	8.6 2 9 6 2 9 6
	47	8.6 4 8 1 4 8 1
	48	8.6 6 6 6 6 6 7
	49	8.6 8 5 1 8 5 2
	50	8.7 0 3 7 0 3 7
	51	8.7 2 2 2 2 2 2
	52	8.7 4 0 7 4 0 7
	53	8.7 5 9 2 5 9 3
	54	8.7 7 7 7 7 7 8
	55	8.7 9 6 2 9 6 3
	56	8.8 1 4 8 1 4 8
	57	8.8 3 3 3 3 3 3
	58	8.8 5 1 8 5 1 9
	59	8.8 7 0 3 7 0 4
	60	8.8 8 8 8 8 8 9

10.

8°	0'	8.8888889
	1	8.9074074
	2	8.9259259
	3	8.9444444
	4	8.9629630
	5	8.9814815
	6	9.0000000
	7	9.0185185
	8	9.0370370
	9	9.0555556
	10	9.0740741
	11	9.0925926
	12	9.1111111
	13	9.1296296
	14	9.1481481
	15	9.1666667
	16	9.1851852
	17	9.2037037
	18	9.2222222
	19	9.2407407
	20	9.2592593
	21	9.2777778
	22	9.2962963
	23	9.3148148
	24	9.3333333
	25	9.3518519
	26	9.3703704
	27	9.3888889
	28	9.4074074
	29	9.4259259
	30	9.4444444

8°	30'	9.4444444
	31	9.4629630
	32	9.4814815
	33	9.5000000
	34	9.5185185
	35	9.5370370
	36	9.5555556
	37	9.5740741
	38	9.5925926
	39	9.6111111
	40	9.6296296
	41	9.6481481
	42	9.6666667
	43	9.6851852
	44	9.7037037
	45	9.7222222
	46	9.7407407
	47	9.7592593
	48	9.7777778
	49	9.7962963
	50	9.8148148
	51	9.8333333
	52	9.8518519
	53	9.8703704
	54	9.8888889
	55	9.9074074
	56	9.9259259
	57	9.9444444
	58	9.9629630
	59	9.9814815
	60	10.0000000

$\vartheta^{\circ}$   
 0' 10.00000000  
 1 10.0185185  
 2 10.0370370  
 3 10.0555556  
 4 10.0740741  
 5 10.0925926  
 6 10.1111111  
 7 10.1296296  
 8 10.1481481  
 9 10.1666667

10 10.1851852  
 11 10.2037037  
 12 10.2222222  
 13 10.2407407  
 14 10.2592593  
 15 10.2777778  
 16 10.2962963  
 17 10.3148148  
 18 10.3333333  
 19 10.3518519

20 10.3703704  
 21 10.3888889  
 22 10.4074074  
 23 10.4259259  
 24 10.4444444  
 25 10.4629630  
 26 10.4814815  
 27 10.5000000  
 28 10.5185185  
 29 10.5370370

30 10.5555556

$\vartheta^{\circ}$   
 30' 10.5555556  
 31 10.5740741  
 32 10.5925926  
 33 10.6111111  
 34 10.6296296  
 35 10.6481481  
 36 10.6666667  
 37 10.6851852  
 38 10.7037037  
 39 10.7222222

40 10.7407407  
 41 10.7592593  
 42 10.7777778  
 43 10.7962963  
 44 10.8148148  
 45 10.8333333  
 46 10.8518519  
 47 10.8703704  
 48 10.8888889  
 49 10.9074074

50 10.9259259  
 51 10.9444444  
 52 10.9629630  
 53 10.9814815  
 54 11.0000000  
 55 11.0185185  
 56 11.0370370  
 57 11.0555556  
 58 11.0740741  
 59 11.0925926

60 11.1111111

$10^\circ$		
	0'	1 1.1 1 1 1 1 1 1
	1	1 1.1 2 9 6 2 9 6
	2	1 1.1 4 8 1 4 8 1
	3	1 1.1 6 6 6 6 6 7
	4	1 1.1 8 5 1 8 5 2
	5	1 1.2 0 3 7 0 3 7
	6	1 1.2 2 2 2 2 2 2
	7	1 1.2 4 0 7 4 0 7
	8	1 1.2 5 9 2 5 9 3
	9	1 1.2 7 7 7 7 7 8
	10	1 1.2 9 6 2 9 6 3
	11	1 1.3 1 4 8 1 4 8
	12	1 1.3 3 3 3 3 3 3
	13	1 1.3 5 1 8 5 1 9
	14	1 1.3 7 0 3 7 0 4
	15	1 1.3 8 8 8 8 8 9
	16	1 1.4 0 7 4 0 7 4
	17	1 1.4 2 5 9 2 5 9
	18	1 1.4 4 4 4 4 4 4
	19	1 1.4 6 2 9 6 3 0
	20	1 1.4 8 1 4 8 1 5
	21	1 1.5 0 0 0 0 0 0
	22	1 1.5 1 8 5 1 8 5
	23	1 1.5 3 7 0 3 7 0
	24	1 1.5 5 5 5 5 5 6
	25	1 1.5 7 4 0 7 4 1
	26	1 1.5 9 2 5 9 2 6
	27	1 1.6 1 1 1 1 1 1
	28	1 1.6 2 9 6 2 9 6
	29	1 1.6 4 8 1 4 8 1
	30	1 1.6 6 6 6 6 6 7

$10^\circ$		
	30'	1 1.6 6 6 6 6 6 7
	31	1 1.6 8 5 1 8 5 2
	32	1 1.7 0 3 7 0 3 7
	33	1 1.7 2 2 2 2 2 2
	34	1 1.7 4 0 7 4 0 7
	35	1 1.7 5 9 2 5 9 3
	36	1 1.7 7 7 7 7 7 8
	37	1 1.7 9 6 2 9 6 3
	38	1 1.8 1 4 8 1 4 8
	39	1 1.8 3 3 3 3 3 3
	40	1 1.8 5 1 8 5 1 9
	41	1 1.8 7 0 3 7 0 4
	42	1 1.8 8 8 8 8 8 9
	43	1 1.9 0 7 4 0 7 4
	44	1 1.9 2 5 9 2 5 9
	45	1 1.9 4 4 4 4 4 4
	46	1 1.9 6 2 9 6 3 0
	47	1 1.9 8 1 4 8 1 5
	48	1 2.0 0 0 0 0 0 0
	49	1 2.0 1 8 5 1 8 5
	50	1 2.0 3 7 0 3 7 0
	51	1 2.0 5 5 5 5 5 6
	52	1 2.0 7 4 0 7 4 1
	53	1 2.0 9 2 5 9 2 6
	54	1 2.1 1 1 1 1 1 1
	55	1 2.1 2 9 6 2 9 6
	56	1 2.1 4 8 1 4 8 1
	57	1 2.1 6 6 6 6 6 7
	58	1 2.1 8 5 1 8 5 2
	59	1 2.2 0 3 7 0 3 7
	60	1 2.2 2 2 2 2 2 2

11°	0'	12.2 2 22222
	1	12.2 4 07407
	2	12.2 5 92593
	3	12.2 7 77778
	4	12.2 9 62963
	5	12.3 1 48148
	6	12.3 3 33333
	7	12.3 5 18519
	8	12.3 7 03704
	9	12.3 8 88889
	10	12.4 0 74074
	11	12.4 2 59259
	12	12.4 4 44444
	13	12.4 6 29630
	14	12.4 8 14815
	15	12.5 0 00000
	16	12.5 1 85185
	17	12.5 3 70370
	18	12.5 5 55556
	19	12.5 7 40741
	20	12.5 9 25926
	21	12.6 1 11111
	22	12.6 2 96296
	23	12.6 4 81481
	24	12.6 6 66667
	25	12.6 8 51852
	26	12.7 0 37037
	27	12.7 2 22222
	28	12.7 4 07407
	29	12.7 5 92593
	30	12.7 7 77778

11°	30'	12.7 7 77778
	31	12.7 9 62963
	32	12.8 1 48148
	33	12.8 3 33333
	34	12.8 5 18519
	35	12.8 7 03704
	36	12.8 8 88889
	37	12.9 0 74074
	38	12.9 2 59259
	39	12.9 4 44444
	40	12.9 6 29630
	41	12.9 8 14815
	42	13.0 0 00000
	43	13.0 1 85185
	44	13.0 3 70370
	45	13.0 5 55556
	46	13.0 7 40741
	47	13.0 9 25926
	48	13.1 1 11111
	49	13.1 2 96296
	50	13.1 4 81481
	51	13.1 6 66667
	52	13.1 8 51852
	53	13.2 0 37037
	54	13.2 2 22222
	55	13.2 4 07407
	56	13.2 5 92593
	57	13.2 7 77778
	58	13.2 9 62963
	59	13.3 1 48148
	60	13.3 3 33333

12°	0'	13.3333333
	1	13.3518519
	2	13.3703704
	3	13.3888889
	4	13.4074074
	5	13.4259259
	6	13.4444444
	7	13.4629630
	8	13.4814815
	9	13.5000000
	10	13.5185185
	11	13.5370370
	12	13.5555556
	13	13.5740741
	14	13.5925926
	15	13.6111111
	16	13.6296296
	17	13.6481481
	18	13.6666667
	19	13.6851852
	20	13.7037037
	21	13.7222222
	22	13.7407407
	23	13.7592593
	24	13.7777778
	25	13.7962963
	26	13.8148148
	27	13.8333333
	28	13.8518519
	29	13.8703704
	30	13.8888889

12°	30'	13.8888889
	31	13.9074074
	32	13.9259259
	33	13.9444444
	34	13.9629630
	35	13.9814815
	36	14.0000000
	37	14.0185185
	38	14.0370370
	39	14.0555556
	40	14.0740741
	41	14.0925926
	42	14.1111111
	43	14.1296296
	44	14.1481481
	45	14.1666667
	46	14.1851852
	47	14.2037037
	48	14.2222222
	49	14.2407407
	50	14.2592593
	51	14.2777778
	52	14.2962963
	53	14.3148148
	54	14.3333333
	55	14.3518519
	56	14.3703704
	57	14.3888889
	58	14.4074074
	59	14.4259259
	60	14.4444444

13°	0'	1 4.4 4 44444
	1	1 4.4 6 29630
	2	1 4.4 8 14815
	3	1 4.5 0 00000
	4	1 4.5 1 85185
	5	1 4.5 3 70370
	6	1 4.5 5 55556
	7	1 4.5 7 40741
	8	1 4.5 9 25926
	9	1 4.6 1 11111
	10	1 4.6 2 96296
	11	1 4.6 4 81481
	12	1 4.6 6 66667
	13	1 4.6 8 51852
	14	1 4.7 0 37037
	15	1 4.7 2 22222
	16	1 4.7 4 07407
	17	1 4.7 5 92593
	18	1 4.7 7 77778
	19	1 4.7 9 62963
	20	1 4.8 1 48148
	21	1 4.8 3 33333
	22	1 4.8 5 18519
	23	1 4.8 7 03704
	24	1 4.8 8 88889
	25	1 4.9 0 74074
	26	1 4.9 2 59259
	27	1 4.9 4 44444
	28	1 4.9 6 29630
	29	1 4.9 8 14815
	30	1 5.0 0 00000

13°	30'	1 5.0 0 00000
	31	1 5.0 1 85185
	32	1 5.0 3 70370
	33	1 5.0 5 55556
	34	1 5.0 7 40741
	35	1 5.0 9 25926
	36	1 5.1 1 11111
	37	1 5.1 2 96296
	38	1 5.1 4 81481
	39	1 5.1 6 66667
	40	1 5.1 8 51852
	41	1 5.2 0 37037
	42	1 5.2 2 22222
	43	1 5.2 4 07407
	44	1 5.2 5 92593
	45	1 5.2 7 77778
	46	1 5.2 9 62963
	47	1 5.3 1 48148
	48	1 5.3 3 33333
	49	1 5.3 5 18519
	50	1 5.3 7 03704
	51	1 5.3 8 88889
	52	1 5.4 0 74074
	53	1 5.4 2 59259
	54	1 5.4 4 44444
	55	1 5.4 6 29630
	56	1 5.4 8 14815
	57	1 5.5 0 00000
	58	1 5.5 1 85185
	59	1 5.5 3 70370
	60	1 5.5 5 55556



14°	0'	15.555556
	1	15.5740741
	2	15.5925926
	3	15.6111111
	4	15.6296296
	5	15.6481481
	6	15.6666667
	7	15.6851852
	8	15.7037037
	9	15.7222222
	10	15.7407407
	11	15.7592593
	12	15.7777778
	13	15.7962963
	14	15.8148148
	15	15.8333333
	16	15.8518519
	17	15.8703704
	18	15.8888889
	19	15.9074074
	20	15.9259259
	21	15.9444444
	22	15.9629630
	23	15.9814815
	24	16.0000000
	25	16.0185185
	26	16.0370370
	27	16.0555556
	28	16.0740741
	29	16.0925926
	30	16.1111111

14°	30'	16.1111111
	31	16.1296296
	32	16.1481481
	33	16.1666667
	34	16.1851852
	35	16.2037037
	36	16.2222222
	37	16.2407407
	38	16.2592593
	39	16.2777778
	40	16.2962963
	41	16.3148148
	42	16.3333333
	43	16.3518519
	44	16.3703704
	45	16.3888889
	46	16.4074074
	47	16.4259259
	48	16.4444444
	49	16.4629630
	50	16.4814815
	51	16.5000000
	52	16.5185185
	53	16.5370370
	54	16.5555556
	55	16.5740741
	56	16.5925926
	57	16.6111111
	58	16.6296296
	59	16.6481481
	60	16.6666667

15°

0'	16.6666667
1	16.6851852
2	16.7037037
3	16.7222222
4	16.7407407
5	16.7592593
6	16.7777778
7	16.7962963
8	16.8148148
9	16.8333333
10	16.8518519
11	16.8703704
12	16.8888889
13	16.9074074
14	16.9259259
15	16.9444444
16	16.9629630
17	16.9814815
18	17.0000000
19	17.0185185
20	17.0370370
21	17.0555556
22	17.0740741
23	17.0925926
24	17.1111111
25	17.1296296
26	17.1481481
27	17.1666667
28	17.1851852
29	17.2037037
30	17.2222222

15°

30'	17.2222222
31	17.2407407
32	17.2592593
33	17.2777778
34	17.2962963
35	17.3148148
36	17.3333333
37	17.3518519
38	17.3703704
39	17.3888889
40	17.4074074
41	17.4259259
42	17.4444444
43	17.4629630
44	17.4814815
45	17.5000000
46	17.5185185
47	17.5370370
48	17.5555556
49	17.5740741
50	17.5925926
51	17.6111111
52	17.6296296
53	17.6481481
54	17.6666667
55	17.6851852
56	17.7037037
57	17.7222222
58	17.7407407
59	17.7592593
60	17.7777778

16°

0	17.7777778
1	17.7962963
2	17.8148148
3	17.8333333
4	17.8518519
5	17.8703704
6	17.8888889
7	17.9074074
8	17.9259259
9	17.9444444
10	17.9629630
11	17.9814815
12	18.0000000
13	18.0185185
14	18.0370370
15	18.0555556
16	18.0740741
17	18.0925926
18	18.1111111
19	18.1296296
20	18.1481481
21	18.1666667
22	18.1851852
23	18.2037037
24	18.2222222
25	18.2407407
26	18.2592593
27	18.2777778
28	18.2962963
29	18.3148148
30	18.3333333

16°

30	18.3333333
31	18.3518519
32	18.3703704
33	18.3888889
34	18.4074074
35	18.4259259
36	18.4444444
37	18.4629630
38	18.4814815
39	18.5000000
40	18.5185185
41	18.5370370
42	18.5555556
43	18.5740741
44	18.5925926
45	18.6111111
46	18.6296296
47	18.6481481
48	18.6666667
49	18.6851852
50	18.7037037
51	18.7222222
52	18.7407407
53	18.7592593
54	18.7777778
55	18.7962963
56	18.8148148
57	18.8333333
58	18.8518519
59	18.8703704
60	18.8888889

19.

17°	0'	18.8888889
	1	18.9074074
	2	18.9259259
	3	18.9444444
	4	18.9629630
	5	18.9814815
	6	19.0000000
	7	19.0185185
	8	19.0370370
	9	19.0555556
	10	19.0740741
	11	19.0925926
	12	19.1111111
	13	19.1296296
	14	19.1481481
	15	19.1666667
	16	19.1851852
	17	19.2037037
	18	19.2222222
	19	19.2407407
	20	19.2592593
	21	19.2777778
	22	19.2962963
	23	19.3148148
	24	19.3333333
	25	19.3518519
	26	19.3703704
	27	19.3888889
	28	19.4074074
	29	19.4259259
	30	19.4444444

17°	30'	19.4444444
	31	19.4629630
	32	19.4814815
	33	19.5000000
	34	19.5185185
	35	19.5370370
	36	19.5555556
	37	19.5740741
	38	19.5925926
	39	19.6111111
	40	19.6296296
	41	19.6481481
	42	19.6666667
	43	19.6851852
	44	19.7037037
	45	19.7222222
	46	19.7407407
	47	19.7592593
	48	19.7777778
	49	19.7962963
	50	19.8148148
	51	19.8333333
	52	19.8518519
	53	19.8703704
	54	19.8888889
	55	19.9074074
	56	19.9259259
	57	19.9444444
	58	19.9629630
	59	19.9814815
	60	20.0000000

6°	0	20.0 0 0 0 0 0 0
	1	20.0 1 8 5 1 8 5
	2	20.0 3 7 0 3 7 0
	3	20.0 5 5 5 5 5 6
	4	20.0 7 4 0 7 4 1
	5	20.0 9 2 5 9 2 6
	6	20.1 1 1 1 1 1 1
	7	20.1 2 9 6 2 9 6
	8	20.1 4 8 1 4 8 1
	9	20.1 6 6 6 6 6 7
	10	20.1 8 5 1 8 5 2
	11	20.2 0 3 7 0 3 7
	12	20.2 2 2 2 2 2 2
	13	20.2 4 0 7 4 0 7
	14	20.2 5 9 2 5 9 3
	15	20.2 7 7 7 7 7 8
	16	20.2 9 6 2 9 6 3
	17	20.3 1 4 8 1 4 8
	18	20.3 3 3 3 3 3 3
	19	20.3 5 1 8 5 1 9
	20	20.3 7 0 3 7 0 4
	21	20.3 8 8 8 8 8 9
	22	20.4 0 7 4 0 7 4
	23	20.4 2 5 9 2 5 9
	24	20.4 4 4 4 4 4 4
	25	20.4 6 2 9 6 3 0
	26	20.4 8 1 4 8 1 5
	27	20.5 0 0 0 0 0 0
	28	20.5 1 8 5 1 8 5
	29	20.5 3 7 0 3 7 0
	30	20.5 5 5 5 5 5 6

18°	30	20.5 5 5 5 5 5 6
	31	20.5 7 4 0 7 4 1
	32	20.5 9 2 5 9 2 6
	33	20.6 1 1 1 1 1 1
	34	20.6 2 9 6 2 9 6
	35	20.6 4 8 1 4 8 1
	36	20.6 6 6 6 6 6 7
	37	20.6 8 5 1 8 5 2
	38	20.7 0 3 7 0 3 7
	39	20.7 2 2 2 2 2 2
	40	20.7 4 0 7 4 0 7
	41	20.7 5 9 2 5 9 3
	42	20.7 7 7 7 7 7 8
	43	20.7 9 6 2 9 6 3
	44	20.8 1 4 8 1 4 8
	45	20.8 3 3 3 3 3 3
	46	20.8 5 1 8 5 1 9
	47	20.8 7 0 3 7 0 4
	48	20.8 8 8 8 8 8 9
	49	20.9 0 7 4 0 7 4
	50	20.9 2 5 9 2 5 9
	51	20.9 4 4 4 4 4 4
	52	20.9 6 2 9 6 3 0
	53	20.9 8 1 4 8 1 5
	54	21.0 0 0 0 0 0 0
	55	21.0 1 8 5 1 8 5
	56	21.0 3 7 0 3 7 0
	57	21.0 5 5 5 5 5 6
	58	21.0 7 4 0 7 4 1
	59	21.0 9 2 5 9 2 6
	60	21.1 1 1 1 1 1 1

150	0'	21.1111111
	1	21.1296296
	2	21.1481481
	3	21.1666667
	4	21.1851852
	5	21.2037037
	6	21.2222222
	7	21.2407407
	8	21.2592593
	9	21.2777778
	10	21.2962963
	11	21.3148148
	12	21.3333333
	13	21.3518519
	14	21.3703704
	15	21.3888889
	16	21.4074074
	17	21.4259259
	18	21.4444444
	19	21.4629630
	20	21.4814815
	21	21.5000000
	22	21.5185185
	23	21.5370370
	24	21.5555556
	25	21.5740741
	26	21.5925926
	27	21.6111111
	28	21.6296296
	29	21.6481481
	30	21.6666667

150	30'	21.6666667
	31	21.6851852
	32	21.7037037
	33	21.7222222
	34	21.7407407
	35	21.7592593
	36	21.7777778
	37	21.7962963
	38	21.8148148
	39	21.8333333
	40	21.8518519
	41	21.8703704
	42	21.8888889
	43	21.9074074
	44	21.9259259
	45	21.9444444
	46	21.9629630
	47	21.9814815
	48	22.0000000
	49	22.0185185
	50	22.0370370
	51	22.0555556
	52	22.0740741
	53	22.0925926
	54	22.1111111
	55	22.1296296
	56	22.1481481
	57	22.1666667
	58	22.1851852
	59	22.2037037
	60	22.2222222

20°	0'	22.222222
	1	22.2407407
	2	22.2592593
	3	22.2777778
	4	22.2962963
	5	22.3148148
	6	22.3333333
	7	22.3518519
	8	22.3703704
	9	22.3888889
	10	22.4074074
	11	22.4259259
	12	22.4444444
	13	22.4629630
	14	22.4814815
	15	22.5000000
	16	22.5185185
	17	22.5370370
	18	22.5555556
	19	22.5740741
	20	22.5925926
	21	22.6111111
	22	22.6296296
	23	22.6481481
	24	22.6666667
	25	22.6851852
	26	22.7037037
	27	22.7222222
	28	22.7407407
	29	22.7592593
	30	22.7777778

20°	30'	22.7777778
	31	22.7962963
	32	22.8148148
	33	22.8333333
	34	22.8518519
	35	22.8703704
	36	22.8888889
	37	22.9074074
	38	22.9259259
	39	22.9444444
	40	22.9629630
	41	22.9814815
	42	23.0000000
	43	23.0185185
	44	23.0370370
	45	23.0555556
	46	23.0740741
	47	23.0925926
	48	23.1111111
	49	23.1296296
	50	23.1481481
	51	23.1666667
	52	23.1851852
	53	23.2037037
	54	23.2222222
	55	23.2407407
	56	23.2592593
	57	23.2777778
	58	23.2962963
	59	23.3148148
	60	23.3333333

21°	0'	23.3333333
	1	23.3518519
	2	23.3703704
	3	23.3888889
	4	23.4074074
	5	23.4259259
	6	23.4444444
	7	23.4629630
	8	23.4814815
	9	23.5000000
	10	23.5185185
	11	23.5370370
	12	23.5555556
	13	23.5740741
	14	23.5925926
	15	23.6111111
	16	23.6296296
	17	23.6481481
	18	23.6666667
	19	23.6851852
	20	23.7037037
	21	23.7222222
	22	23.7407407
	23	23.7592593
	24	23.7777778
	25	23.7962963
	26	23.8148148
	27	23.8333333
	28	23.8518519
	29	23.8703704
	30	23.8888889

21°	30'	23.8888889
	31	23.9074074
	32	23.9259259
	33	23.9444444
	34	23.9629630
	35	23.9814815
	36	24.0000000
	37	24.0185185
	38	24.0370370
	39	24.0555556
	40	24.0740741
	41	24.0925926
	42	24.1111111
	43	24.1296296
	44	24.1481481
	45	24.1666667
	46	24.1851852
	47	24.2037037
	48	24.2222222
	49	24.2407407
	50	24.2592593
	51	24.2777778
	52	24.2962963
	53	24.3148148
	54	24.3333333
	55	24.3518519
	56	24.3703704
	57	24.3888889
	58	24.4074074
	59	24.4259259
	60	24.4444444



22°	0'	24.4444444	22°	30'	25.0000000
	1	24.4629630		31	25.0185185
	2	24.4814815		32	25.0370370
	3	24.5000000		33	25.0555556
	4	24.5185185		34	25.0740741
	5	24.5370370		35	25.0925926
	6	24.5555556		36	25.1111111
	7	24.5740741		37	25.1296296
	8	24.5925926		38	25.1481481
	9	24.6111111		39	25.1666667
	10	24.6296296		40	25.1851852
	11	24.6481481		41	25.2037037
	12	24.6666667		42	25.2222222
	13	24.6851852		43	25.2407407
	14	24.7037037		44	25.2592593
	15	24.7222222		45	25.2777778
	16	24.7407407		46	25.2962963
	17	24.7592593		47	25.3148148
	18	24.7777778		48	25.3333333
	19	24.7962963		49	25.3518519
	20	24.8148148		50	25.3703704
	21	24.8333333		51	25.3888889
	22	24.8518519		52	25.4074074
	23	24.8703704		53	25.4259259
	24	24.8888889		54	25.4444444
	25	24.9074074		55	25.4629630
	26	24.9259259		56	25.4814815
	27	24.9444444		57	25.5000000
	28	24.9629630		58	25.5185185
	29	24.9814815		59	25.5370370
	30	25.0000000		60	25.5555556

23°	0'	25.5555556	23°	30'	26.1111111
	1	25.5740741		31	26.1296296
	2	25.5925926		32	26.1481481
	3	25.6111111		33	26.1666667
	4	25.6296296		34	26.1851852
	5	25.6481481		35	26.2037037
	6	25.6666667		36	26.2222222
	7	25.6851852		37	26.2407407
	8	25.7037037		38	26.2592593
	9	25.7222222		39	26.2777778
	10	25.7407407		40	26.2962963
	11	25.7592593		41	26.3148148
	12	25.7777778		42	26.3333333
	13	25.7962963		43	26.3518519
	14	25.8148148		44	26.3703704
	15	25.8333333		45	26.3888889
	16	25.8518519		46	26.4074074
	17	25.8703704		47	26.4259259
	18	25.8888889		48	26.4444444
	19	25.9074074		49	26.4629630
	20	25.9259259		50	26.4814815
	21	25.9444444		51	26.5000000
	22	25.9629630		52	26.5185185
	23	25.9814815		53	26.5370370
	24	26.0000000		54	26.5555556
	25	26.0185185		55	26.5740741
	26	26.0370370		56	26.5925926
	27	26.0555556		57	26.6111111
	28	26.0740741		58	26.6296296
	29	26.0925926		59	26.6481481
	30	26.1111111		60	26.6666667

24°	0	26.6666667
	1	26.6851852
	2	26.7037037
	3	26.7222222
	4	26.7407407
	5	26.7592593
	6	26.7777778
	7	26.7962963
	8	26.8148148
	9	26.8333333
	10	26.8518519
	11	26.8703704
	12	26.8888889
	13	26.9074074
	14	26.9259259
	15	26.9444444
	16	26.9629630
	17	26.9814815
	18	27.0000000
	19	27.0185185
	20	27.0370370
	21	27.0555556
	22	27.0740741
	23	27.0925926
	24	27.1111111
	25	27.1296296
	26	27.1481481
	27	27.1666667
	28	27.1851852
	29	27.2037037
	30	27.2222222

24°	30°	27.2222222
	31	27.2407407
	32	27.2592593
	33	27.2777778
	34	27.2962963
	35	27.3148148
	36	27.3333333
	37	27.3518519
	38	27.3703704
	39	27.3888889
	40	27.4074074
	41	27.4259259
	42	27.4444444
	43	27.4629630
	44	27.4814815
	45	27.5000000
	46	27.5185185
	47	27.5370370
	48	27.5555556
	49	27.5740741
	50	27.5925926
	51	27.6111111
	52	27.6296296
	53	27.6481481
	54	27.6666667
	55	27.6851852
	56	27.7037037
	57	27.7222222
	58	27.7407407
	59	27.7592593
	60	27.7777778

25°	0'	27.7777778
	1	27.7962963
	2	27.8148148
	3	27.8333333
	4	27.8518519
	5	27.8703704
	6	27.8888889
	7	27.9074074
	8	27.9259259
	9	27.9444444
	10	27.9629630
	11	27.9814815
	12	28.0000000
	13	28.0185185
	14	28.0370370
	15	28.0555556
	16	28.0740741
	17	28.0925926
	18	28.1111111
	19	28.1296296
	20	28.1481481
	21	28.1666667
	22	28.1851852
	23	28.2037037
	24	28.2222222
	25	28.2407407
	26	28.2592593
	27	28.2777778
	28	28.2962963
	29	28.3148148
	30	28.3333333

25°	30'	28.3333333
	31	28.3518519
	32	28.3703704
	33	28.3888889
	34	28.4074074
	35	28.4259259
	36	28.4444444
	37	28.4629630
	38	28.4814815
	39	28.5000000
	40	28.5185185
	41	28.5370370
	42	28.5555556
	43	28.5740741
	44	28.5925926
	45	28.6111111
	46	28.6296296
	47	28.6481481
	48	28.6666667
	49	28.6851852
	50	28.7037037
	51	28.7222222
	52	28.7407407
	53	28.7592593
	54	28.7777778
	55	28.7962963
	56	28.8148148
	57	28.8333333
	58	28.8518519
	59	28.8703704
	60	28.8888889

26°	0'	28.8888889	26°	30'	29.4444444
	1	28.9074074		31	29.4629630
	2	28.9259259		32	29.4814815
	3	28.9444444		33	29.5000000
	4	28.9629630		34	29.5185185
	5	28.9814815		35	29.5370370
	6	29.0000000		36	29.5555556
	7	29.0185185		37	29.5740741
	8	29.0370370		38	29.5925926
	9	29.0555556		39	29.6111111
	10	29.0740741		40	29.6296296
	11	29.0925926		41	29.6481481
	12	29.1111111		42	29.6666667
	13	29.1296296		43	29.6851852
	14	29.1481481		44	29.7037037
	15	29.1666667		45	29.7222222
	16	29.1851852		46	29.7407407
	17	29.2037037		47	29.7592593
	18	29.2222222		48	29.7777778
	19	29.2407407		49	29.7962963
	20	29.2592593		50	29.8148148
	21	29.2777778		51	29.8333333
	22	29.2962963		52	29.8518519
	23	29.3148148		53	29.8703704
	24	29.3333333		54	29.8888889
	25	29.3518519		55	29.9074074
	26	29.3703704		56	29.9259259
	27	29.3888889		57	29.9444444
	28	29.4074074		58	29.9629630
	29	29.4259259		59	29.9814815
	30	29.4444444		60	30.0000000

27°	0'	30.0 0 0 0 0 0 0
	1	30.0 1 8 5 1 8 5
	2	30.0 3 7 0 3 7 0
	3	30.0 5 5 5 5 5 6
	4	30.0 7 4 0 7 4 1
	5	30.0 9 2 5 9 2 6
	6	30.1 1 1 1 1 1 1
	7	30.1 2 9 6 2 9 6
	8	30.1 4 8 1 4 8 1
	9	30.1 6 6 6 6 6 7
	10	30.1 8 5 1 8 5 2
	11	30.2 0 3 7 0 3 7
	12	30.2 2 2 2 2 2 2
	13	30.2 4 0 7 4 0 7
	14	30.2 5 9 2 5 9 3
	15	30.2 7 7 7 7 7 8
	16	30.2 9 6 2 9 6 3
	17	30.3 1 4 8 1 4 8
	18	30.3 3 3 3 3 3 3
	19	30.3 5 1 8 5 1 9
	20	30.3 7 0 3 7 0 4
	21	30.3 8 8 8 8 8 9
	22	30.4 0 7 4 0 7 4
	23	30.4 2 5 9 2 5 9
	24	30.4 4 4 4 4 4 4
	25	30.4 6 2 9 6 3 0
	26	30.4 8 1 4 8 1 5
	27	30.5 0 0 0 0 0 0
	28	30.5 1 8 5 1 8 5
	29	30.5 3 7 0 3 7 0
	30	30.5 5 5 5 5 5 6

27°	30'	30.5 5 5 5 5 5 6
	31	30.5 7 4 0 7 4 1
	32	30.5 9 2 5 9 2 6
	33	30.6 1 1 1 1 1 1
	34	30.6 2 9 6 2 9 6
	35	30.6 4 8 1 4 8 1
	36	30.6 6 6 6 6 6 7
	37	30.6 8 5 1 8 5 2
	38	30.7 0 3 7 0 3 7
	39	30.7 2 2 2 2 2 2
	40	30.7 4 0 7 4 0 7
	41	30.7 5 9 2 5 9 3
	42	30.7 7 7 7 7 7 8
	43	30.7 9 6 2 9 6 3
	44	30.8 1 4 8 1 4 8
	45	30.8 3 3 3 3 3 3
	46	30.8 5 1 8 5 1 9
	47	30.8 7 0 3 7 0 4
	48	30.8 8 8 8 8 8 9
	49	30.9 0 7 4 0 7 4
	50	30.9 2 5 9 2 5 9
	51	30.9 4 4 4 4 4 4
	52	30.9 6 2 9 6 3 0
	53	30.9 8 1 4 8 1 5
	54	31.0 0 0 0 0 0 0
	55	31.0 1 8 5 1 8 5
	56	31.0 3 7 0 3 7 0
	57	31.0 5 5 5 5 5 6
	58	31.0 7 4 0 7 4 1
	59	31.0 9 2 5 9 2 6
	60	31.1 1 1 1 1 1 1

28°	0'	3 1.1 1 1 1 1 1 1
	1	3 1.1 2 9 6 2 9 6
	2	3 1.1 4 8 1 4 8 1
	3	3 1.1 6 6 6 6 6 7
	4	3 1.1 8 5 1 8 5 2
	5	3 1.2 0 3 7 0 3 7
	6	3 1.2 2 2 2 2 2 2
	7	3 1.2 4 0 7 4 0 7
	8	3 1.2 5 9 2 5 9 3
	9	3 1.2 7 7 7 7 7 8
	10	3 1.2 9 6 2 9 6 3
	11	3 1.3 1 4 8 1 4 8
	12	3 1.3 3 3 3 3 3 3
	13	3 1.3 5 1 8 5 1 9
	14	3 1.3 7 0 3 7 0 4
	15	3 1.3 8 8 8 8 8 9
	16	3 1.4 0 7 4 0 7 4
	17	3 1.4 2 5 9 2 5 9
	18	3 1.4 4 4 4 4 4 4
	19	3 1.4 6 2 9 6 3 0
	20	3 1.4 8 1 4 8 1 5
	21	3 1.5 0 0 0 0 0 0
	22	3 1.5 1 8 5 1 8 5
	23	3 1.5 3 7 0 3 7 0
	24	3 1.5 5 5 5 5 5 6
	25	3 1.5 7 4 0 7 4 1
	26	3 1.5 9 2 5 9 2 6
	27	3 1.6 1 1 1 1 1 1
	28	3 1.6 2 9 6 2 9 6
	29	3 1.6 4 8 1 4 8 1
	30	3 1.6 6 6 6 6 6 7

28°	30'	3 1.6 6 6 6 6 6 7
	31	3 1.6 8 5 1 8 5 2
	32	3 1.7 0 3 7 0 3 7
	33	3 1.7 2 2 2 2 2 2
	34	3 1.7 4 0 7 4 0 7
	35	3 1.7 5 9 2 5 9 3
	36	3 1.7 7 7 7 7 7 8
	37	3 1.7 9 6 2 9 6 3
	38	3 1.8 1 4 8 1 4 8
	39	3 1.8 3 3 3 3 3 3
	40	3 1.8 5 1 8 5 1 9
	41	3 1.8 7 0 3 7 0 4
	42	3 1.8 8 8 8 8 8 9
	43	3 1.9 0 7 4 0 7 4
	44	3 1.9 2 5 9 2 5 9
	45	3 1.9 4 4 4 4 4 4
	46	3 1.9 6 2 9 6 3 0
	47	3 1.9 8 1 4 8 1 5
	48	3 2.0 0 0 0 0 0 0
	49	3 2.0 1 8 5 1 8 5
	50	3 2.0 3 7 0 3 7 0
	51	3 2.0 5 5 5 5 5 6
	52	3 2.0 7 4 0 7 4 1
	53	3 2.0 9 2 5 9 2 6
	54	3 2.1 1 1 1 1 1 1
	55	3 2.1 2 9 6 2 9 6
	56	3 2.1 4 8 1 4 8 1
	57	3 2.1 6 6 6 6 6 7
	58	3 2.1 8 5 1 8 5 2
	59	3 2.2 0 3 7 0 3 7
	60	3 2.2 2 2 2 2 2 2

29°	0'	32.2 222222
	1	32.2 407407
	2	32.2 592593
	3	32.2 777778
	4	32.2 962963
	5	32.3 148148
	6	32.3 333333
	7	32.3 518519
	8	32.3 703704
	9	32.3 888889
	10	32.4 074074
	11	32.4 259259
	12	32.4 444444
	13	32.4 629630
	14	32.4 814815
	15	32.5 000000
	16	32.5 185185
	17	32.5 370370
	18	32.5 555556
	19	32.5 740741
	20	32.5 925926
	21	32.6 111111
	22	32.6 296296
	23	32.6 481481
	24	32.6 666667
	25	32.6 851852
	26	32.7 037037
	27	32.7 222222
	28	32.7 407407
	29	32.7 592593
	30	32.7 777778

29°	30'	32.7 777778
	31	32.7 962963
	32	32.8 148148
	33	32.8 333333
	34	32.8 518519
	35	32.8 703704
	36	32.8 888889
	37	32.9 074074
	38	32.9 259259
	39	32.9 444444
	40	32.9 629630
	41	32.9 814815
	42	33.0 000000
	43	33.0 185185
	44	33.0 370370
	45	33.0 555556
	46	33.0 740741
	47	33.0 925926
	48	33.1 111111
	49	33.1 296296
	50	33.1 481481
	51	33.1 666667
	52	33.1 851852
	53	33.2 037037
	54	33.2 222222
	55	33.2 407407
	56	33.2 592593
	57	33.2 777778
	58	33.2 962963
	59	33.3 148148
	60	33.3 333333



30°	0'	33.3333333
	1	33.3518519
	2	33.3703704
	3	33.3888889
	4	33.4074074
	5	33.4259259
	6	33.4444444
	7	33.4629630
	8	33.4814815
	9	33.5000000
	10	33.5185185
	11	33.5370370
	12	33.5555556
	13	33.5740741
	14	33.5925926
	15	33.6111111
	16	33.6296296
	17	33.6481481
	18	33.6666667
	19	33.6851852
	20	33.7037037
	21	33.7222222
	22	33.7407407
	23	33.7592593
	24	33.7777778
	25	33.7962963
	26	33.8148148
	27	33.8333333
	28	33.8518519
	29	33.8703704
	30	33.8888889

30°	30	33.8888889
	31	33.9074074
	32	33.9259259
	33	33.9444444
	34	33.9629630
	35	33.9814815
	36	34.0000000
	37	34.0185185
	38	34.0370370
	39	34.0555556
	40	34.0740741
	41	34.0925926
	42	34.1111111
	43	34.1296296
	44	34.1481481
	45	34.1666667
	46	34.1851852
	47	34.2037037
	48	34.2222222
	49	34.2407407
	50	34.2592593
	51	34.2777778
	52	34.2962963
	53	34.3148148
	54	34.3333333
	55	34.3518519
	56	34.3703704
	57	34.3888889
	58	34.4074074
	59	34.4259259
	60	34.4444444

31°	
0'	3 4.4 4 4 4 4 4 4
1	3 4.4 6 2 9 6 3 0
2	3 4.4 8 1 4 8 1 5
3	3 4.5 0 0 0 0 0 0
4	3 4.5 1 8 5 1 8 5
5	3 4.5 3 7 0 3 7 0
6	3 4.5 5 5 5 5 5 6
7	3 4.5 7 4 0 7 4 1
8	3 4.5 9 2 5 9 2 6
9	3 4.6 1 1 1 1 1 1
10	3 4.6 2 9 6 2 9 6
11	3 4.6 4 8 1 4 8 1
12	3 4.6 6 6 6 6 6 7
13	3 4.6 8 5 1 8 5 2
14	3 4.7 0 3 7 0 3 7
15	3 4.7 2 2 2 2 2 2
16	3 4.7 4 0 7 4 0 7
17	3 4.7 5 9 2 5 9 3
18	3 4.7 7 7 7 7 7 8
19	3 4.7 9 6 2 9 6 3
20	3 4.8 1 4 8 1 4 8
21	3 4.8 3 3 3 3 3 3
22	3 4.8 5 1 8 5 1 9
23	3 4.8 7 0 3 7 0 4
24	3 4.8 8 8 8 8 8 9
25	3 4.9 0 7 4 0 7 4
26	3 4.9 2 5 9 2 5 9
27	3 4.9 4 4 4 4 4 4
28	3 4.9 6 2 9 6 3 0
29	3 4.9 8 1 4 8 1 5
30	3 5.0 0 0 0 0 0 0

31°	
30'	3 5.0 0 0 0 0 0 0
31	3 5.0 1 8 5 1 8 5
32	3 5.0 3 7 0 3 7 0
33	3 5.0 5 5 5 5 5 6
34	3 5.0 7 4 0 7 4 1
35	3 5.0 9 2 5 9 2 6
36	3 5.1 1 1 1 1 1 1
37	3 5.1 2 9 6 2 9 6
38	3 5.1 4 8 1 4 8 1
39	3 5.1 6 6 6 6 6 7
40	3 5.1 8 5 1 8 5 2
41	3 5.2 0 3 7 0 3 7
42	3 5.2 2 2 2 2 2 2
43	3 5.2 4 0 7 4 0 7
44	3 5.2 5 9 2 5 9 3
45	3 5.2 7 7 7 7 7 8
46	3 5.2 9 6 2 9 6 3
47	3 5.3 1 4 8 1 4 8
48	3 5.3 3 3 3 3 3 3
49	3 5.3 5 1 8 5 1 9
50	3 5.3 7 0 3 7 0 4
51	3 5.3 8 8 8 8 8 9
52	3 5.4 0 7 4 0 7 4
53	3 5.4 2 5 9 2 5 9
54	3 5.4 4 4 4 4 4 4
55	3 5.4 6 2 9 6 3 0
56	3 5.4 8 1 4 8 1 5
57	3 5.5 0 0 0 0 0 0
58	3 5.5 1 8 5 1 8 5
59	3 5.5 3 7 0 3 7 0
60	3 5.5 5 5 5 5 5 6

32°

0'	35.5 55555 6
1	35.5 74074 1
2	35.5 92592 6
3	35.6 11111 1
4	35.6 29629 6
5	35.6 48148 1
6	35.6 66666 7
7	35.6 85185 2
8	35.7 03703 7
9	35.7 22222 2
10	35.7 40740 7
11	35.7 59259 3
12	35.7 77777 8
13	35.7 96296 3
14	35.8 14814 8
15	35.8 33333 3
16	35.8 51851 9
17	35.8 70370 4
18	35.8 88888 9
19	35.9 07407 4
20	35.9 25925 9
21	35.9 44444 4
22	35.9 62963 0
23	35.9 81481 5
24	36.0 00000 0
25	36.0 18518 5
26	36.0 37037 0
27	36.0 55555 6
28	36.0 74074 1
29	36.0 92592 6
30	36.1 11111 1

32°

30'	36.1 11111 1
31	36.1 29629 6
32	36.1 48148 1
33	36.1 66666 7
34	36.1 85185 2
35	36.2 03703 7
36	36.2 22222 2
37	36.2 40740 7
38	36.2 59259 3
39	36.2 77777 8
40	36.2 96296 3
41	36.3 14814 8
42	36.3 33333 3
43	36.3 51851 9
44	36.3 70370 4
45	36.3 88888 9
46	36.4 07407 4
47	36.4 25925 9
48	36.4 44444 4
49	36.4 62963 0
50	36.4 81481 5
51	36.5 00000 0
52	36.5 18518 5
53	36.5 37037 0
54	36.5 55555 6
55	36.5 74074 1
56	36.5 92592 6
57	36.6 11111 1
58	36.6 29629 6
59	36.6 48148 1
60	36.6 66666 7

35.

33°	0	36.6666667
	1	36.6851852
	2	36.7037037
	3	36.7222222
	4	36.7407407
	5	36.7592593
	6	36.7777778
	7	36.7962963
	8	36.8148148
	9	36.8333333
	10	36.8518519
	11	36.8703704
	12	36.8888889
	13	36.9074074
	14	36.9259259
	15	36.9444444
	16	36.9629630
	17	36.9814815
	18	37.0000000
	19	37.0185185
	20	37.0370370
	21	37.0555556
	22	37.0740741
	23	37.0925926
	24	37.1111111
	25	37.1296296
	26	37.1481481
	27	37.1666667
	28	37.1851852
	29	37.2037037
	30	37.2222222

33°	30'	37.2222222
	31	37.2407407
	32	37.2592593
	33	37.2777778
	34	37.2962963
	35	37.3148148
	36	37.3333333
	37	37.3518519
	38	37.3703704
	39	37.3888889
	40	37.4074074
	41	37.4259259
	42	37.4444444
	43	37.4629630
	44	37.4814815
	45	37.5000000
	46	37.5185185
	47	37.5370370
	48	37.5555556
	49	37.5740741
	50	37.5925926
	51	37.6111111
	52	37.6296296
	53	37.6481481
	54	37.6666667
	55	37.6851852
	56	37.7037037
	57	37.7222222
	58	37.7407407
	59	37.7592593
	60	37.7777778

34°	0'	37.7777778
	1	37.7962963
	2	37.8148148
	3	37.8333333
	4	37.8518519
	5	37.8703704
	6	37.8888889
	7	37.9074074
	8	37.9259259
	9	37.9444444
	10	37.9629630
	11	37.9814815
	12	38.0000000
	13	38.0185185
	14	38.0370370
	15	38.0555556
	16	38.0740741
	17	38.0925926
	18	38.1111111
	19	38.1296296
	20	38.1481481
	21	38.1666667
	22	38.1851852
	23	38.2037037
	24	38.2222222
	25	38.2407407
	26	38.2592593
	27	38.2777778
	28	38.2962963
	29	38.3148148
	30	38.3333333

34°	30'	38.3333333
	31	38.3518519
	32	38.3703704
	33	38.3888889
	34	38.4074074
	35	38.4259259
	36	38.4444444
	37	38.4629630
	38	38.4814815
	39	38.5000000
	40	38.5185185
	41	38.5370370
	42	38.5555556
	43	38.5740741
	44	38.5925926
	45	38.6111111
	46	38.6296296
	47	38.6481481
	48	38.6666667
	49	38.6851852
	50	38.7037037
	51	38.7222222
	52	38.7407407
	53	38.7592593
	54	38.7777778
	55	38.7962963
	56	38.8148148
	57	38.8333333
	58	38.8518519
	59	38.8703704
	60	38.8888889

35°	0'	38.8888889
	1	38.9074074
	2	38.9259259
	3	38.9444444
	4	38.9629630
	5	38.9814815
	6	39.0000000
	7	39.0185185
	8	39.0370370
	9	39.0555556
	10	39.0740741
	11	39.0925926
	12	39.1111111
	13	39.1296296
	14	39.1481481
	15	39.1666667
	16	39.1851852
	17	39.2037037
	18	39.2222222
	19	39.2407407
	20	39.2592593
	21	39.2777778
	22	39.2962963
	23	39.3148148
	24	39.3333333
	25	39.3518519
	26	39.3703704
	27	39.3888889
	28	39.4074074
	29	39.4259259
	30	39.4444444

35°	30'	39.4444444
	31	39.4629630
	32	39.4814815
	33	39.5000000
	34	39.5185185
	35	39.5370370
	36	39.5555556
	37	39.5740741
	38	39.5925926
	39	39.6111111
	40	39.6296296
	41	39.6481481
	42	39.6666667
	43	39.6851852
	44	39.7037037
	45	39.7222222
	46	39.7407407
	47	39.7592593
	48	39.7777778
	49	39.7962963
	50	39.8148148
	51	39.8333333
	52	39.8518519
	53	39.8703704
	54	39.8888889
	55	39.9074074
	56	39.9259259
	57	39.9444444
	58	39.9629630
	59	39.9814815
	60	40.0000000

36°	0'	40.0000000
	1	40.0185185
	2	40.0370370
	3	40.0555556
	4	40.0740741
	5	40.0925926
	6	40.1111111
	7	40.1296296
	8	40.1481481
	9	40.1666667
	10	40.1851852
	11	40.2037037
	12	40.2222222
	13	40.2407407
	14	40.2592593
	15	40.2777778
	16	40.2962963
	17	40.3148148
	18	40.3333333
	19	40.3518519
	20	40.3703704
	21	40.3888889
	22	40.4074074
	23	40.4259259
	24	40.4444444
	25	40.4629630
	26	40.4814815
	27	40.5000000
	28	40.5185185
	29	40.5370370
	30	40.5555556

36°	30'	40.5555556
	31	40.5740741
	32	40.5925926
	33	40.6111111
	34	40.6296296
	35	40.6481481
	36	40.6666667
	37	40.6851852
	38	40.7037037
	39	40.7222222
	40	40.7407407
	41	40.7592593
	42	40.7777778
	43	40.7962963
	44	40.8148148
	45	40.8333333
	46	40.8518519
	47	40.8703704
	48	40.8888889
	49	40.9074074
	50	40.9259259
	51	40.9444444
	52	40.9629630
	53	40.9814815
	54	41.0000000
	55	41.0185185
	56	41.0370370
	57	41.0555556
	58	41.0740741
	59	41.0925926
	60	41.1111111

37°	0°	41.1 1 1 1 1 1 1	37°	30°	41.6 6 6 6 6 6 7
	1	41.1 2 9 6 2 9 6		31	41.6 8 5 1 8 5 2
	2	41.1 4 8 1 4 8 1		32	41.7 0 3 7 0 3 7
	3	41.1 6 6 6 6 6 7		33	41.7 2 2 2 2 2 2
	4	41.1 8 5 1 8 5 2		34	41.7 4 0 7 4 0 7
	5	41.2 0 3 7 0 3 7		35	41.7 5 9 2 5 9 3
	6	41.2 2 2 2 2 2 2		36	41.7 7 7 7 7 7 0
	7	41.2 4 0 7 4 0 7		37	41.7 9 6 2 9 6 3
	8	41.2 5 9 2 5 9 3		38	41.8 1 4 8 1 4 0
	9	41.2 7 7 7 7 7 0		39	41.8 3 3 3 3 3 3
	10	41.2 9 6 2 9 6 3		40	41.8 5 1 8 5 1 9
	11	41.3 1 4 8 1 4 0		41	41.8 7 0 3 7 0 4
	12	41.3 3 3 3 3 3 3		42	41.8 8 8 8 8 8 9
	13	41.3 5 1 8 5 1 9		43	41.9 0 7 4 0 7 4
	14	41.3 7 0 3 7 0 4		44	41.9 2 5 9 2 5 9
	15	41.3 8 8 8 8 8 9		45	41.9 4 4 4 4 4 4
	16	41.4 0 7 4 0 7 4		46	41.9 6 2 9 6 3 0
	17	41.4 2 5 9 2 5 9		47	41.9 8 1 4 8 1 5
	18	41.4 4 4 4 4 4 4		48	42.0 0 0 0 0 0 0
	19	41.4 6 2 9 6 3 0		49	42.0 1 8 5 1 8 5
	20	41.4 8 1 4 8 1 5		50	42.0 3 7 0 3 7 0
	21	41.5 0 0 0 0 0 0		51	42.0 5 5 5 5 5 6
	22	41.5 1 8 5 1 8 5		52	42.0 7 4 0 7 4 1
	23	41.5 3 7 0 3 7 0		53	42.0 9 2 5 9 2 6
	24	41.5 5 5 5 5 5 6		54	42.1 1 1 1 1 1 1
	25	41.5 7 4 0 7 4 1		55	42.1 2 9 6 2 9 6
	26	41.5 9 2 5 9 2 6		56	42.1 4 8 1 4 8 1
	27	41.6 1 1 1 1 1 1		57	42.1 6 6 6 6 6 7
	28	41.6 2 9 6 2 9 6		58	42.1 8 5 1 8 5 2
	29	41.6 4 8 1 4 8 1		59	42.2 0 3 7 0 3 7
	30	41.6 6 6 6 6 6 7		60	42.2 2 2 2 2 2 2



38°	0'	42.2222222	38°	30'	42.7777778
	1	42.2407407		31	42.7962963
	2	42.2592593		32	42.8148148
	3	42.2777778		33	42.8333333
	4	42.2962963		34	42.8518519
	5	42.3148148		35	42.8703704
	6	42.3333333		36	42.8888889
	7	42.3518519		37	42.9074074
	8	42.3703704		38	42.9259259
	9	42.3888889		39	42.9444444
	10	42.4074074		40	42.9629630
	11	42.4259259		41	42.9814815
	12	42.4444444		42	43.0000000
	13	42.4629630		43	43.0185185
	14	42.4814815		44	43.0370370
	15	42.5000000		45	43.0555556
	16	42.5185185		46	43.0740741
	17	42.5370370		47	43.0925926
	18	42.5555556		48	43.1111111
	19	42.5740741		49	43.1296296
	20	42.5925926		50	43.1481481
	21	42.6111111		51	43.1666667
	22	42.6296296		52	43.1851852
	23	42.6481481		53	43.2037037
	24	42.6666667		54	43.2222222
	25	42.6851852		55	43.2407407
	26	42.7037037		56	43.2592593
	27	42.7222222		57	43.2777778
	28	42.7407407		58	43.2962963
	29	42.7592593		59	43.3148148
	30	42.7777778		60	43.3333333

3 3°	0'	43.3 3 333333
	1	43.3 5 1851 3
	2	43.3 7 0370 4
	3	43.3 8 8888 3
	4	43.4 0 7407 4
	5	43.4 2 5925 3
	6	43.4 4 4444 4
	7	43.4 6 2963 0
	8	43.4 8 1481 5
	9	43.5 0 0000 0
	10	43.5 1 8518 5
	11	43.5 3 7037 0
	12	43.5 5 5555 6
	13	43.5 7 4074 1
	14	43.5 9 2592 6
	15	43.6 1 1111 1
	16	43.6 2 9629 6
	17	43.6 4 8148 1
	18	43.6 6 6666 7
	19	43.6 8 5185 2
	20	43.7 0 3703 7
	21	43.7 2 2222 2
	22	43.7 4 0740 7
	23	43.7 5 9259 3
	24	43.7 7 7777 0
	25	43.7 9 6296 3
	26	43.8 1 4814 0
	27	43.8 3 3333 3
	28	43.8 5 1851 3
	29	43.8 7 0370 4
	30	43.8 8 8888 3

3 3°	30'	43.8 8 8888 3
	31	43.9 0 7407 4
	32	43.9 2 5925 3
	33	43.9 4 4444 4
	34	43.9 6 2963 0
	35	43.9 8 1481 5
	36	44.0 0 0000 0
	37	44.0 1 8518 5
	38	44.0 3 7037 0
	39	44.0 5 5555 6
	40	44.0 7 4074 1
	41	44.0 9 2592 6
	42	44.1 1 1111 1
	43	44.1 2 9629 6
	44	44.1 4 8148 1
	45	44.1 6 6666 7
	46	44.1 8 5185 2
	47	44.2 0 3703 7
	48	44.2 2 2222 2
	49	44.2 4 0740 7
	50	44.2 5 9259 3
	51	44.2 7 7777 0
	52	44.2 9 6296 3
	53	44.3 1 4814 0
	54	44.3 3 3333 3
	55	44.3 5 1851 3
	56	44.3 7 0370 4
	57	44.3 8 8888 3
	58	44.4 0 7407 4
	59	44.4 2 5925 3
	60	44.4 4 4444 4

4.0	0	44.4444444
	1	44.4629630
	2	44.4814815
	3	44.5000000
	4	44.5185185
	5	44.5370370
	6	44.5555556
	7	44.5740741
	8	44.5925926
	9	44.6111111
	10	44.6296296
	11	44.6481481
	12	44.6666667
	13	44.6851852
	14	44.7037037
	15	44.7222222
	16	44.7407407
	17	44.7592593
	18	44.7777778
	19	44.7962963
	20	44.8148148
	21	44.8333333
	22	44.8518519
	23	44.8703704
	24	44.8888889
	25	44.9074074
	26	44.9259259
	27	44.9444444
	28	44.9629630
	29	44.9814815
	30	45.0000000

4.0	30	45.0000000
	31	45.0185185
	32	45.0370370
	33	45.0555556
	34	45.0740741
	35	45.0925926
	36	45.1111111
	37	45.1296296
	38	45.1481481
	39	45.1666667
	40	45.1851852
	41	45.2037037
	42	45.2222222
	43	45.2407407
	44	45.2592593
	45	45.2777778
	46	45.2962963
	47	45.3148148
	48	45.3333333
	49	45.3518519
	50	45.3703704
	51	45.3888889
	52	45.4074074
	53	45.4259259
	54	45.4444444
	55	45.4629630
	56	45.4814815
	57	45.5000000
	58	45.5185185
	59	45.5370370
	60	45.5555556

41°	
0	45.5 5 5555 6
1	45.5 7 4074 1
2	45.5 9 2592 6
3	45.6 1 1111 1
4	45.6 2 9629 6
5	45.6 4 8148 1
6	45.6 6 6666 7
7	45.6 8 5185 2
8	45.7 0 3703 7
9	45.7 2 2222 2
10	45.7 4 0740 7
11	45.7 5 9259 3
12	45.7 7 7777 0
13	45.7 9 6296 3
14	45.8 1 4814 0
15	45.8 3 3333 3
16	45.8 5 1851 9
17	45.8 7 0370 4
18	45.8 8 8888 8
19	45.9 0 7407 4
20	45.9 2 5925 9
21	45.9 4 4444 4
22	45.9 6 2963 0
23	45.9 8 1481 5
24	46.0 0 0000 0
25	46.0 1 8518 5
26	46.0 3 7037 0
27	46.0 5 5555 6
28	46.0 7 4074 1
29	46.0 9 2592 6
30	46.1 1 1111 1

41° 30'	
30	46.1 1 1111 1
31	46.1 2 9629 6
32	46.1 4 8148 1
33	46.1 6 6666 7
34	46.1 8 5185 2
35	46.2 0 3703 7
36	46.2 2 2222 2
37	46.2 4 0740 7
38	46.2 5 9259 3
39	46.2 7 7777 0
40	46.2 9 6296 3
41	46.3 1 4814 0
42	46.3 3 3333 3
43	46.3 5 1851 9
44	46.3 7 0370 4
45	46.3 8 8888 8
46	46.4 0 7407 4
47	46.4 2 5925 9
48	46.4 4 4444 4
49	46.4 6 2963 0
50	46.4 8 1481 5
51	46.5 0 0000 0
52	46.5 1 8518 5
53	46.5 3 7037 0
54	46.5 5 5555 6
55	46.5 7 4074 1
56	46.5 9 2592 6
57	46.6 1 1111 1
58	46.6 2 9629 6
59	46.6 4 8148 1
60	46.6 6 6666 7

42°	0'	46.66666667
	1	46.6851852
	2	46.7037037
	3	46.7222222
	4	46.7407407
	5	46.7592593
	6	46.7777778
	7	46.7962963
	8	46.8148148
	9	46.8333333
	10	46.8518519
	11	46.8703704
	12	46.8888889
	13	46.9074074
	14	46.9259259
	15	46.9444444
	16	46.9629630
	17	46.9814815
	18	47.0000000
	19	47.0185185
	20	47.0370370
	21	47.0555556
	22	47.0740741
	23	47.0925926
	24	47.1111111
	25	47.1296296
	26	47.1481481
	27	47.1666667
	28	47.1851852
	29	47.2037037
	30	47.2222222

42°	30'	47.2222222
	31	47.2407407
	32	47.2592593
	33	47.2777778
	34	47.2962963
	35	47.3148148
	36	47.3333333
	37	47.3518519
	38	47.3703704
	39	47.3888889
	40	47.4074074
	41	47.4259259
	42	47.4444444
	43	47.4629630
	44	47.4814815
	45	47.5000000
	46	47.5185185
	47	47.5370370
	48	47.5555556
	49	47.5740741
	50	47.5925926
	51	47.6111111
	52	47.6296296
	53	47.6481481
	54	47.6666667
	55	47.6851852
	56	47.7037037
	57	47.7222222
	58	47.7407407
	59	47.7592593
	60	47.7777778

43°	0'	47.77777778	43°	30'	48.33333333
	1	47.7962963		31	48.3518519
	2	47.8148148		32	48.3703704
	3	47.83333333		33	48.38888889
	4	47.8518519		34	48.4074074
	5	47.8703704		35	48.4259259
	6	47.88888889		36	48.44444444
	7	47.9074074		37	48.4629630
	8	47.9259259		38	48.4814815
	9	47.94444444		39	48.50000000
	10	47.9629630		40	48.5185185
	11	47.9814815		41	48.5370370
	12	48.00000000		42	48.55555556
	13	48.0185185		43	48.5740741
	14	48.0370370		44	48.5925926
	15	48.05555556		45	48.61111111
	16	48.0740741		46	48.6296296
	17	48.0925926		47	48.6481481
	18	48.11111111		48	48.66666667
	19	48.1296296		49	48.6851852
	20	48.1481481		50	48.7037037
	21	48.16666667		51	48.7222222
	22	48.1851852		52	48.7407407
	23	48.2037037		53	48.7592593
	24	48.2222222		54	48.77777778
	25	48.2407407		55	48.7962963
	26	48.2592593		56	48.8148148
	27	48.27777778		57	48.83333333
	28	48.2962963		58	48.8518519
	29	48.3148148		59	48.8703704
	30	48.33333333		60	48.88888889

44°	0'	48.88888889
	1	48.9074074
	2	48.9259259
	3	48.9444444
	4	48.9629630
	5	48.9814815
	6	49.0000000
	7	49.0185185
	8	49.0370370
	9	49.0555556
	10	49.0740741
	11	49.0925926
	12	49.1111111
	13	49.1296296
	14	49.1481481
	15	49.1666667
	16	49.1851852
	17	49.2037037
	18	49.2222222
	19	49.2407407
	20	49.2592593
	21	49.2777778
	22	49.2962963
	23	49.3148148
	24	49.3333333
	25	49.3518519
	26	49.3703704
	27	49.3888889
	28	49.4074074
	29	49.4259259
	30	49.4444444

44°	30'	49.4444444
	31	49.4629630
	32	49.4814815
	33	49.5000000
	34	49.5185185
	35	49.5370370
	36	49.5555556
	37	49.5740741
	38	49.5925926
	39	49.6111111
	40	49.6296296
	41	49.6481481
	42	49.6666667
	43	49.6851852
	44	49.7037037
	45	49.7222222
	46	49.7407407
	47	49.7592593
	48	49.7777778
	49	49.7962963
	50	49.8148148
	51	49.8333333
	52	49.8518519
	53	49.8703704
	54	49.8888889
	55	49.9074074
	56	49.9259259
	57	49.9444444
	58	49.9629630
	59	49.9814815
	60	50.0000000

45°	0'	50.0 0 00000
	1	50.0 1 85185
	2	50.0 3 70370
	3	50.0 5 55556
	4	50.0 7 40741
	5	50.0 9 25926
	6	50.1 1 11111
	7	50.1 2 96296
	8	50.1 4 81481
	9	50.1 6 66667
	10	50.1 8 51852
	11	50.2 0 37037
	12	50.2 2 22222
	13	50.2 4 07407
	14	50.2 5 92593
	15	50.2 7 77777
	16	50.2 9 62963
	17	50.3 1 48148
	18	50.3 3 33333
	19	50.3 5 18519
	20	50.3 7 03704
	21	50.3 8 88889
	22	50.4 0 74074
	23	50.4 2 59259
	24	50.4 4 44444
	25	50.4 6 29630
	26	50.4 8 14815
	27	50.5 0 00000
	28	50.5 1 85185
	29	50.5 3 70370
	30	50.5 5 55556

45°	30'	50.5 5 55556
	31	50.5 7 40741
	32	50.5 9 25926
	33	50.6 1 11111
	34	50.6 2 96296
	35	50.6 4 81481
	36	50.6 6 66667
	37	50.6 8 51852
	38	50.7 0 37037
	39	50.7 2 22222
	40	50.7 4 07407
	41	50.7 5 92593
	42	50.7 7 77777
	43	50.7 9 62963
	44	50.8 1 48148
	45	50.8 3 33333
	46	50.8 5 18519
	47	50.8 7 03704
	48	50.8 8 88889
	49	50.9 0 74074
	50	50.9 2 59259
	51	50.9 4 44444
	52	50.9 6 29630
	53	50.9 8 14815
	54	51.0 0 00000
	55	51.0 1 85185
	56	51.0 3 70370
	57	51.0 5 55556
	58	51.0 7 40741
	59	51.0 9 25926
	60	51.1 1 11111



46°	0'	51.11111111
	1	51.1296296
	2	51.1481481
	3	51.16666667
	4	51.1851852
	5	51.2037037
	6	51.2222222
	7	51.2407407
	8	51.2592593
	9	51.27777778
	10	51.2962963
	11	51.3148148
	12	51.33333333
	13	51.3518519
	14	51.3703704
	15	51.38888889
	16	51.4074074
	17	51.4259259
	18	51.4444444
	19	51.4629630
	20	51.4814815
	21	51.5000000
	22	51.5185185
	23	51.5370370
	24	51.55555556
	25	51.5740741
	26	51.5925926
	27	51.61111111
	28	51.6296296
	29	51.6481481
	30	51.66666667

46°	30'	51.66666667
	31	51.6851852
	32	51.7037037
	33	51.7222222
	34	51.7407407
	35	51.7592593
	36	51.77777778
	37	51.7962963
	38	51.8148148
	39	51.83333333
	40	51.8518519
	41	51.8703704
	42	51.88888889
	43	51.9074074
	44	51.9259259
	45	51.9444444
	46	51.9629630
	47	51.9814815
	48	52.0000000
	49	52.0185185
	50	52.0370370
	51	52.05555556
	52	52.0740741
	53	52.0925926
	54	52.11111111
	55	52.1296296
	56	52.1481481
	57	52.16666667
	58	52.1851852
	59	52.2037037
	60	52.2222222

47°	0	52.2222222	47°	30'	52.7777778
	1	52.2407407		31	52.7962963
	2	52.2592593		32	52.8148148
	3	52.2777778		33	52.8333333
	4	52.2962963		34	52.8518519
	5	52.3148148		35	52.8703704
	6	52.3333333		36	52.8888889
	7	52.3518519		37	52.9074074
	8	52.3703704		38	52.9259259
	9	52.3888889		39	52.9444444
	10	52.4074074		40	52.9629630
	11	52.4259259		41	52.9814815
	12	52.4444444		42	53.0000000
	13	52.4629630		43	53.0185185
	14	52.4814815		44	53.0370370
	15	52.5000000		45	53.0555556
	16	52.5185185		46	53.0740741
	17	52.5370370		47	53.0925926
	18	52.5555556		48	53.1111111
	19	52.5740741		49	53.1296296
	20	52.5925926		50	53.1481481
	21	52.6111111		51	53.1666667
	22	52.6296296		52	53.1851852
	23	52.6481481		53	53.2037037
	24	52.6666667		54	53.2222222
	25	52.6851852		55	53.2407407
	26	52.7037037		56	53.2592593
	27	52.7222222		57	53.2777778
	28	52.7407407		58	53.2962963
	29	52.7592593		59	53.3148148
	30	52.7777778		60	53.3333333

40°	0'	53.333333
	1	53.351851
	2	53.370370
	3	53.388888
	4	53.407407
	5	53.425925
	6	53.444444
	7	53.462963
	8	53.481481
	9	53.500000
	10	53.518518
	11	53.537037
	12	53.555556
	13	53.574074
	14	53.592592
	15	53.611111
	16	53.629629
	17	53.648148
	18	53.666667
	19	53.685185
	20	53.703703
	21	53.722222
	22	53.740740
	23	53.759259
	24	53.777777
	25	53.796296
	26	53.814814
	27	53.833333
	28	53.851851
	29	53.870370
	30	53.888888

40°	30'	53.888888
	31	53.907407
	32	53.925925
	33	53.944444
	34	53.962963
	35	53.981481
	36	54.000000
	37	54.018518
	38	54.037037
	39	54.055555
	40	54.074074
	41	54.092592
	42	54.111111
	43	54.129629
	44	54.148148
	45	54.166666
	46	54.185185
	47	54.203703
	48	54.222222
	49	54.240740
	50	54.259259
	51	54.277777
	52	54.296296
	53	54.314814
	54	54.333333
	55	54.351851
	56	54.370370
	57	54.388888
	58	54.407407
	59	54.425925
	60	54.444444

49° 0'	54.444444
1	54.4629630
2	54.4814815
3	54.5000000
4	54.5185185
5	54.5370370
6	54.5555556
7	54.5740741
8	54.5925926
9	54.6111111
10	54.6296296
11	54.6481481
12	54.6666667
13	54.6851852
14	54.7037037
15	54.7222222
16	54.7407407
17	54.7592593
18	54.7777778
19	54.7962963
20	54.8148148
21	54.8333333
22	54.8518519
23	54.8703704
24	54.8888889
25	54.9074074
26	54.9259259
27	54.9444444
28	54.9629630
29	54.9814815
30	55.0000000

49° 30'	55.0000000
31	55.0185185
32	55.0370370
33	55.0555556
34	55.0740741
35	55.0925926
36	55.1111111
37	55.1296296
38	55.1481481
39	55.1666667
40	55.1851852
41	55.2037037
42	55.2222222
43	55.2407407
44	55.2592593
45	55.2777778
46	55.2962963
47	55.3148148
48	55.3333333
49	55.3518519
50	55.3703704
51	55.3888889
52	55.4074074
53	55.4259259
54	55.4444444
55	55.4629630
56	55.4814815
57	55.5000000
58	55.5185185
59	55.5370370
60	55.5555556

50°	0'	55.5 5 5555 6
	1	55.5 7 4074 1
	2	55.5 9 2592 6
	3	55.6 1 1111 1
	4	55.6 2 9629 6
	5	55.6 4 8148 1
	6	55.6 6 6666 7
	7	55.6 8 5185 2
	8	55.7 0 3703 7
	9	55.7 2 2222 2
	10	55.7 4 0740 7
	11	55.7 5 9259 3
	12	55.7 7 7777 0
	13	55.7 9 6296 3
	14	55.8 1 4814 0
	15	55.8 3 3333 3
	16	55.8 5 1851 9
	17	55.8 7 0370 4
	18	55.8 8 8888 9
	19	55.9 0 7407 4
	20	55.9 2 5925 9
	21	55.9 4 4444 4
	22	55.9 6 2963 0
	23	55.9 8 1481 5
	24	56.0 0 0000 0
	25	56.0 1 8518 5
	26	56.0 3 7037 0
	27	56.0 5 5555 6
	28	56.0 7 4074 1
	29	56.0 9 2592 6
	30	56.1 1 1111 1

50°	30'	56.1 1 1111 1
	31	56.1 2 9629 6
	32	56.1 4 8148 1
	33	56.1 6 6666 7
	34	56.1 8 5185 2
	35	56.2 0 3703 7
	36	56.2 2 2222 2
	37	56.2 4 0740 7
	38	56.2 5 9259 3
	39	56.2 7 7777 0
	40	56.2 9 6296 3
	41	56.3 1 4814 0
	42	56.3 3 3333 3
	43	56.3 5 1851 9
	44	56.3 7 0370 4
	45	56.3 8 8888 9
	46	56.4 0 7407 4
	47	56.4 2 5925 9
	48	56.4 4 4444 4
	49	56.4 6 2963 0
	50	56.4 8 1481 5
	51	56.5 0 0000 0
	52	56.5 1 8518 5
	53	56.5 3 7037 0
	54	56.5 5 5555 6
	55	56.5 7 4074 1
	56	56.5 9 2592 6
	57	56.6 1 1111 1
	58	56.6 2 9629 6
	59	56.6 4 8148 1
	60	56.6 6 6666 7

51°	0'	56.6 6 6666 7
	1	56.6 8 5185 2
	2	56.7 0 3703 7
	3	56.7 2 2222 2
	4	56.7 4 0740 7
	5	56.7 5 9259 3
	6	56.7 7 7777 0
	7	56.7 9 6296 3
	8	56.8 1 4814 0
	9	56.8 3 3333 3
	10	56.8 5 1851 9
	11	56.8 7 0370 4
	12	56.8 8 8888 8
	13	56.9 0 7407 4
	14	56.9 2 5925 9
	15	56.9 4 4444 4
	16	56.9 6 2963 0
	17	56.9 8 1481 5
	18	57.0 0 0000 0
	19	57.0 1 8518 5
	20	57.0 3 7037 0
	21	57.0 5 5555 6
	22	57.0 7 4074 1
	23	57.0 9 2592 6
	24	57.1 1 1111 1
	25	57.1 2 9629 6
	26	57.1 4 8148 1
	27	57.1 6 6666 7
	28	57.1 8 5185 2
	29	57.2 0 3703 7
	30	57.2 2 2222 2

51°	30'	57.2 2 2222 2
	31	57.2 4 0740 7
	32	57.2 5 9259 3
	33	57.2 7 7777 0
	34	57.2 9 6296 3
	35	57.3 1 4814 0
	36	57.3 3 3333 3
	37	57.3 5 1851 9
	38	57.3 7 0370 4
	39	57.3 8 8888 8
	40	57.4 0 7407 4
	41	57.4 2 5925 9
	42	57.4 4 4444 4
	43	57.4 6 2963 0
	44	57.4 8 1481 5
	45	57.5 0 0000 0
	46	57.5 1 8518 5
	47	57.5 3 7037 0
	48	57.5 5 5555 6
	49	57.5 7 4074 1
	50	57.5 9 2592 6
	51	57.6 1 1111 1
	52	57.6 2 9629 6
	53	57.6 4 8148 1
	54	57.6 6 6666 7
	55	57.6 8 5185 2
	56	57.7 0 3703 7
	57	57.7 2 2222 2
	58	57.7 4 0740 7
	59	57.7 5 9259 3
	60	57.7 7 7777 0

52°	0'	57.7 7 777770
	1	57.7 9 62963
	2	57.8 1 48140
	3	57.8 3 333333
	4	57.8 5 18519
	5	57.8 7 03704
	6	57.8 8 888889
	7	57.9 0 74074
	8	57.9 2 59259
	9	57.9 4 44444
	10	57.9 6 29630
	11	57.9 8 14815
	12	58.0 0 000000
	13	58.0 1 85185
	14	58.0 3 70370
	15	58.0 5 555556
	16	58.0 7 40741
	17	58.0 9 25926
	18	58.1 1 111111
	19	58.1 2 96296
	20	58.1 4 81481
	21	58.1 6 666667
	22	58.1 8 51852
	23	58.2 0 37037
	24	58.2 2 222222
	25	58.2 4 07407
	26	58.2 5 92593
	27	58.2 7 777770
	28	58.2 9 62963
	29	58.3 1 48140
	30	58.3 3 333333

52°	30'	58.3 3 333333
	31	58.3 5 18519
	32	58.3 7 03704
	33	58.3 8 888889
	34	58.4 0 74074
	35	58.4 2 59259
	36	58.4 4 44444
	37	58.4 6 29630
	38	58.4 8 14815
	39	58.5 0 000000
	40	58.5 1 85185
	41	58.5 3 70370
	42	58.5 5 555556
	43	58.5 7 40741
	44	58.5 9 25926
	45	58.6 1 111111
	46	58.6 2 96296
	47	58.6 4 81481
	48	58.6 6 666667
	49	58.6 8 51852
	50	58.7 0 37037
	51	58.7 2 222222
	52	58.7 4 07407
	53	58.7 5 92593
	54	58.7 7 777770
	55	58.7 9 62963
	56	58.8 1 48140
	57	58.8 3 333333
	58	58.8 5 18519
	59	58.8 7 03704
	60	58.8 8 888889

53°	0'	58.88888889
	1	58.9074074
	2	58.9259259
	3	58.9444444
	4	58.9629630
	5	58.9814815
	6	59.0000000
	7	59.0185185
	8	59.0370370
	9	59.0555556
	10	59.0740741
	11	59.0925926
	12	59.1111111
	13	59.1296296
	14	59.1481481
	15	59.1666667
	16	59.1851852
	17	59.2037037
	18	59.2222222
	19	59.2407407
	20	59.2592593
	21	59.2777778
	22	59.2962963
	23	59.3148148
	24	59.3333333
	25	59.3518519
	26	59.3703704
	27	59.3888889
	28	59.4074074
	29	59.4259259
	30	59.4444444

53°	30'	59.4444444
	31	59.4629630
	32	59.4814815
	33	59.5000000
	34	59.5185185
	35	59.5370370
	36	59.5555556
	37	59.5740741
	38	59.5925926
	39	59.6111111
	40	59.6296296
	41	59.6481481
	42	59.6666667
	43	59.6851852
	44	59.7037037
	45	59.7222222
	46	59.7407407
	47	59.7592593
	48	59.7777778
	49	59.7962963
	50	59.8148148
	51	59.8333333
	52	59.8518519
	53	59.8703704
	54	59.8888889
	55	59.9074074
	56	59.9259259
	57	59.9444444
	58	59.9629630
	59	59.9814815
	60	60.0000000



54°

0	60.0 0 000000
1	60.0 1 85185
2	60.0 3 70370
3	60.0 5 55556
4	60.0 7 40741
5	60.0 9 25926
6	60.1 1 11111
7	60.1 2 96296
8	60.1 4 81481
9	60.1 6 66667
10	60.1 8 51852
11	60.2 0 37037
12	60.2 2 22222
13	60.2 4 07407
14	60.2 5 92593
15	60.2 7 77777
16	60.2 9 62963
17	60.3 1 48148
18	60.3 3 33333
19	60.3 5 18519
20	60.3 7 03704
21	60.3 8 88889
22	60.4 0 74074
23	60.4 2 59259
24	60.4 4 44444
25	60.4 6 29630
26	60.4 8 14815
27	60.5 0 00000
28	60.5 1 85185
29	60.5 3 70370
30	60.5 5 55556

54°

30	60.5 5 55556
31	60.5 7 40741
32	60.5 9 25926
33	60.6 1 11111
34	60.6 2 96296
35	60.6 4 81481
36	60.6 6 66667
37	60.6 8 51852
38	60.7 0 37037
39	60.7 2 22222
40	60.7 4 07407
41	60.7 5 92593
42	60.7 7 77777
43	60.7 9 62963
44	60.8 1 48148
45	60.8 3 33333
46	60.8 5 18519
47	60.8 7 03704
48	60.8 8 88889
49	60.9 0 74074
50	60.9 2 59259
51	60.9 4 44444
52	60.9 6 29630
53	60.9 8 14815
54	61.0 0 00000
55	61.0 1 85185
56	61.0 3 70370
57	61.0 5 55556
58	61.0 7 40741
59	61.0 9 25926
60	61.1 1 11111

55°

0	61.1 1 1 1 1 1 1
1	61.1 2 9 6 2 9 6
2	61.1 4 8 1 4 8 1
3	61.1 6 6 6 6 6 7
4	61.1 8 5 1 8 5 2
5	61.2 0 3 7 0 3 7
6	61.2 2 2 2 2 2 2
7	61.2 4 0 7 4 0 7
8	61.2 5 9 2 5 9 3
9	61.2 7 7 7 7 7 0
10	61.2 9 6 2 9 6 3
11	61.3 1 4 8 1 4 0
12	61.3 3 3 3 3 3 3
13	61.3 5 1 8 5 1 9
14	61.3 7 0 3 7 0 4
15	61.3 8 8 8 8 8 9
16	61.4 0 7 4 0 7 4
17	61.4 2 5 9 2 5 9
18	61.4 4 4 4 4 4 4
19	61.4 6 2 9 6 3 0
20	61.4 8 1 4 8 1 5
21	61.5 0 0 0 0 0 0
22	61.5 1 8 5 1 8 5
23	61.5 3 7 0 3 7 0
24	61.5 5 5 5 5 5 6
25	61.5 7 4 0 7 4 1
26	61.5 9 2 5 9 2 6
27	61.6 1 1 1 1 1 1
28	61.6 2 9 6 2 9 6
29	61.6 4 8 1 4 8 1
30	61.6 6 6 6 6 6 7

55°

30	61.6 6 6 6 6 6 7
31	61.6 8 5 1 8 5 2
32	61.7 0 3 7 0 3 7
33	61.7 2 2 2 2 2 2
34	61.7 4 0 7 4 0 7
35	61.7 5 9 2 5 9 3
36	61.7 7 7 7 7 7 0
37	61.7 9 6 2 9 6 3
38	61.8 1 4 8 1 4 0
39	61.8 3 3 3 3 3 3
40	61.8 5 1 8 5 1 9
41	61.8 7 0 3 7 0 4
42	61.8 8 8 8 8 8 9
43	61.9 0 7 4 0 7 4
44	61.9 2 5 9 2 5 9
45	61.9 4 4 4 4 4 4
46	61.9 6 2 9 6 3 0
47	61.9 8 1 4 8 1 5
48	62.0 0 0 0 0 0 0
49	62.0 1 8 5 1 8 5
50	62.0 3 7 0 3 7 0
51	62.0 5 5 5 5 5 6
52	62.0 7 4 0 7 4 1
53	62.0 9 2 5 9 2 6
54	62.1 1 1 1 1 1 1
55	62.1 2 9 6 2 9 6
56	62.1 4 8 1 4 8 1
57	62.1 6 6 6 6 6 7
58	62.1 8 5 1 8 5 2
59	62.2 0 3 7 0 3 7
60	62.2 2 2 2 2 2 2

58.

56°	0'	62.2 2 22222
	1	62.2 4 07407
	2	62.2 5 92593
	3	62.2 7 77777
	4	62.2 9 62963
	5	62.3 1 48148
	6	62.3 3 33333
	7	62.3 5 18519
	8	62.3 7 03704
	9	62.3 8 88889
	10	62.4 0 74074
	11	62.4 2 59259
	12	62.4 4 44444
	13	62.4 6 29630
	14	62.4 8 14815
	15	62.5 0 00000
	16	62.5 1 85185
	17	62.5 3 70370
	18	62.5 5 55556
	19	62.5 7 40741
	20	62.5 9 25926
	21	62.6 1 11111
	22	62.6 2 96296
	23	62.6 4 81481
	24	62.6 6 66667
	25	62.6 8 51852
	26	62.7 0 37037
	27	62.7 2 22222
	28	62.7 4 07407
	29	62.7 5 92593
	30	62.7 7 77777

56°	30'	62.7 7 77777
	31	62.7 9 62963
	32	62.8 1 48148
	33	62.8 3 33333
	34	62.8 5 18519
	35	62.8 7 03704
	36	62.8 8 88889
	37	62.9 0 74074
	38	62.9 2 59259
	39	62.9 4 44444
	40	62.9 6 29630
	41	62.9 8 14815
	42	63.0 0 00000
	43	63.0 1 85185
	44	63.0 3 70370
	45	63.0 5 55556
	46	63.0 7 40741
	47	63.0 9 25926
	48	63.1 1 11111
	49	63.1 2 96296
	50	63.1 4 81481
	51	63.1 6 66667
	52	63.1 8 51852
	53	63.2 0 37037
	54	63.2 2 22222
	55	63.2 4 07407
	56	63.2 5 92593
	57	63.2 7 77777
	58	63.2 9 62963
	59	63.3 1 48148
	60	63.3 3 33333

57°	0'	63.3 3 333333	57°	30'	63.8 8 888889
	1	63.3 5 18519		31	63.9 0 74074
	2	63.3 7 03704		32	63.9 2 59259
	3	63.3 8 888889		33	63.9 4 44444
	4	63.4 0 74074		34	63.9 6 29630
	5	63.4 2 59259		35	63.9 8 14815
	6	63.4 4 44444		36	64.0 0 00000
	7	63.4 6 29630		37	64.0 1 85185
	8	63.4 8 14815		38	64.0 3 70370
	9	63.5 0 00000		39	64.0 5 55556
	10	63.5 1 85185		40	64.0 7 40741
	11	63.5 3 70370		41	64.0 9 25926
	12	63.5 5 55556		42	64.1 1 11111
	13	63.5 7 40741		43	64.1 2 96296
	14	63.5 9 25926		44	64.1 4 81481
	15	63.6 1 11111		45	64.1 6 66667
	16	63.6 2 96296		46	64.1 8 51852
	17	63.6 4 81481		47	64.2 0 37037
	18	63.6 6 66667		48	64.2 2 22222
	19	63.6 8 51852		49	64.2 4 07407
	20	63.7 0 37037		50	64.2 5 92593
	21	63.7 2 22222		51	64.2 7 77777
	22	63.7 4 07407		52	64.2 9 62963
	23	63.7 5 92593		53	64.3 1 48148
	24	63.7 7 77777		54	64.3 3 33333
	25	63.7 9 62963		55	64.3 5 18519
	26	63.8 1 48148		56	64.3 7 03704
	27	63.8 3 33333		57	64.3 8 88889
	28	63.8 5 18519		58	64.4 0 74074
	29	63.8 7 03704		59	64.4 2 59259
	30	63.8 8 88889		60	64.4 4 44444

50°	0'	64.4 4 44 44 4	50°	30'	65.0 0 00 00 0
	1	64.4 6 29 63 0		31	65.0 1 85 18 5
	2	64.4 8 14 81 5		32	65.0 3 70 37 0
	3	64.5 0 00 00 0		33	65.0 5 55 55 6
	4	64.5 1 85 18 5		34	65.0 7 40 74 1
	5	64.5 3 70 37 0		35	65.0 9 25 92 6
	6	64.5 5 55 55 6		36	65.1 1 11 11 1
	7	64.5 7 40 74 1		37	65.1 2 96 29 6
	8	64.5 9 25 92 6		38	65.1 4 81 48 1
	9	64.6 1 11 11 1		39	65.1 6 66 66 7
	10	64.6 2 96 29 6		40	65.1 8 51 85 2
	11	64.6 4 81 48 1		41	65.2 0 37 03 7
	12	64.6 6 66 66 7		42	65.2 2 22 22 2
	13	64.6 8 51 85 2		43	65.2 4 07 40 7
	14	64.7 0 37 03 7		44	65.2 5 92 59 3
	15	64.7 2 22 22 2		45	65.2 7 77 77 0
	16	64.7 4 07 40 7		46	65.2 9 62 96 3
	17	64.7 5 92 59 3		47	65.3 1 48 14 0
	18	64.7 7 77 77 0		48	65.3 3 33 33 3
	19	64.7 9 62 96 3		49	65.3 5 18 51 9
	20	64.8 1 48 14 0		50	65.3 7 03 70 4
	21	64.8 3 33 33 3		51	65.3 8 88 88 9
	22	64.8 5 18 51 9		52	65.4 0 74 07 4
	23	64.8 7 03 70 4		53	65.4 2 59 25 9
	24	64.8 8 88 88 9		54	65.4 4 44 44 4
	25	64.9 0 74 07 4		55	65.4 6 29 63 0
	26	64.9 2 59 25 9		56	65.4 8 14 81 5
	27	64.9 4 44 44 4		57	65.5 0 00 00 0
	28	64.9 6 29 63 0		58	65.5 1 85 18 5
	29	64.9 8 14 81 5		59	65.5 3 70 37 0
	30	65.0 0 00 00 0		60	65.5 5 55 55 6

59°	0'	65.5 5 5555 6
	1	65.5 7 4074 1
	2	65.5 9 2592 6
	3	65.6 1 1111 1
	4	65.6 2 9629 6
	5	65.6 4 8148 1
	6	65.6 6 6666 7
	7	65.6 8 5185 2
	8	65.7 0 3703 7
	9	65.7 2 2222 2
	10	65.7 4 0740 7
	11	65.7 5 9259 3
	12	65.7 7 7777 0
	13	65.7 9 6296 3
	14	65.8 1 4814 0
	15	65.8 3 3333 3
	16	65.8 5 1851 9
	17	65.8 7 0370 4
	18	65.8 8 8888 9
	19	65.9 0 7407 4
	20	65.9 2 5925 9
	21	65.9 4 4444 4
	22	65.9 6 2963 0
	23	65.9 8 1481 5
	24	66.0 0 0000 0
	25	66.0 1 8518 5
	26	66.0 3 7037 0
	27	66.0 5 5555 6
	28	66.0 7 4074 1
	29	66.0 9 2592 6
	30	66.1 1 1111 1

59°	30'	66.1 1 1111 1
	31	66.1 2 9629 6
	32	66.1 4 8148 1
	33	66.1 6 6666 7
	34	66.1 8 5185 2
	35	66.2 0 3703 7
	36	66.2 2 2222 2
	37	66.2 4 0740 7
	38	66.2 5 9259 3
	39	66.2 7 7777 0
	40	66.2 9 6296 3
	41	66.3 1 4814 0
	42	66.3 3 3333 3
	43	66.3 5 1851 9
	44	66.3 7 0370 4
	45	66.3 8 8888 9
	46	66.4 0 7407 4
	47	66.4 2 5925 9
	48	66.4 4 4444 4
	49	66.4 6 2963 0
	50	66.4 8 1481 5
	51	66.5 0 0000 0
	52	66.5 1 8518 5
	53	66.5 3 7037 0
	54	66.5 5 5555 6
	55	66.5 7 4074 1
	56	66.5 9 2592 6
	57	66.6 1 1111 1
	58	66.6 2 9629 6
	59	66.6 4 8148 1
	60	66.6 6 6666 7

60°	0'	66.6 6 6666 7	60°	30'	67.2 2 2222 2
	1	66.6 8 5185 2		31	67.2 4 0740 7
	2	66.7 0 3703 7		32	67.2 5 9259 3
	3	66.7 2 2222 2		33	67.2 7 7777 7
	4	66.7 4 0740 7		34	67.2 9 6296 3
	5	66.7 5 9259 3		35	67.3 1 4814 0
	6	66.7 7 7777 7		36	67.3 3 3333 3
	7	66.7 9 6296 3		37	67.3 5 1851 9
	8	66.8 1 4814 0		38	67.3 7 0370 4
	9	66.8 3 3333 3		39	67.3 8 8888 8
	10	66.8 5 1851 9		40	67.4 0 7407 4
	11	66.8 7 0370 4		41	67.4 2 5925 9
	12	66.8 8 8888 8		42	67.4 4 4444 4
	13	66.9 0 7407 4		43	67.4 6 2963 0
	14	66.9 2 5925 9		44	67.4 8 1481 5
	15	66.9 4 4444 4		45	67.5 0 0000 0
	16	66.9 6 2963 0		46	67.5 1 8518 5
	17	66.9 8 1481 5		47	67.5 3 7037 0
	18	67.0 0 0000 0		48	67.5 5 5555 6
	19	67.0 1 8518 5		49	67.5 7 4074 1
	20	67.0 3 7037 0		50	67.5 9 2592 6
	21	67.0 5 5555 6		51	67.6 1 1111 1
	22	67.0 7 4074 1		52	67.6 2 9629 6
	23	67.0 9 2592 6		53	67.6 4 8148 1
	24	67.1 1 1111 1		54	67.6 6 6666 7
	25	67.1 2 9629 6		55	67.6 8 5185 2
	26	67.1 4 8148 1		56	67.7 0 3703 7
	27	67.1 6 6666 7		57	67.7 2 2222 2
	28	67.1 8 5185 2		58	67.7 4 0740 7
	29	67.2 0 3703 7		59	67.7 5 9259 3
	30	67.2 2 2222 2		60	67.7 7 7777 7

61°	0'	67.77777778
	1	67.7962963
	2	67.8148148
	3	67.8333333
	4	67.8518519
	5	67.8703704
	6	67.8888889
	7	67.9074074
	8	67.9259259
	9	67.9444444
	10	67.9629630
	11	67.9814815
	12	68.0000000
	13	68.0185185
	14	68.0370370
	15	68.0555556
	16	68.0740741
	17	68.0925926
	18	68.1111111
	19	68.1296296
	20	68.1481481
	21	68.1666667
	22	68.1851852
	23	68.2037037
	24	68.2222222
	25	68.2407407
	26	68.2592593
	27	68.2777778
	28	68.2962963
	29	68.3148148
	30	68.3333333

61°	30'	68.3333333
	31	68.3518519
	32	68.3703704
	33	68.3888889
	34	68.4074074
	35	68.4259259
	36	68.4444444
	37	68.4629630
	38	68.4814815
	39	68.5000000
	40	68.5185185
	41	68.5370370
	42	68.5555556
	43	68.5740741
	44	68.5925926
	45	68.6111111
	46	68.6296296
	47	68.6481481
	48	68.6666667
	49	68.6851852
	50	68.7037037
	51	68.7222222
	52	68.7407407
	53	68.7592593
	54	68.7777778
	55	68.7962963
	56	68.8148148
	57	68.8333333
	58	68.8518519
	59	68.8703704
	60	68.8888889



62°	0'	68.88888889	62°	30'	69.4444444
	1	68.9074074		31	69.4629630
	2	68.9259259		32	69.4814815
	3	68.9444444		33	69.5000000
	4	68.9629630		34	69.5185185
	5	68.9814815		35	69.5370370
	6	69.0000000		36	69.5555556
	7	69.0185185		37	69.5740741
	8	69.0370370		38	69.5925926
	9	69.0555556		39	69.6111111
	10	69.0740741		40	69.6296296
	11	69.0925926		41	69.6481481
	12	69.1111111		42	69.6666667
	13	69.1296296		43	69.6851852
	14	69.1481481		44	69.7037037
	15	69.1666667		45	69.7222222
	16	69.1851852		46	69.7407407
	17	69.2037037		47	69.7592593
	18	69.2222222		48	69.7777777
	19	69.2407407		49	69.7962963
	20	69.2592593		50	69.8148148
	21	69.2777777		51	69.8333333
	22	69.2962963		52	69.8518519
	23	69.3148148		53	69.8703704
	24	69.3333333		54	69.8888889
	25	69.3518519		55	69.9074074
	26	69.3703704		56	69.9259259
	27	69.3888889		57	69.9444444
	28	69.4074074		58	69.9629630
	29	69.4259259		59	69.9814815
	30	69.4444444		60	70.0000000

63°	0'	70.0 0 0 0 0 0 0
	1	70.0 1 8 5 1 8 5
	2	70.0 3 7 0 3 7 0
	3	70.0 5 5 5 5 5 6
	4	70.0 7 4 0 7 4 1
	5	70.0 9 2 5 9 2 6
	6	70.1 1 1 1 1 1 1
	7	70.1 2 9 6 2 9 6
	8	70.1 4 8 1 4 8 1
	9	70.1 6 6 6 6 6 7
	10	70.1 8 5 1 8 5 2
	11	70.2 0 3 7 0 3 7
	12	70.2 2 2 2 2 2 2
	13	70.2 4 0 7 4 0 7
	14	70.2 5 9 2 5 9 3
	15	70.2 7 7 7 7 7 0
	16	70.2 9 6 2 9 6 3
	17	70.3 1 4 3 1 4 0
	18	70.3 3 3 3 3 3 3
	19	70.3 5 1 8 5 1 9
	20	70.3 7 0 3 7 0 4
	21	70.3 8 8 8 8 8 9
	22	70.4 0 7 4 0 7 4
	23	70.4 2 5 9 2 5 9
	24	70.4 4 4 4 4 4 4
	25	70.4 6 2 9 6 3 0
	26	70.4 8 1 4 8 1 5
	27	70.5 0 0 0 0 0 0
	28	70.5 1 8 5 1 8 5
	29	70.5 3 7 0 3 7 0
	30	70.5 5 5 5 5 5 6

63°	30'	70.5 5 5 5 5 5 6
	31	70.5 7 4 0 7 4 1
	32	70.5 9 2 5 9 2 6
	33	70.6 1 1 1 1 1 1
	34	70.6 2 9 6 2 9 6
	35	70.6 4 8 1 4 8 1
	36	70.6 6 6 6 6 6 7
	37	70.6 8 5 1 8 5 2
	38	70.7 0 3 7 0 3 7
	39	70.7 2 2 2 2 2 2
	40	70.7 4 0 7 4 0 7
	41	70.7 5 9 2 5 9 3
	42	70.7 7 7 7 7 7 0
	43	70.7 9 6 2 9 6 3
	44	70.8 1 4 3 1 4 0
	45	70.8 3 3 3 3 3 3
	46	70.8 5 1 8 5 1 9
	47	70.8 7 0 3 7 0 4
	48	70.8 8 8 8 8 8 9
	49	70.9 0 7 4 0 7 4
	50	70.9 2 5 9 2 5 9
	51	70.9 4 4 4 4 4 4
	52	70.9 6 2 9 6 3 0
	53	70.9 8 1 4 8 1 5
	54	71.0 0 0 0 0 0 0
	55	71.0 1 8 5 1 8 5
	56	71.0 3 7 0 3 7 0
	57	71.0 5 5 5 5 5 6
	58	71.0 7 4 0 7 4 1
	59	71.0 9 2 5 9 2 6
	60	71.1 1 1 1 1 1 1

64°	0'	71.1 1 1 1 1 1 1
	1	71.1 2 9 6 2 9 6
	2	71.1 4 8 1 4 8 1
	3	71.1 6 6 6 6 6 7
	4	71.1 8 5 1 8 5 2
	5	71.2 0 3 7 0 3 7
	6	71.2 2 2 2 2 2 2
	7	71.2 4 0 7 4 0 7
	8	71.2 5 9 2 5 9 3
	9	71.2 7 7 7 7 7 8
	10	71.2 9 6 2 9 6 3
	11	71.3 1 4 8 1 4 8
	12	71.3 3 3 3 3 3 3
	13	71.3 5 1 8 5 1 9
	14	71.3 7 0 3 7 0 4
	15	71.3 8 8 8 8 8 9
	16	71.4 0 7 4 0 7 4
	17	71.4 2 5 9 2 5 9
	18	71.4 4 4 4 4 4 4
	19	71.4 6 2 9 6 3 0
	20	71.4 8 1 4 8 1 5
	21	71.5 0 0 0 0 0 0
	22	71.5 1 8 5 1 8 5
	23	71.5 3 7 0 3 7 0
	24	71.5 5 5 5 5 5 6
	25	71.5 7 4 0 7 4 1
	26	71.5 9 2 5 9 2 6
	27	71.6 1 1 1 1 1 1
	28	71.6 2 9 6 2 9 6
	29	71.6 4 8 1 4 8 1
	30	71.6 6 6 6 6 6 7

64°	30'	71.6 6 6 6 6 6 7
	31	71.6 8 5 1 8 5 2
	32	71.7 0 3 7 0 3 7
	33	71.7 2 2 2 2 2 2
	34	71.7 4 0 7 4 0 7
	35	71.7 5 9 2 5 9 3
	36	71.7 7 7 7 7 7 8
	37	71.7 9 6 2 9 6 3
	38	71.8 1 4 8 1 4 8
	39	71.8 3 3 3 3 3 3
	40	71.8 5 1 8 5 1 9
	41	71.8 7 0 3 7 0 4
	42	71.8 8 8 8 8 8 9
	43	71.9 0 7 4 0 7 4
	44	71.9 2 5 9 2 5 9
	45	71.9 4 4 4 4 4 4
	46	71.9 6 2 9 6 3 0
	47	71.9 8 1 4 8 1 5
	48	72.0 0 0 0 0 0 0
	49	72.0 1 8 5 1 8 5
	50	72.0 3 7 0 3 7 0
	51	72.0 5 5 5 5 5 6
	52	72.0 7 4 0 7 4 1
	53	72.0 9 2 5 9 2 6
	54	72.1 1 1 1 1 1 1
	55	72.1 2 9 6 2 9 6
	56	72.1 4 8 1 4 8 1
	57	72.1 6 6 6 6 6 7
	58	72.1 8 5 1 8 5 2
	59	72.2 0 3 7 0 3 7
	60	72.2 2 2 2 2 2 2

65°	0	72.2 2 2 2 2 2 2	65°	30	72.7 7 7 7 7 7 0
	1	72.2 4 0 7 4 0 7		31	72.7 9 6 2 9 6 3
	2	72.2 5 9 2 5 9 3		32	72.8 1 4 8 1 4 0
	3	72.2 7 7 7 7 7 0		33	72.8 3 3 3 3 3 3
	4	72.2 9 6 2 9 6 3		34	72.8 5 1 8 5 1 9
	5	72.3 1 4 8 1 4 0		35	72.8 7 0 3 7 0 4
	6	72.3 3 3 3 3 3 3		36	72.8 8 8 8 8 8 9
	7	72.3 5 1 8 5 1 9		37	72.9 0 7 4 0 7 4
	8	72.3 7 0 3 7 0 4		38	72.9 2 5 9 2 5 9
	9	72.3 8 8 8 8 8 9		39	72.9 4 4 4 4 4 4
	10	72.4 0 7 4 0 7 4		40	72.9 6 2 9 6 3 0
	11	72.4 2 5 9 2 5 9		41	72.9 8 1 4 8 1 5
	12	72.4 4 4 4 4 4 4		42	73.0 0 0 0 0 0 0
	13	72.4 6 2 9 6 3 0		43	73.0 1 8 5 1 8 5
	14	72.4 8 1 4 8 1 5		44	73.0 3 7 0 3 7 0
	15	72.5 0 0 0 0 0 0		45	73.0 5 5 5 5 5 6
	16	72.5 1 8 5 1 8 5		46	73.0 7 4 0 7 4 1
	17	72.5 3 7 0 3 7 0		47	73.0 9 2 5 9 2 6
	18	72.5 5 5 5 5 5 6		48	73.1 1 1 1 1 1 1
	19	72.5 7 4 0 7 4 1		49	73.1 2 9 6 2 9 6
	20	72.5 9 2 5 9 2 6		50	73.1 4 8 1 4 8 1
	21	72.6 1 1 1 1 1 1		51	73.1 6 6 6 6 6 7
	22	72.6 2 9 6 2 9 6		52	73.1 8 5 1 8 5 2
	23	72.6 4 8 1 4 8 1		53	73.2 0 3 7 0 3 7
	24	72.6 6 6 6 6 6 7		54	73.2 2 2 2 2 2 2
	25	72.6 8 5 1 8 5 2		55	73.2 4 0 7 4 0 7
	26	72.7 0 3 7 0 3 7		56	73.2 5 9 2 5 9 3
	27	72.7 2 2 2 2 2 2		57	73.2 7 7 7 7 7 0
	28	72.7 4 0 7 4 0 7		58	73.2 9 6 2 9 6 3
	29	72.7 5 9 2 5 9 3		59	73.3 1 4 8 1 4 0
	30	72.7 7 7 7 7 7 0		60	73.3 3 3 3 3 3 3

66°	0'	73.3 3 33333
	1	73.3 5 18519
	2	73.3 7 03704
	3	73.3 8 88889
	4	73.4 0 74074
	5	73.4 2 59259
	6	73.4 4 44444
	7	73.4 6 29630
	8	73.4 8 14815
	9	73.5 0 00000
	10	73.5 1 85185
	11	73.5 3 70370
	12	73.5 5 55556
	13	73.5 7 40741
	14	73.5 9 25926
	15	73.6 1 11111
	16	73.6 2 96296
	17	73.6 4 81481
	18	73.6 6 66667
	19	73.6 8 51852
	20	73.7 0 37037
	21	73.7 2 22222
	22	73.7 4 07407
	23	73.7 5 92593
	24	73.7 7 77778
	25	73.7 9 62963
	26	73.8 1 48148
	27	73.8 3 33333
	28	73.8 5 18519
	29	73.8 7 03704
	30	73.8 8 88889

66°	30'	73.8 8 88889
	31	73.9 0 74074
	32	73.9 2 59259
	33	73.9 4 44444
	34	73.9 6 29630
	35	73.9 8 14815
	36	74.0 0 00000
	37	74.0 1 85185
	38	74.0 3 70370
	39	74.0 5 55556
	40	74.0 7 40741
	41	74.0 9 25926
	42	74.1 1 11111
	43	74.1 2 96296
	44	74.1 4 81481
	45	74.1 6 66667
	46	74.1 8 51852
	47	74.2 0 37037
	48	74.2 2 22222
	49	74.2 4 07407
	50	74.2 5 92593
	51	74.2 7 77778
	52	74.2 9 62963
	53	74.3 1 48148
	54	74.3 3 33333
	55	74.3 5 18519
	56	74.3 7 03704
	57	74.3 8 88889
	58	74.4 0 74074
	59	74.4 2 59259
	60	74.4 4 44444

67°

0'	74.4444444
1	74.4629630
2	74.4814815
3	74.5000000
4	74.5185185
5	74.5370370
6	74.5555556
7	74.5740741
8	74.5925926
9	74.6111111
10	74.6296296
11	74.6481481
12	74.6666667
13	74.6851852
14	74.7037037
15	74.7222222
16	74.7407407
17	74.7592593
18	74.7777778
19	74.7962963
20	74.8148148
21	74.8333333
22	74.8518519
23	74.8703704
24	74.8888889
25	74.9074074
26	74.9259259
27	74.9444444
28	74.9629630
29	74.9814815
30	75.0000000

67°

30'	75.0000000
31	75.0185185
32	75.0370370
33	75.0555556
34	75.0740741
35	75.0925926
36	75.1111111
37	75.1296296
38	75.1481481
39	75.1666667
40	75.1851852
41	75.2037037
42	75.2222222
43	75.2407407
44	75.2592593
45	75.2777778
46	75.2962963
47	75.3148148
48	75.3333333
49	75.3518519
50	75.3703704
51	75.3888889
52	75.4074074
53	75.4259259
54	75.4444444
55	75.4629630
56	75.4814815
57	75.5000000
58	75.5185185
59	75.5370370
60	75.5555556

70.

60°

0	75.555556
1	75.5740741
2	75.5925926
3	75.6111111
4	75.6296296
5	75.6481481
6	75.6666667
7	75.6851852
8	75.7037037
9	75.7222222
10	75.7407407
11	75.7592593
12	75.7777778
13	75.7962963
14	75.8148148
15	75.8333333
16	75.8518519
17	75.8703704
18	75.8888889
19	75.9074074
20	75.9259259
21	75.9444444
22	75.9629630
23	75.9814815
24	76.0000000
25	76.0185185
26	76.0370370
27	76.0555556
28	76.0740741
29	76.0925926
30	76.1111111

60°

30	76.1111111
31	76.1296296
32	76.1481481
33	76.1666667
34	76.1851852
35	76.2037037
36	76.2222222
37	76.2407407
38	76.2592593
39	76.2777778
40	76.2962963
41	76.3148148
42	76.3333333
43	76.3518519
44	76.3703704
45	76.3888889
46	76.4074074
47	76.4259259
48	76.4444444
49	76.4629630
50	76.4814815
51	76.5000000
52	76.5185185
53	76.5370370
54	76.5555556
55	76.5740741
56	76.5925926
57	76.6111111
58	76.6296296
59	76.6481481
60	76.6666667

71.

69°	0'	76.666 666 7	69°	30'	77.2 2 2 2 2 2
	1	76.68 5 1 8 5 2		31	77.2 4 0 7 4 0 7
	2	76.70 3 7 0 3 7		32	77.2 5 9 2 5 9 3
	3	76.72 2 2 2 2 2		33	77.2 7 7 7 7 7 8
	4	76.7 4 0 7 4 0 7		34	77.2 9 6 2 9 6 3
	5	76.7 5 9 2 5 9 3		35	77.3 1 4 8 1 4 8
	6	76.7 7 7 7 7 7 8		36	77.3 3 3 3 3 3 3
	7	76.7 9 6 2 9 6 3		37	77.3 5 1 8 5 1 9
	8	76.8 1 4 8 1 4 8		38	77.3 7 0 3 7 0 4
	9	76.8 3 3 3 3 3 3		39	77.3 8 8 8 8 8 9
	10	76.8 5 1 8 5 1 9		40	77.4 0 7 4 0 7 4
	11	76.8 7 0 3 7 0 4		41	77.4 2 5 9 2 5 9
	12	76.8 8 8 8 8 8 9		42	77.4 4 4 4 4 4 4
	13	76.9 0 7 4 0 7 4		43	77.4 6 2 9 6 3 0
	14	76.9 2 5 9 2 5 9		44	77.4 8 1 4 8 1 5
	15	76.9 4 4 4 4 4 4		45	77.5 0 0 0 0 0 0
	16	76.9 6 2 9 6 3 0		46	77.5 1 8 5 1 8 5
	17	76.9 8 1 4 8 1 5		47	77.5 3 7 0 3 7 0
	18	77.0 0 0 0 0 0 0		48	77.5 5 5 5 5 5 6
	19	77.0 1 8 5 1 8 5		49	77.5 7 4 0 7 4 1
	20	77.0 3 7 0 3 7 0		50	77.5 9 2 5 9 2 6
	21	77.0 5 5 5 5 5 6		51	77.6 1 1 1 1 1 1
	22	77.0 7 4 0 7 4 1		52	77.6 2 9 6 2 9 6
	23	77.0 9 2 5 9 2 6		53	77.6 4 8 1 4 8 1
	24	77.1 1 1 1 1 1 1		54	77.6 6 6 6 6 6 7
	25	77.1 2 9 6 2 9 6		55	77.6 8 5 1 8 5 2
	26	77.1 4 8 1 4 8 1		56	77.7 0 3 7 0 3 7
	27	77.1 6 6 6 6 6 7		57	77.7 2 2 2 2 2 2
	28	77.1 8 5 1 8 5 2		58	77.7 4 0 7 4 0 7
	29	77.2 0 3 7 0 3 7		59	77.7 5 9 2 5 9 3
	30	77.2 2 2 2 2 2 2		60	77.7 7 7 7 7 7 8



70°

0	77.7 7 777 70
1	77.7 9 629 63
2	77.8 1 431 40
3	77.8 3 333 33
4	77.8 5 185 19
5	77.8 7 037 04
6	77.8 8 888 89
7	77.9 0 740 74
8	77.9 2 592 59
9	77.9 4 444 44
10	77.9 6 296 30
11	77.9 8 148 15
12	78.0 0 000 00
13	78.0 1 851 85
14	78.0 3 703 70
15	78.0 5 555 56
16	78.0 7 407 41
17	78.0 9 259 26
18	78.1 1 111 11
19	78.1 2 962 96
20	78.1 4 814 81
21	78.1 6 666 67
22	78.1 8 518 52
23	78.2 0 370 37
24	78.2 2 222 22
25	78.2 4 074 07
26	78.2 5 925 93
27	78.2 7 777 70
28	78.2 9 629 63
29	78.3 1 481 40
30	78.3 3 333 33

70°

30	78.3 3 333 33
31	78.3 5 185 19
32	78.3 7 037 04
33	78.3 8 888 89
34	78.4 0 740 74
35	78.4 2 592 59
36	78.4 4 444 44
37	78.4 6 296 30
38	78.4 8 148 15
39	78.5 0 000 00
40	78.5 1 851 85
41	78.5 3 703 70
42	78.5 5 555 56
43	78.5 7 407 41
44	78.5 9 259 26
45	78.6 1 111 11
46	78.6 2 962 96
47	78.6 4 814 81
48	78.6 6 666 67
49	78.6 8 518 52
50	78.7 0 370 37
51	78.7 2 222 22
52	78.7 4 074 07
53	78.7 5 925 93
54	78.7 7 777 70
55	78.7 9 629 63
56	78.8 1 481 40
57	78.8 3 333 33
58	78.8 5 185 19
59	78.8 7 037 04
60	78.8 8 888 89

73.

71°	0'	78.8 8 8 8 8 8 9
	1	78.9 0 7 4 0 7 4
	2	78.9 2 5 9 2 5 9
	3	78.9 4 4 4 4 4 4
	4	78.9 6 2 9 6 3 0
	5	78.9 8 1 4 8 1 5
	6	79.0 0 0 0 0 0 0
	7	79.0 1 8 5 1 8 5
	8	79.0 3 7 0 3 7 0
	9	79.0 5 5 5 5 5 6
	10	79.0 7 4 0 7 4 1
	11	79.0 9 2 5 9 2 6
	12	79.1 1 1 1 1 1 1
	13	79.1 2 9 6 2 9 6
	14	79.1 4 8 1 4 8 1
	15	79.1 6 6 6 6 6 7
	16	79.1 8 5 1 8 5 2
	17	79.2 0 3 7 0 3 7
	18	79.2 2 2 2 2 2 2
	19	79.2 4 0 7 4 0 7
	20	79.2 5 9 2 5 9 3
	21	79.2 7 7 7 7 7 8
	22	79.2 9 6 2 9 6 3
	23	79.3 1 4 8 1 4 8
	24	79.3 3 3 3 3 3 3
	25	79.3 5 1 8 5 1 9
	26	79.3 7 0 3 7 0 4
	27	79.3 8 8 8 8 8 9
	28	79.4 0 7 4 0 7 4
	29	79.4 2 5 9 2 5 9
	30	79.4 4 4 4 4 4 4

71°	30'	79.4 4 4 4 4 4 4
	31	79.4 6 2 9 6 3 0
	32	79.4 8 1 4 8 1 5
	33	79.5 0 0 0 0 0 0
	34	79.5 1 8 5 1 8 5
	35	79.5 3 7 0 3 7 0
	36	79.5 5 5 5 5 5 6
	37	79.5 7 4 0 7 4 1
	38	79.5 9 2 5 9 2 6
	39	79.6 1 1 1 1 1 1
	40	79.6 2 9 6 2 9 6
	41	79.6 4 8 1 4 8 1
	42	79.6 6 6 6 6 6 7
	43	79.6 8 5 1 8 5 2
	44	79.7 0 3 7 0 3 7
	45	79.7 2 2 2 2 2 2
	46	79.7 4 0 7 4 0 7
	47	79.7 5 9 2 5 9 3
	48	79.7 7 7 7 7 7 8
	49	79.7 9 6 2 9 6 3
	50	79.8 1 4 8 1 4 8
	51	79.8 3 3 3 3 3 3
	52	79.8 5 1 8 5 1 9
	53	79.8 7 0 3 7 0 4
	54	79.8 8 8 8 8 8 9
	55	79.9 0 7 4 0 7 4
	56	79.9 2 5 9 2 5 9
	57	79.9 4 4 4 4 4 4
	58	79.9 6 2 9 6 3 0
	59	79.9 8 1 4 8 1 5
	60	80.0 0 0 0 0 0 0

72°	0 <sup>s</sup>	80.0 0 000000
	1	80.0 1 85185
	2	80.0 3 70370
	3	80.0 5 55556
	4	80.0 7 40741
	5	80.0 9 25926
	6	80.1 1 11111
	7	80.1 2 96296
	8	80.1 4 81481
	9	80.1 6 66667
	10	80.1 8 51852
	11	80.2 0 37037
	12	80.2 2 22222
	13	80.2 4 07407
	14	80.2 5 92593
	15	80.2 7 77778
	16	80.2 9 62963
	17	80.3 1 48148
	18	80.3 3 33333
	19	80.3 5 18519
	20	80.3 7 03704
	21	80.3 8 88889
	22	80.4 0 74074
	23	80.4 2 59259
	24	80.4 4 44444
	25	80.4 6 29630
	26	80.4 8 14815
	27	80.5 0 00000
	28	80.5 1 85185
	29	80.5 3 70370
	30	80.5 5 55556

72°	30 <sup>s</sup>	80.5 5 55556
	31	80.5 7 40741
	32	80.5 9 25926
	33	80.6 1 11111
	34	80.6 2 96296
	35	80.6 4 81481
	36	80.6 6 66667
	37	80.6 8 51852
	38	80.7 0 37037
	39	80.7 2 22222
	40	80.7 4 07407
	41	80.7 5 92593
	42	80.7 7 77778
	43	80.7 9 62963
	44	80.8 1 48148
	45	80.8 3 33333
	46	80.8 5 18519
	47	80.8 7 03704
	48	80.8 8 88889
	49	80.9 0 74074
	50	80.9 2 59259
	51	80.9 4 44444
	52	80.9 6 29630
	53	80.9 8 14815
	54	81.0 0 00000
	55	81.0 1 85185
	56	81.0 3 70370
	57	81.0 5 55556
	58	81.0 7 40741
	59	81.0 9 25926
	60	81.1 1 11111

73°	0'	
	0'	81.1 1 1 1 1 1 1
	1	81.1 2 9 6 2 9 6
	2	81.1 4 8 1 4 8 1
	3	81.1 6 6 6 6 6 7
	4	81.1 8 5 1 8 5 2
	5	81.2 0 3 7 0 3 7
	6	81.2 2 2 2 2 2 2
	7	81.2 4 0 7 4 0 7
	8	81.2 5 9 2 5 9 3
	9	81.2 7 7 7 7 7 8
	10	81.2 9 6 2 9 6 3
	11	81.3 1 4 8 1 4 8
	12	81.3 3 3 3 3 3 3
	13	81.3 5 1 8 5 1 9
	14	81.3 7 0 3 7 0 4
	15	81.3 8 8 8 8 8 9
	16	81.4 0 7 4 0 7 4
	17	81.4 2 5 9 2 5 9
	18	81.4 4 4 4 4 4 4
	19	81.4 6 2 9 6 3 0
	20	81.4 8 1 4 8 1 5
	21	81.5 0 0 0 0 0 0
	22	81.5 1 8 5 1 8 5
	23	81.5 3 7 0 3 7 0
	24	81.5 5 5 5 5 5 6
	25	81.5 7 4 0 7 4 1
	26	81.5 9 2 5 9 2 6
	27	81.6 1 1 1 1 1 1
	28	81.6 2 9 6 2 9 6
	29	81.6 4 8 1 4 8 1
	30	81.6 6 6 6 6 6 7

73°	30'	
	30'	81.6 6 6 6 6 6 7
	31	81.6 8 5 1 8 5 2
	32	81.7 0 3 7 0 3 7
	33	81.7 2 2 2 2 2 2
	34	81.7 4 0 7 4 0 7
	35	81.7 5 9 2 5 9 3
	36	81.7 7 7 7 7 7 8
	37	81.7 9 6 2 9 6 3
	38	81.8 1 4 8 1 4 8
	39	81.8 3 3 3 3 3 3
	40	81.8 5 1 8 5 1 9
	41	81.8 7 0 3 7 0 4
	42	81.8 8 8 8 8 8 9
	43	81.9 0 7 4 0 7 4
	44	81.9 2 5 9 2 5 9
	45	81.9 4 4 4 4 4 4
	46	81.9 6 2 9 6 3 0
	47	81.9 8 1 4 8 1 5
	48	82.0 0 0 0 0 0 0
	49	82.0 1 8 5 1 8 5
	50	82.0 3 7 0 3 7 0
	51	82.0 5 5 5 5 5 6
	52	82.0 7 4 0 7 4 1
	53	82.0 9 2 5 9 2 6
	54	82.1 1 1 1 1 1 1
	55	82.1 2 9 6 2 9 6
	56	82.1 4 8 1 4 8 1
	57	82.1 6 6 6 6 6 7
	58	82.1 8 5 1 8 5 2
	59	82.2 0 3 7 0 3 7
	60	82.2 2 2 2 2 2 2

74°	0'	82.2 2 22222
	1	82.2 4 07407
	2	82.2 5 92593
	3	82.2 7 77777
	4	82.2 9 62963
	5	82.3 1 48140
	6	82.3 3 33333
	7	82.3 5 18519
	8	82.3 7 03704
	9	82.3 8 88888
	10	82.4 0 74074
	11	82.4 2 59259
	12	82.4 4 44444
	13	82.4 6 29630
	14	82.4 8 14815
	15	82.5 0 00000
	16	82.5 1 85185
	17	82.5 3 70370
	18	82.5 5 55556
	19	82.5 7 40741
	20	82.5 9 25926
	21	82.6 1 11111
	22	82.6 2 96296
	23	82.6 4 81481
	24	82.6 6 66667
	25	82.6 8 51852
	26	82.7 0 37037
	27	82.7 2 22222
	28	82.7 4 07407
	29	82.7 5 92593
	30	82.7 7 77777

74°	30'	82.7 7 77777
	31	82.7 9 62963
	32	82.8 1 48140
	33	82.8 3 33333
	34	82.8 5 18519
	35	82.8 7 03704
	36	82.8 8 88888
	37	82.9 0 74074
	38	82.9 2 59259
	39	82.9 4 44444
	40	82.9 6 29630
	41	82.9 8 14815
	42	83.0 0 00000
	43	83.0 1 85185
	44	83.0 3 70370
	45	83.0 5 55556
	46	83.0 7 40741
	47	83.0 9 25926
	48	83.1 1 11111
	49	83.1 2 96296
	50	83.1 4 81481
	51	83.1 6 66667
	52	83.1 8 51852
	53	83.2 0 37037
	54	83.2 2 22222
	55	83.2 4 07407
	56	83.2 5 92593
	57	83.2 7 77777
	58	83.2 9 62963
	59	83.3 1 48140
	60	83.3 3 33333

75°	0'	83.3333333
	1	83.3518519
	2	83.3703704
	3	83.3888889
	4	83.4074074
	5	83.4259259
	6	83.4444444
	7	83.4629630
	8	83.4814815
	9	83.5000000
	10	83.5185185
	11	83.5370370
	12	83.5555556
	13	83.5740741
	14	83.5925926
	15	83.6111111
	16	83.6296296
	17	83.6481481
	18	83.6666667
	19	83.6851852
	20	83.7037037
	21	83.7222222
	22	83.7407407
	23	83.7592593
	24	83.7777778
	25	83.7962963
	26	83.8148148
	27	83.8333333
	28	83.8518519
	29	83.8703704
	30	83.8888889

75°	30'	83.8888889
	31	83.9074074
	32	83.9259259
	33	83.9444444
	34	83.9629630
	35	83.9814815
	36	84.0000000
	37	84.0185185
	38	84.0370370
	39	84.0555556
	40	84.0740741
	41	84.0925926
	42	84.1111111
	43	84.1296296
	44	84.1481481
	45	84.1666667
	46	84.1851852
	47	84.2037037
	48	84.2222222
	49	84.2407407
	50	84.2592593
	51	84.2777778
	52	84.2962963
	53	84.3148148
	54	84.3333333
	55	84.3518519
	56	84.3703704
	57	84.3888889
	58	84.4074074
	59	84.4259259
	60	84.4444444

76°	0'	84.444444
	1	84.4629630
	2	84.4814815
	3	84.5000000
	4	84.5185185
	5	84.5370370
	6	84.5555556
	7	84.5740741
	8	84.5925926
	9	84.6111111
	10	84.6296296
	11	84.6481481
	12	84.6666667
	13	84.6851852
	14	84.7037037
	15	84.7222222
	16	84.7407407
	17	84.7592593
	18	84.7777778
	19	84.7962963
	20	84.8148148
	21	84.8333333
	22	84.8518519
	23	84.8703704
	24	84.8888889
	25	84.9074074
	26	84.9259259
	27	84.9444444
	28	84.9629630
	29	84.9814815
	30	85.0000000

76°	30'	85.0000000
	31	85.0185185
	32	85.0370370
	33	85.0555556
	34	85.0740741
	35	85.0925926
	36	85.1111111
	37	85.1296296
	38	85.1481481
	39	85.1666667
	40	85.1851852
	41	85.2037037
	42	85.2222222
	43	85.2407407
	44	85.2592593
	45	85.2777778
	46	85.2962963
	47	85.3148148
	48	85.3333333
	49	85.3518519
	50	85.3703704
	51	85.3888889
	52	85.4074074
	53	85.4259259
	54	85.4444444
	55	85.4629630
	56	85.4814815
	57	85.5000000
	58	85.5185185
	59	85.5370370
	60	85.5555556

77°	0'	85.5555556
	1	85.5740741
	2	85.5925926
	3	85.6111111
	4	85.6296296
	5	85.6481481
	6	85.6666667
	7	85.6851852
	8	85.7037037
	9	85.7222222
	10	85.7407407
	11	85.7592593
	12	85.7777778
	13	85.7962963
	14	85.8148148
	15	85.8333333
	16	85.8518519
	17	85.8703704
	18	85.8888889
	19	85.9074074
	20	85.9259259
	21	85.9444444
	22	85.9629630
	23	85.9814815
	24	86.0000000
	25	86.0185185
	26	86.0370370
	27	86.0555556
	28	86.0740741
	29	86.0925926
	30	86.1111111

77°	30'	86.1111111
	31	86.1296296
	32	86.1481481
	33	86.1666667
	34	86.1851852
	35	86.2037037
	36	86.2222222
	37	86.2407407
	38	86.2592593
	39	86.2777778
	40	86.2962963
	41	86.3148148
	42	86.3333333
	43	86.3518519
	44	86.3703704
	45	86.3888889
	46	86.4074074
	47	86.4259259
	48	86.4444444
	49	86.4629630
	50	86.4814815
	51	86.5000000
	52	86.5185185
	53	86.5370370
	54	86.5555556
	55	86.5740741
	56	86.5925926
	57	86.6111111
	58	86.6296296
	59	86.6481481
	60	86.6666667



78°	0'	86.666 666 7
	1	86.685 185 2
	2	86.703 703 7
	3	86.722 222 2
	4	86.740 740 7
	5	86.759 259 3
	6	86.777 777 8
	7	86.796 296 3
	8	86.814 814 8
	9	86.833 333 3
	10	86.851 851 9
	11	86.870 370 4
	12	86.888 888 9
	13	86.907 407 4
	14	86.925 925 9
	15	86.944 444 4
	16	86.962 963 0
	17	86.981 481 5
	18	87.000 000 0
	19	87.018 518 5
	20	87.037 037 0
	21	87.055 555 6
	22	87.074 074 1
	23	87.092 592 6
	24	87.111 111 1
	25	87.129 629 6
	26	87.148 148 1
	27	87.166 666 7
	28	87.185 185 2
	29	87.203 703 7
	30	87.222 222 2

78°	30'	87.222 222 2
	31	87.240 740 7
	32	87.259 259 3
	33	87.277 777 8
	34	87.296 296 3
	35	87.314 814 8
	36	87.333 333 3
	37	87.351 851 9
	38	87.370 370 4
	39	87.388 888 9
	40	87.407 407 4
	41	87.425 925 9
	42	87.444 444 4
	43	87.462 963 0
	44	87.481 481 5
	45	87.500 000 0
	46	87.518 518 5
	47	87.537 037 0
	48	87.555 555 6
	49	87.574 074 1
	50	87.592 592 6
	51	87.611 111 1
	52	87.629 629 6
	53	87.648 148 1
	54	87.666 666 7
	55	87.685 185 2
	56	87.703 703 7
	57	87.722 222 2
	58	87.740 740 7
	59	87.759 259 3
	60	87.777 777 8

79°	0'	87.777 777 8
	1	87.79 6 29 6 3
	2	87.8 1 48 1 4 8
	3	87.8 3 3 3 3 3 3
	4	87.8 5 1 8 5 1 9
	5	87.8 7 0 3 7 0 4
	6	87.8 8 8 8 8 8 9
	7	87.9 0 7 4 0 7 4
	8	87.9 2 5 9 2 5 9
	9	87.9 4 4 4 4 4 4
	10	87.9 6 2 9 6 3 0
	11	87.9 8 1 4 8 1 5
	12	88.0 0 0 0 0 0 0
	13	88.0 1 8 5 1 8 5
	14	88.0 3 7 0 3 7 0
	15	88.0 5 5 5 5 5 6
	16	88.0 7 4 0 7 4 1
	17	88.0 9 2 5 9 2 6
	18	88.1 1 1 1 1 1 1
	19	88.1 2 9 6 2 9 6
	20	88.1 4 8 1 4 8 1
	21	88.1 6 6 6 6 6 7
	22	88.1 8 5 1 8 5 2
	23	88.2 0 3 7 0 3 7
	24	88.2 2 2 2 2 2 2
	25	88.2 4 0 7 4 0 7
	26	88.2 5 9 2 5 9 3
	27	88.2 7 7 7 7 7 8
	28	88.2 9 6 2 9 6 3
	29	88.3 1 4 8 1 4 8
	30	88.3 3 3 3 3 3 3

79°	30'	88.3 3 3 3 3 3 3
	31	88.3 5 1 8 5 1 9
	32	88.3 7 0 3 7 0 4
	33	88.3 8 8 8 8 8 9
	34	88.4 0 7 4 0 7 4
	35	88.4 2 5 9 2 5 9
	36	88.4 4 4 4 4 4 4
	37	88.4 6 2 9 6 3 0
	38	88.4 8 1 4 8 1 5
	39	88.5 0 0 0 0 0 0
	40	88.5 1 8 5 1 8 5
	41	88.5 3 7 0 3 7 0
	42	88.5 5 5 5 5 5 6
	43	88.5 7 4 0 7 4 1
	44	88.5 9 2 5 9 2 6
	45	88.6 1 1 1 1 1 1
	46	88.6 2 9 6 2 9 6
	47	88.6 4 8 1 4 8 1
	48	88.6 6 6 6 6 6 7
	49	88.6 8 5 1 8 5 2
	50	88.7 0 3 7 0 3 7
	51	88.7 2 2 2 2 2 2
	52	88.7 4 0 7 4 0 7
	53	88.7 5 9 2 5 9 3
	54	88.7 7 7 7 7 7 8
	55	88.7 9 6 2 9 6 3
	56	88.8 1 4 8 1 4 8
	57	88.8 3 3 3 3 3 3
	58	88.8 5 1 8 5 1 9
	59	88.8 7 0 3 7 0 4
	60	88.8 8 8 8 8 8 9

80°	0'	88.888 8889
	1	88.907 4074
	2	88.925 9259
	3	88.944 4444
	4	88.962 9630
	5	88.981 4815
	6	89.000 0000
	7	89.018 5185
	8	89.037 0370
	9	89.055 5556
	10	89.074 0741
	11	89.092 5926
	12	89.111 1111
	13	89.129 6296
	14	89.148 1481
	15	89.166 6667
	16	89.185 1852
	17	89.203 7037
	18	89.222 2222
	19	89.240 7407
	20	89.259 2593
	21	89.277 7778
	22	89.296 2963
	23	89.314 8148
	24	89.333 3333
	25	89.351 8519
	26	89.370 3704
	27	89.388 8889
	28	89.407 4074
	29	89.425 9259
	30	89.444 4444

80°	30'	89.444 4444
	31	89.462 9630
	32	89.481 4815
	33	89.500 0000
	34	89.518 5185
	35	89.537 0370
	36	89.555 5556
	37	89.574 0741
	38	89.592 5926
	39	89.611 1111
	40	89.629 6296
	41	89.648 1481
	42	89.666 6667
	43	89.685 1852
	44	89.703 7037
	45	89.722 2222
	46	89.740 7407
	47	89.759 2593
	48	89.777 7778
	49	89.796 2963
	50	89.814 8148
	51	89.833 3333
	52	89.851 8519
	53	89.870 3704
	54	89.888 8889
	55	89.907 4074
	56	89.925 9259
	57	89.944 4444
	58	89.962 9630
	59	89.981 4815
	60	90.000 0000

81°	0'	90.00000000
	1	90.0185185
	2	90.0370370
	3	90.0555556
	4	90.0740741
	5	90.0925926
	6	90.1111111
	7	90.1296296
	8	90.1481481
	9	90.1666667
	10	90.1851852
	11	90.2037037
	12	90.2222222
	13	90.2407407
	14	90.2592593
	15	90.2777778
	16	90.2962963
	17	90.3148148
	18	90.3333333
	19	90.3518519
	20	90.3703704
	21	90.3888889
	22	90.4074074
	23	90.4259259
	24	90.4444444
	25	90.4629630
	26	90.4814815
	27	90.5000000
	28	90.5185185
	29	90.5370370
	30	90.5555556

81°	30'	90.5555556
	31	90.5740741
	32	90.5925926
	33	90.6111111
	34	90.6296296
	35	90.6481481
	36	90.6666667
	37	90.6851852
	38	90.7037037
	39	90.7222222
	40	90.7407407
	41	90.7592593
	42	90.7777778
	43	90.7962963
	44	90.8148148
	45	90.8333333
	46	90.8518519
	47	90.8703704
	48	90.8888889
	49	90.9074074
	50	90.9259259
	51	90.9444444
	52	90.9629630
	53	90.9814815
	54	91.0000000
	55	91.0185185
	56	91.0370370
	57	91.0555556
	58	91.0740741
	59	91.0925926
	60	91.1111111

82°	0'	91.1111111	82°	30'	91.6666667
	1	91.1296296		31	91.6851852
	2	91.1481481		32	91.7037037
	3	91.1666667		33	91.7222222
	4	91.1851852		34	91.7407407
	5	91.2037037		35	91.7592593
	6	91.2222222		36	91.7777778
	7	91.2407407		37	91.7962963
	8	91.2592593		38	91.8148148
	9	91.2777778		39	91.8333333
	10	91.2962963		40	91.8518519
	11	91.3148148		41	91.8703704
	12	91.3333333		42	91.8888889
	13	91.3518519		43	91.9074074
	14	91.3703704		44	91.9259259
	15	91.3888889		45	91.9444444
	16	91.4074074		46	91.9629630
	17	91.4259259		47	91.9814815
	18	91.4444444		48	92.0000000
	19	91.4629630		49	92.0185185
	20	91.4814815		50	92.0370370
	21	91.5000000		51	92.0555556
	22	91.5185185		52	92.0740741
	23	91.5370370		53	92.0925926
	24	91.5555556		54	92.1111111
	25	91.5740741		55	92.1296296
	26	91.5925926		56	92.1481481
	27	91.6111111		57	92.1666667
	28	91.6296296		58	92.1851852
	29	91.6481481		59	92.2037037
	30	91.6666667		60	92.2222222

83°	0'	92.2222222
	1	92.2407407
	2	92.2592593
	3	92.2777778
	4	92.2962963
	5	92.3148148
	6	92.3333333
	7	92.3518519
	8	92.3703704
	9	92.3888889
	10	92.4074074
	11	92.4259259
	12	92.4444444
	13	92.4629630
	14	92.4814815
	15	92.5000000
	16	92.5185185
	17	92.5370370
	18	92.5555556
	19	92.5740741
	20	92.5925926
	21	92.6111111
	22	92.6296296
	23	92.6481481
	24	92.6666667
	25	92.6851852
	26	92.7037037
	27	92.7222222
	28	92.7407407
	29	92.7592593
	30	92.7777778

83°	30'	92.7777778
	31	92.7962963
	32	92.8148148
	33	92.8333333
	34	92.8518519
	35	92.8703704
	36	92.8888889
	37	92.9074074
	38	92.9259259
	39	92.9444444
	40	92.9629630
	41	92.9814815
	42	93.0000000
	43	93.0185185
	44	93.0370370
	45	93.0555556
	46	93.0740741
	47	93.0925926
	48	93.1111111
	49	93.1296296
	50	93.1481481
	51	93.1666667
	52	93.1851852
	53	93.2037037
	54	93.2222222
	55	93.2407407
	56	93.2592593
	57	93.2777778
	58	93.2962963
	59	93.3148148
	60	93.3333333

84°	0'	93.3333333
	1	93.3518519
	2	93.3703704
	3	93.3888889
	4	93.4074074
	5	93.4259259
	6	93.4444444
	7	93.4629630
	8	93.4814815
	9	93.5000000
	10	93.5185185
	11	93.5370370
	12	93.5555556
	13	93.5740741
	14	93.5925926
	15	93.6111111
	16	93.6296296
	17	93.6481481
	18	93.6666667
	19	93.6851852
	20	93.7037037
	21	93.7222222
	22	93.7407407
	23	93.7592593
	24	93.7777778
	25	93.7962963
	26	93.8148148
	27	93.8333333
	28	93.8518519
	29	93.8703704
	30	93.8888889

84°	30'	93.8888889
	31	93.9074074
	32	93.9259259
	33	93.9444444
	34	93.9629630
	35	93.9814815
	36	94.0000000
	37	94.0185185
	38	94.0370370
	39	94.0555556
	40	94.0740741
	41	94.0925926
	42	94.1111111
	43	94.1296296
	44	94.1481481
	45	94.1666667
	46	94.1851852
	47	94.2037037
	48	94.2222222
	49	94.2407407
	50	94.2592593
	51	94.2777778
	52	94.2962963
	53	94.3148148
	54	94.3333333
	55	94.3518519
	56	94.3703704
	57	94.3888889
	58	94.4074074
	59	94.4259259
	60	94.4444444

85°	0'	94.4444444
	1	94.4629630
	2	94.4814815
	3	94.5000000
	4	94.5185185
	5	94.5370370
	6	94.5555556
	7	94.5740741
	8	94.5925926
	9	94.6111111
	10	94.6296296
	11	94.6481481
	12	94.6666667
	13	94.6851852
	14	94.7037037
	15	94.7222222
	16	94.7407407
	17	94.7592593
	18	94.7777778
	19	94.7962963
	20	94.8148148
	21	94.8333333
	22	94.8518519
	23	94.8703704
	24	94.8888889
	25	94.9074074
	26	94.9259259
	27	94.9444444
	28	94.9629630
	29	94.9814815
	30	95.0000000

85°	30'	95.0000000
	31	95.0185185
	32	95.0370370
	33	95.0555556
	34	95.0740741
	35	95.0925926
	36	95.1111111
	37	95.1296296
	38	95.1481481
	39	95.1666667
	40	95.1851852
	41	95.2037037
	42	95.2222222
	43	95.2407407
	44	95.2592593
	45	95.2777778
	46	95.2962963
	47	95.3148148
	48	95.3333333
	49	95.3518519
	50	95.3703704
	51	95.3888889
	52	95.4074074
	53	95.4259259
	54	95.4444444
	55	95.4629630
	56	95.4814815
	57	95.5000000
	58	95.5185185
	59	95.5370370
	60	95.5555556



86°	0'	95.5555556
	1	95.5740741
	2	95.5925926
	3	95.6111111
	4	95.6296296
	5	95.6481481
	6	95.6666667
	7	95.6851852
	8	95.7037037
	9	95.7222222
	10	95.7407407
	11	95.7592593
	12	95.7777778
	13	95.7962963
	14	95.8148148
	15	95.8333333
	16	95.8518519
	17	95.8703704
	18	95.8888889
	19	95.9074074
	20	95.9259259
	21	95.9444444
	22	95.9629630
	23	95.9814815
	24	96.0000000
	25	96.0185185
	26	96.0370370
	27	96.0555556
	28	96.0740741
	29	96.0925926
	30	96.1111111

86°	30'	96.1111111
	31	96.1296296
	32	96.1481481
	33	96.1666667
	34	96.1851852
	35	96.2037037
	36	96.2222222
	37	96.2407407
	38	96.2592593
	39	96.2777778
	40	96.2962963
	41	96.3148148
	42	96.3333333
	43	96.3518519
	44	96.3703704
	45	96.3888889
	46	96.4074074
	47	96.4259259
	48	96.4444444
	49	96.4629630
	50	96.4814815
	51	96.5000000
	52	96.5185185
	53	96.5370370
	54	96.5555556
	55	96.5740741
	56	96.5925926
	57	96.6111111
	58	96.6296296
	59	96.6481481
	60	96.6666667

87°	0'	96.66666667	87°	30'	97.2222222
	1	96.6851852		31	97.2407407
	2	96.7037037		32	97.2592593
	3	96.7222222		33	97.2777778
	4	96.7407407		34	97.2962963
	5	96.7592593		35	97.3148148
	6	96.7777778		36	97.3333333
	7	96.7962963		37	97.3518519
	8	96.8148148		38	97.3703704
	9	96.8333333		39	97.3888889
	10	96.8518519		40	97.4074074
	11	96.8703704		41	97.4259259
	12	96.8888889		42	97.4444444
	13	96.9074074		43	97.4629630
	14	96.9259259		44	97.4814815
	15	96.9444444		45	97.5000000
	16	96.9629630		46	97.5185185
	17	96.9814815		47	97.5370370
	18	97.0000000		48	97.5555556
	19	97.0185185		49	97.5740741
	20	97.0370370		50	97.5925926
	21	97.0555556		51	97.6111111
	22	97.0740741		52	97.6296296
	23	97.0925926		53	97.6481481
	24	97.1111111		54	97.6666667
	25	97.1296296		55	97.6851852
	26	97.1481481		56	97.7037037
	27	97.1666667		57	97.7222222
	28	97.1851852		58	97.7407407
	29	97.2037037		59	97.7592593
	30	97.2222222		60	97.7777778

88°	0'	97.777 777 8
	1	97.796 296 3
	2	97.814 814 8
	3	97.833 333 3
	4	97.851 851 9
	5	97.870 370 4
	6	97.888 888 9
	7	97.907 407 4
	8	97.925 925 9
	9	97.944 444 4
	10	97.962 963 0
	11	97.981 481 5
	12	98.000 000 0
	13	98.018 518 5
	14	98.037 037 0
	15	98.055 555 6
	16	98.074 074 1
	17	98.092 592 6
	18	98.111 111 1
	19	98.129 629 6
	20	98.148 148 1
	21	98.166 666 7
	22	98.185 185 2
	23	98.203 703 7
	24	98.222 222 2
	25	98.240 740 7
	26	98.259 259 3
	27	98.277 777 8
	28	98.296 296 3
	29	98.314 814 8
	30	98.333 333 3

88°	30'	98.333 333 3
	31	98.351 851 9
	32	98.370 370 4
	33	98.388 888 9
	34	98.407 407 4
	35	98.425 925 9
	36	98.444 444 4
	37	98.462 963 0
	38	98.481 481 5
	39	98.500 000 0
	40	98.518 518 5
	41	98.537 037 0
	42	98.555 555 6
	43	98.574 074 1
	44	98.592 592 6
	45	98.611 111 1
	46	98.629 629 6
	47	98.648 148 1
	48	98.666 666 7
	49	98.685 185 2
	50	98.703 703 7
	51	98.722 222 2
	52	98.740 740 7
	53	98.759 259 3
	54	98.777 777 8
	55	98.796 296 3
	56	98.814 814 8
	57	98.833 333 3
	58	98.851 851 9
	59	98.870 370 4
	60	98.888 888 9

89°	0'	98.88888889
	1	98.9074074
	2	98.9259259
	3	98.9444444
	4	98.9629630
	5	98.9814815
	6	99.0000000
	7	99.0185185
	8	99.0370370
	9	99.0555556
	10	99.0740741
	11	99.0925926
	12	99.1111111
	13	99.1296296
	14	99.1481481
	15	99.1666667
	16	99.1851852
	17	99.2037037
	18	99.2222222
	19	99.2407407
	20	99.2592593
	21	99.2777778
	22	99.2962963
	23	99.3148148
	24	99.3333333
	25	99.3518519
	26	99.3703704
	27	99.3888889
	28	99.4074074
	29	99.4259259
	30	99.4444444

89°	30'	99.4444444
	31	99.4629630
	32	99.4814815
	33	99.5000000
	34	99.5185185
	35	99.5370370
	36	99.5555556
	37	99.5740741
	38	99.5925926
	39	99.6111111
	40	99.6296296
	41	99.6481481
	42	99.6666667
	43	99.6851852
	44	99.7037037
	45	99.7222222
	46	99.7407407
	47	99.7592593
	48	99.7777778
	49	99.7962963
	50	99.8148148
	51	99.8333333
	52	99.8518519
	53	99.8703704
	54	99.8888889
	55	99.9074074
	56	99.9259259
	57	99.9444444
	58	99.9629630
	59	99.9814815
	60	100.0000000

0	0.0 0 0 3 0 8 6	30	0.0 0 9 5 6 7 9
1	0.0 0 3 3 9 5 1	31	0.0 1 2 6 5 4 3
2	0.0 0 6 4 8 1 5	32	0.0 1 5 7 4 0 7
3	0.0 0 9 5 6 7 9	33	0.0 1 8 8 2 7 2
4	0.0 1 2 6 5 4 3	34	0.0 2 1 9 1 3 6
5	0.0 1 5 7 4 0 7	35	0.0 2 5 0 0 0 0
6	0.0 1 8 8 2 7 2	36	0.0 2 8 0 8 6 4
7	0.0 2 1 9 1 3 6	37	0.0 3 1 1 7 2 8
8	0.0 2 5 0 0 0 0	38	0.0 3 4 2 5 9 3
9	0.0 2 8 0 8 6 4	39	0.0 3 7 3 4 5 7
10	0.0 3 1 1 7 2 8	40	0.0 4 0 4 3 2 1
11	0.0 3 4 2 5 9 3	41	0.0 4 3 5 1 8 5
12	0.0 3 7 3 4 5 7	42	0.0 4 6 6 0 4 9
13	0.0 4 0 4 3 2 1	43	0.0 4 9 6 9 1 4
14	0.0 4 3 5 1 8 5	44	0.0 5 2 7 7 7 8
15	0.0 4 6 6 0 4 9	45	0.0 5 5 8 6 4 2
16	0.0 4 9 6 9 1 4	46	0.0 5 8 9 5 0 6
17	0.0 5 2 7 7 7 8	47	0.0 6 2 0 3 7 0
18	0.0 5 5 8 6 4 2	48	0.0 6 5 1 2 3 5
19	0.0 5 8 9 5 0 6	49	0.0 6 8 2 0 9 9
20	0.0 6 2 0 3 7 0	50	0.0 7 1 2 9 6 3
21	0.0 6 5 1 2 3 5	51	0.0 7 4 3 8 2 7
22	0.0 6 8 2 0 9 9	52	0.0 7 7 4 6 9 1
23	0.0 7 1 2 9 6 3	53	0.0 8 0 5 5 5 6
24	0.0 7 4 3 8 2 7	54	0.0 8 3 6 4 2 0
25	0.0 7 7 4 6 9 1	55	0.0 8 6 7 2 8 4
26	0.0 8 0 5 5 5 6	56	0.0 8 9 8 1 4 8
27	0.0 8 3 6 4 2 0	57	0.0 9 2 9 0 1 2
28	0.0 8 6 7 2 8 4	58	0.0 9 5 9 8 7 7
29	0.0 8 9 8 1 4 8	59	0.0 9 9 0 7 4 1
30	0.0 9 2 9 0 1 2	60	0.1 0 2 1 6 0 5