
UNITED STATES GEOLOGICAL SURVEY,

J. W. POWELL, DIRECTOR.

TABLE OF DIFFERENCES OF ALTITUDE

TO THE NEAREST FOOT FOR

Angles from 1 Minute to 2 Degrees and for Distances Under 1 Mile.

EXPLANATION OF THE TABLE :

The top line represents differences of altitude in feet. The first column gives vertical angles in degrees and minutes. The body of the table gives distances in miles and hundredths of a mile, corresponding to the number of feet at the top of the column, and the angle at the left of the line.

WASHINGTON, D. C.:

1891.

ARGUMENT.—ANGLE IN DEGREES AND MINUTES, AND DISTANCES IN HUNDREDS OF A MILE FOR DIFFERENCES OF ELEVATION IN FEET.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
01	.65	1.3	1.9	2.6	3.3	3.9	4.6	5.2	5.9	6.5	7.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
02	.33	.65	.97	1.3	1.6	1.9	2.3	2.6	2.9	3.3	3.6	3.9	4.2	4.6	4.9	5.2	5.5	5.9	6.2	6.5	6.8	---	---	---	---	---	---	---	---	
03	.22	.43	.65	.86	1.1	1.3	1.5	1.7	1.9	2.2	2.4	2.6	2.8	3.0	3.3	3.5	3.7	3.9	4.1	4.3	4.6	4.8	5.0	5.2	5.4	5.6	5.9	6.1	6.3	6.5
04	.16	.33	.49	.65	.81	.98	1.1	1.3	1.5	1.6	1.8	1.9	2.1	2.3	2.4	2.6	2.8	2.9	3.1	3.3	3.4	3.6	3.7	3.9	4.1	4.2	4.4	4.6	4.7	4.9
05	.13	.26	.39	.52	.65	.78	.91	1.0	1.2	1.3	1.4	1.6	1.7	1.8	1.9	2.1	2.2	2.3	2.5	2.6	2.7	2.9	3.0	3.1	3.3	3.4	3.5	3.6	3.8	3.9
06	.11	.22	.33	.43	.54	.65	.76	.87	.98	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.3
07	.09	.19	.28	.37	.47	.56	.65	.74	.84	.93	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8
08	.08	.16	.24	.33	.41	.49	.57	.65	.73	.81	.90	.98	1.1	1.1	1.2	1.3	1.4	1.5	1.6	1.6	1.7	1.8	1.9	1.9	2.0	2.1	2.2	2.3	2.4	2.4
09	.07	.14	.22	.29	.36	.43	.51	.58	.66	.72	.80	.87	.94	1.0	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.6	1.7	1.7	1.8	1.9	1.9	2.0	2.1	2.2
10	.07	.13	.20	.26	.33	.39	.46	.52	.59	.65	.71	.78	.85	.91	.98	1.0	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.6	1.6	1.7	1.8	1.8	1.9	1.9
11	.06	.12	.18	.24	.29	.36	.41	.47	.53	.59	.65	.71	.77	.83	.89	.95	1.0	1.1	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.5	1.6	1.7	1.7	1.8
12	.05	.11	.16	.22	.27	.33	.38	.43	.49	.54	.60	.65	.71	.76	.81	.87	.92	.98	1.0	1.1	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.5	1.6	1.6
13	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.5
14	.05	.09	.14	.19	.23	.28	.33	.37	.42	.47	.51	.56	.60	.65	.70	.74	.79	.84	.88	.93	.98	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.4
15	.04	.09	.13	.17	.22	.26	.30	.35	.39	.43	.48	.52	.56	.61	.65	.69	.74	.78	.83	.87	.91	.96	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.3
16	.04	.08	.12	.16	.20	.24	.28	.33	.37	.41	.45	.49	.53	.57	.61	.65	.69	.73	.77	.81	.85	.90	.94	.98	1.0	1.1	1.1	1.1	1.2	1.2
17	.04	.08	.11	.15	.19	.23	.27	.31	.34	.38	.42	.46	.50	.54	.57	.61	.65	.69	.73	.77	.80	.84	.88	.92	.96	1.0	1.0	1.1	1.1	1.2
18	.04	.07	.11	.14	.18	.22	.25	.29	.33	.36	.40	.43	.47	.51	.54	.58	.61	.65	.69	.72	.76	.80	.83	.87	.90	.94	.98	1.0	1.0	1.1
19	.03	.07	.10	.14	.17	.21	.24	.27	.31	.34	.38	.41	.44	.48	.51	.55	.58	.62	.65	.69	.72	.75	.79	.82	.86	.89	.93	.96	.99	1.0
20	.03	.07	.10	.13	.16	.19	.23	.25	.29	.32	.36	.39	.42	.46	.49	.52	.55	.59	.62	.65	.68	.72	.75	.78	.81	.84	.88	.91	.94	.98
21	.03	.06	.09	.12	.16	.19	.21	.25	.28	.31	.34	.37	.40	.43	.47	.50	.53	.56	.59	.62	.65	.68	.71	.74	.78	.81	.84	.87	.90	.93
22	.03	.06	.09	.12	.14	.18	.20	.24	.27	.30	.33	.35	.38	.41	.44	.47	.50	.53	.56	.59	.62	.65	.68	.71	.74	.77	.80	.83	.86	.89
23	.03	.06	.08	.11	.14	.17	.19	.23	.25	.28	.31	.34	.37	.40	.42	.45	.48	.51	.54	.57	.59	.62	.65	.68	.71	.74	.76	.79	.82	.85
24	.03	.05	.08	.11	.14	.16	.19	.22	.25	.27	.30	.33	.35	.38	.41	.43	.46	.49	.52	.54	.57	.60	.62	.65	.68	.71	.73	.76	.79	.81
25	.03	.05	.08	.10	.13	.16	.18	.21	.24	.26	.29	.31	.34	.36	.39	.42	.44	.47	.50	.52	.55	.57	.60	.63	.65	.68	.70	.73	.76	.78
26	.03	.05	.08	.10	.12	.15	.18	.20	.23	.25	.28	.30	.32	.35	.38	.40	.43	.45	.48	.50	.53	.55	.58	.60	.63	.65	.68	.70	.73	.75
27	.02	.05	.07	.10	.12	.14	.17	.19	.22	.24	.27	.28	.31	.34	.36	.39	.41	.43	.46	.48	.51	.53	.55	.58	.60	.63	.65	.68	.70	.72
28	.02	.04	.07	.09	.12	.14	.16	.19	.22	.23	.26	.28	.30	.33	.34	.37	.40	.42	.44	.47	.49	.51	.53	.56	.58	.60	.63	.65	.67	.70
29	.02	.04	.07	.09	.11	.13	.16	.18	.20	.22	.25	.27	.29	.31	.34	.36	.38	.40	.43	.45	.47	.49	.52	.54	.56	.58	.61	.63	.65	.67
30	.02	.04	.07	.09	.11	.13	.15	.17	.20	.22	.24	.26	.28	.30	.33	.35	.37	.39	.41	.43	.46	.48	.50	.52	.54	.56	.59	.61	.63	.65

ARGUMENT.—ANGLE IN DEGREES AND MINUTES, AND DISTANCES IN HUNDRETHS OF A MILE FOR DIFFERENCES OF ELEVATION IN FEET.

	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
01																														
02																														
03																														
04	5.0	5.2	5.4	5.5	5.7	5.9	6.0	6.2	6.3																					
05	4.0	4.2	4.3	4.4	4.6	4.7	4.8	4.9	5.1																					
06	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.9	6.0	6.1	6.2	6.3	6.4	6.5
07	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8
08	2.5	2.6	2.7	2.8	2.8	2.9	3.0	3.1	3.2	3.3	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
09	2.2	2.3	2.4	2.5	2.5	2.6	2.7	2.7	2.8	2.9	3.0	3.0	3.1	3.2	3.3	3.3	3.4	3.5	3.5	3.6	3.7	3.8	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5
10	2.0	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.5	2.6	2.7	2.7	2.8	2.9	2.9	3.0	3.1	3.1	3.2	3.3	3.3	3.4	3.4	3.5	3.6	3.6	3.7	3.8	3.8	3.9
11	1.8	1.9	1.9	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.4	2.5	2.5	2.6	2.7	2.7	2.8	2.8	2.9	3.0	3.0	3.1	3.1	3.2	3.3	3.3	3.4	3.4	3.5	3.5
12	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.1	3.1	3.2	3.3	3.3
13	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.1
14	1.4	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8
15	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.7	2.8
16	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.4
17	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.3
18	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.3
19	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.1	2.1	2.1
20	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.9	1.9	1.9	1.9
21	.96	.99	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.9
22	.92	.95	.98	1.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.8
23	.88	.91	.93	.96	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.7	1.7	1.8
24	.84	.87	.90	.92	.95	.98	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.7	1.8
25	.81	.83	.86	.89	.91	.94	.96	.99	1.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.7	1.8
26	.78	.80	.83	.85	.88	.90	.93	.95	.98	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.5	1.5
27	.75	.77	.80	.82	.84	.87	.89	.92	.94	.96	.99	1.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.5
28	.72	.74	.77	.79	.81	.84	.86	.88	.91	.93	.95	.98	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4
29	.70	.72	.74	.76	.79	.81	.83	.85	.88	.90	.92	.94	.97	.99	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3
30	.67	.69	.72	.74	.76	.78	.80	.82	.85	.87	.89	.91	.93	.96	.98	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.3

ARGUMENT.—ANGLE IN DEGREES AND MINUTES, AND DISTANCES IN HUNDREDS OF A MILE FOR DIFFERENCES OF ELEVATION IN FEET.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	.02	.04	.06	.08	.11	.13	.15	.17	.19	.21	.23	.25	.27	.29	.32	.34	.36	.38	.40	.42	.44	.46	.48	.50	.53	.55	.57	.59	.61	.63
32	.02	.04	.06	.08	.10	.12	.14	.16	.18	.20	.22	.24	.26	.28	.31	.33	.35	.37	.39	.41	.43	.45	.47	.49	.51	.53	.55	.57	.59	.61
33	.02	.04	.06	.08	.10	.12	.14	.16	.18	.20	.22	.24	.26	.28	.30	.32	.34	.36	.37	.39	.41	.43	.45	.47	.49	.51	.53	.55	.57	.59
34	.02	.04	.06	.08	.10	.11	.13	.15	.17	.19	.21	.23	.25	.27	.29	.31	.33	.34	.36	.38	.40	.42	.44	.46	.48	.50	.52	.54	.56	.57
35	.02	.04	.06	.07	.09	.11	.13	.15	.17	.19	.20	.22	.24	.26	.28	.30	.32	.33	.35	.37	.39	.41	.43	.45	.47	.48	.50	.52	.54	.56
36	.02	.04	.05	.07	.09	.11	.13	.14	.16	.18	.20	.22	.24	.25	.27	.29	.31	.33	.34	.36	.38	.40	.42	.43	.45	.47	.49	.51	.52	.54
37	.02	.04	.05	.07	.09	.11	.12	.14	.16	.18	.19	.21	.23	.25	.26	.28	.30	.32	.33	.35	.37	.39	.40	.42	.44	.46	.48	.49	.51	.53
38	.02	.03	.05	.07	.09	.10	.12	.14	.15	.17	.19	.21	.22	.24	.26	.27	.29	.31	.33	.34	.36	.38	.39	.41	.43	.45	.46	.48	.50	.51
39	.02	.03	.05	.07	.08	.10	.12	.13	.15	.17	.18	.20	.22	.23	.25	.27	.28	.30	.32	.33	.35	.37	.38	.40	.42	.43	.45	.48	.48	.50
40	.02	.03	.05	.07	.08	.10	.11	.13	.15	.16	.18	.20	.21	.23	.24	.26	.28	.29	.31	.33	.34	.36	.37	.39	.41	.42	.44	.46	.47	.49
41	.02	.03	.05	.06	.08	.10	.11	.13	.14	.16	.17	.19	.21	.22	.24	.25	.27	.29	.30	.33	.33	.35	.37	.38	.40	.41	.43	.44	.46	.48
42	.02	.03	.05	.06	.08	.09	.11	.12	.14	.16	.17	.19	.20	.22	.23	.25	.26	.28	.29	.31	.33	.34	.36	.37	.39	.40	.42	.43	.45	.47
43	.02	.03	.05	.06	.08	.09	.11	.12	.14	.15	.17	.18	.20	.21	.23	.24	.26	.27	.29	.30	.32	.33	.35	.36	.38	.39	.41	.42	.44	.45
44	.02	.03	.04	.06	.07	.09	.10	.12	.13	.15	.16	.18	.19	.21	.22	.24	.25	.27	.28	.30	.31	.33	.34	.36	.37	.38	.40	.41	.43	.44
45	.01	.03	.04	.06	.07	.09	.10	.12	.13	.14	.16	.17	.19	.20	.22	.23	.25	.26	.27	.29	.30	.32	.33	.35	.36	.38	.39	.41	.42	.43
46	.01	.03	.04	.06	.07	.08	.10	.11	.13	.14	.16	.17	.18	.20	.21	.23	.24	.25	.27	.28	.30	.31	.33	.34	.35	.37	.38	.40	.41	.42
47	.01	.03	.04	.06	.07	.08	.10	.11	.12	.14	.15	.17	.18	.19	.21	.22	.24	.25	.26	.28	.29	.30	.32	.33	.35	.36	.37	.39	.40	.42
48	.01	.03	.04	.05	.07	.08	.09	.11	.12	.14	.15	.16	.18	.19	.20	.22	.23	.24	.26	.27	.28	.30	.31	.33	.34	.35	.37	.38	.39	.41
49	.01	.03	.04	.05	.07	.08	.09	.11	.12	.13	.15	.16	.17	.19	.20	.21	.23	.24	.25	.27	.28	.29	.31	.32	.33	.35	.36	.37	.39	.40
50	.01	.03	.04	.05	.07	.08	.09	.10	.12	.13	.14	.16	.17	.18	.20	.21	.22	.23	.25	.26	.27	.28	.30	.31	.33	.34	.35	.36	.38	.39
51	.01	.03	.04	.05	.06	.08	.09	.10	.11	.13	.14	.15	.17	.18	.19	.20	.22	.23	.24	.26	.27	.28	.29	.31	.32	.33	.34	.36	.37	.38
52	.01	.03	.04	.05	.06	.08	.09	.10	.11	.13	.14	.15	.16	.18	.19	.20	.21	.23	.24	.25	.26	.28	.29	.30	.31	.33	.34	.35	.36	.38
53	.01	.02	.04	.05	.06	.07	.09	.10	.11	.12	.13	.15	.16	.17	.18	.20	.21	.22	.23	.25	.26	.27	.28	.29	.31	.32	.33	.34	.36	.37
54	.01	.02	.04	.05	.06	.07	.08	.10	.11	.12	.13	.14	.16	.17	.18	.19	.21	.22	.23	.24	.25	.27	.28	.29	.30	.31	.33	.34	.35	.36
55	.01	.02	.04	.05	.06	.07	.08	.09	.11	.12	.13	.14	.16	.17	.18	.19	.20	.21	.22	.24	.25	.26	.27	.28	.30	.31	.32	.33	.34	.35
56	.01	.02	.03	.05	.06	.07	.08	.09	.10	.12	.13	.14	.15	.16	.17	.19	.20	.21	.22	.23	.24	.26	.27	.28	.29	.30	.31	.33	.34	.35
57	.01	.02	.03	.05	.06	.07	.08	.09	.10	.11	.13	.14	.15	.16	.17	.18	.19	.21	.22	.23	.24	.25	.26	.27	.29	.30	.31	.32	.33	.34
58	.01	.02	.03	.04	.06	.07	.08	.09	.10	.11	.12	.13	.14	.16	.17	.18	.19	.20	.21	.22	.24	.25	.26	.27	.28	.29	.30	.31	.33	.34
59	.01	.02	.03	.04	.06	.07	.08	.09	.10	.11	.12	.13	.14	.15	.17	.18	.19	.20	.21	.22	.23	.24	.25	.26	.28	.29	.30	.31	.32	.33
1° 0'	.01	.02	.03	.04	.05	.07	.08	.09	.10	.11	.12	.13	.14	.15	.16	.17	.18	.20	.21	.22	.23	.24	.25	.26	.27	.28	.29	.30	.31	.33

ARGUMENT.—ANGLE IN DEGREES AND MINUTES, AND DISTANCES IN HUNDRETHS OF A MILE FOR DIFFERENCES OF ELEVATION IN FEET.

	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	
31	.65	.67	.69	.71	.74	.76	.77	.80	.82	.84	.86	.88	.90	.92	.95	.97	.99	I.0	I.0	I.0	I.1	I.1	I.1	I.1	I.1	I.2	I.2	I.2	I.2	I.3	
32	.63	.65	.67	.69	.71	.73	.75	.77	.79	.81	.83	.85	.88	.90	.92	.94	.96	.98	I.0	I.0	I.0	I.0	I.1	I.1	I.1	I.1	I.2	I.2	I.2	I.2	I.2
33	.61	.63	.65	.67	.69	.71	.73	.75	.77	.79	.81	.83	.85	.87	.89	.91	.93	.93	.97	.99	I.0	I.0	I.0	I.1	I.1	I.1	I.1	I.1	I.1	I.1	I.2
34	.59	.61	.63	.65	.67	.69	.71	.73	.75	.77	.79	.80	.82	.84	.86	.88	.90	.92	.94	.96	.98	I.0	I.0	I.0	I.0	I.1	I.1	I.1	I.1	I.1	I.1
35	.58	.60	.60	.63	.65	.67	.69	.71	.73	.74	.77	.78	.80	.82	.84	.86	.87	.89	.91	.91	.95	.97	.99	I.0	I.0	I.0	I.1	I.1	I.1	I.1	I.1
36	.56	.58	.60	.62	.63	.65	.67	.69	.71	.72	.74	.76	.78	.80	.81	.81	.85	.87	.89	.90	.92	.94	.96	.98	I.0	I.0	I.0	I.0	I.1	I.1	I.1
37	.55	.56	.58	.60	.62	.63	.65	.67	.69	.70	.72	.74	.76	.77	.79	.81	.83	.84	.86	.88	.90	.92	.93	.95	.97	.99	I.0	I.0	I.0	I.1	I.1
38	.53	.55	.57	.58	.60	.62	.63	.65	.67	.69	.70	.72	.74	.75	.77	.79	.81	.82	.84	.86	.87	.89	.91	.92	.94	.96	.98	.99	I.0	I.0	I.0
39	.52	.53	.55	.57	.58	.60	.62	.63	.65	.67	.68	.70	.72	.73	.75	.77	.78	.80	.82	.84	.85	.87	.89	.90	.92	.94	.96	.98	.99	I.0	I.0
40	.50	.52	.54	.55	.57	.59	.60	.62	.63	.65	.67	.68	.70	.72	.73	.75	.77	.78	.80	.81	.83	.85	.86	.88	.90	.91	.93	.94	.96	.98	.98
41	.49	.51	.52	.54	.56	.57	.59	.60	.62	.64	.65	.67	.68	.70	.71	.73	.75	.76	.78	.79	.81	.83	.84	.86	.87	.89	.91	.92	.94	.95	.95
42	.48	.50	.51	.53	.54	.56	.57	.59	.60	.62	.64	.65	.67	.68	.70	.71	.73	.74	.76	.78	.80	.81	.82	.85	.86	.87	.88	.90	.91	.93	.93
43	.47	.48	.50	.51	.53	.55	.56	.58	.59	.61	.62	.64	.65	.67	.68	.70	.71	.73	.74	.76	.77	.79	.80	.82	.83	.85	.86	.89	.89	.91	.91
44	.46	.47	.49	.50	.52	.53	.55	.56	.58	.59	.61	.62	.64	.65	.67	.68	.70	.71	.73	.74	.75	.77	.78	.80	.81	.83	.84	.86	.87	.89	.89
45	.45	.46	.48	.49	.51	.52	.54	.55	.56	.58	.59	.61	.62	.64	.65	.67	.68	.69	.71	.72	.74	.75	.77	.78	.80	.81	.83	.84	.85	.87	.87
46	.44	.45	.47	.48	.50	.51	.52	.54	.55	.57	.58	.59	.61	.62	.64	.65	.67	.68	.69	.71	.72	.74	.75	.76	.78	.79	.81	.82	.84	.85	.85
47	.43	.44	.46	.47	.48	.50	.51	.53	.54	.55	.57	.58	.60	.61	.62	.64	.65	.66	.68	.69	.71	.72	.73	.75	.76	.78	.79	.80	.82	.83	.83
48	.42	.43	.45	.46	.47	.49	.50	.52	.53	.54	.56	.57	.58	.60	.61	.62	.64	.65	.66	.68	.69	.71	.72	.73	.75	.76	.77	.79	.80	.81	.81
49	.41	.43	.44	.45	.47	.48	.49	.50	.52	.53	.54	.56	.57	.58	.60	.61	.62	.64	.65	.66	.68	.69	.70	.72	.73	.74	.76	.77	.78	.80	.80
50	.40	.42	.43	.44	.46	.47	.48	.49	.51	.52	.53	.55	.56	.57	.59	.60	.61	.63	.64	.65	.66	.68	.69	.70	.72	.74	.74	.76	.77	.78	.78
51	.40	.41	.42	.43	.45	.46	.47	.49	.50	.51	.52	.54	.55	.56	.57	.59	.60	.61	.63	.64	.65	.66	.68	.69	.70	.72	.73	.74	.75	.77	.77
52	.39	.40	.41	.43	.44	.45	.46	.48	.49	.50	.51	.53	.54	.55	.56	.58	.59	.60	.61	.63	.64	.65	.66	.68	.69	.70	.71	.73	.74	.75	.75
53	.38	.39	.41	.42	.43	.44	.45	.47	.48	.49	.50	.52	.53	.54	.55	.57	.58	.59	.60	.61	.63	.64	.65	.66	.68	.69	.70	.71	.72	.74	.74
54	.37	.39	.40	.41	.42	.43	.45	.46	.47	.48	.49	.51	.52	.53	.54	.55	.57	.59	.59	.60	.61	.63	.64	.65	.66	.68	.69	.70	.71	.72	.72
55	.37	.38	.40	.40	.41	.43	.44	.45	.46	.47	.49	.50	.51	.52	.53	.54	.56	.57	.58	.59	.60	.62	.63	.64	.65	.66	.67	.69	.70	.71	.71
56	.36	.37	.38	.40	.41	.42	.43	.44	.45	.47	.48	.49	.50	.51	.52	.53	.55	.56	.57	.58	.59	.60	.62	.63	.64	.65	.66	.67	.69	.70	.70
57	.35	.37	.38	.39	.40	.41	.42	.43	.45	.46	.47	.48	.49	.50	.51	.53	.54	.55	.56	.57	.58	.59	.61	.62	.63	.64	.65	.66	.67	.69	.69
58	.35	.36	.37	.38	.39	.40	.42	.43	.44	.45	.46	.47	.48	.49	.51	.52	.53	.54	.55	.56	.57	.58	.60	.61	.62	.63	.64	.65	.66	.67	.67
59	.34	.35	.36	.38	.39	.40	.41	.42	.43	.44	.45	.46	.47	.49	.50	.51	.52	.53	.54	.55	.56	.57	.59	.60	.61	.62	.63	.64	.65	.66	.66
1° 00'	.34	.35	.36	.37	.38	.39	.40	.41	.42	.43	.44	.46	.47	.48	.49	.50	.51	.52	.53	.54	.54	.56	.58	.59	.60	.61	.62	.63	.64	.65	.65

ARGUMENT.—ANGLE IN DEGREES AND MINUTES, AND DISTANCES IN HUNDREDS OF A MILE FOR DIFFERENCES OF ELEVATION IN FEET.

	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82										
31	1.3	1.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
32	1.2	1.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
33	1.2	1.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
34	1.2	1.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
35	1.1	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
36	1.1	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
37	1.1	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
38	1.0	1.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
39	1.0	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
40	.99	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
41	.97	.98	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
42	.95	.96	.98	.99	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
43	.92	.94	.95	.97	.98	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
44	.90	.92	.93	.95	.96	.98	.99	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
45	.88	.90	.91	.93	.94	.95	.97	.98	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---									
46	.86	.88	.89	.91	.92	.93	.95	.96	.98	.99	1.0	---	---	---	---	---	---	---	---	---	---	---	---									
47	.84	.86	.87	.89	.90	.91	.93	.94	.96	.97	.98	1.0	---	---	---	---	---	---	---	---	---	---	---									
48	.83	.84	.85	.87	.88	.90	.91	.92	.94	.95	.96	.98	.99	1.0	---	---	---	---	---	---	---	---	---									
49	.81	.82	.84	.85	.86	.88	.89	.90	.92	.93	.94	.96	.97	.98	1.0	---	---	---	---	---	---	---	---									
50	.79	.80	.82	.84	.85	.86	.87	.89	.90	.91	.93	.94	.95	.96	.98	.99	1.0	---	---	---	---	---	---	83	84	85	86	87	88	89	90	
51	.78	.79	.80	.82	.83	.84	.86	.87	.88	.89	.91	.92	.93	.94	.96	.97	.98	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	
52	.77	.78	.79	.80	.81	.83	.84	.85	.86	.87	.89	.90	.91	.92	.94	.95	.96	.97	.99	1.0	---	---	---	---	---	---	---	---	---	---	---	
53	.75	.76	.77	.79	.80	.81	.83	.84	.85	.86	.87	.88	.90	.91	.92	.93	.95	.96	.97	.98	.99	1.0	---	---	---	---	---	---	---	---	---	
54	.74	.75	.76	.77	.78	.79	.81	.82	.83	.84	.86	.87	.88	.90	.90	.92	.93	.94	.95	.96	.98	.99	.99	1.0	---	---	---	---	---	---	---	
55	.72	.73	.75	.76	.77	.78	.79	.80	.82	.83	.84	.85	.86	.88	.89	.90	.91	.92	.94	.95	.96	.97	.98	.99	1.0	---	---	---	---	---	---	
56	.71	.72	.73	.74	.76	.77	.78	.79	.80	.81	.83	.84	.85	.86	.87	.88	.90	.91	.92	.93	.94	.95	.97	.98	.99	1.0	---	---	---	---	---	
57	.70	.71	.72	.73	.75	.76	.77	.78	.79	.80	.82	.83	.84	.85	.86	.87	.89	.90	.91	.92	.93	.94	.96	.97	.98	.99	1.0	---	---	---	---	
58	.68	.70	.71	.72	.73	.74	.75	.76	.77	.79	.80	.81	.82	.83	.84	.85	.86	.88	.89	.90	.91	.92	.93	.94	.95	.97	.98	.99	1.0	---	---	
59	.67	.68	.70	.71	.72	.73	.74	.75	.76	.77	.78	.79	.81	.82	.83	.84	.85	.86	.87	.88	.89	.90	.92	.93	.94	.95	.96	.97	.98	.99	---	
1° 00'	.66	.67	.68	.69	.71	.72	.73	.74	.75	.76	.77	.78	.79	.80	.81	.82	.84	.85	.86	.87	.88	.89	.90	.91	.92	.93	.94	.95	.97	.98	.99	---

	91	92
59 1° 00'	1.0 .99	---

	91	92
59 1° 00'	1.0 .99	---
		1.0

ARGUMENT.—ANGLE IN DEGREES AND MINUTES, AND DISTANCES IN HUNDREDS OF A MILE FOR DIFFERENCES OF ELEVATION IN FEET.

° /	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
1° 01'	.01	.02	.03	.04	.05	.06	.07	.08	.09	.10	.11	.12	.13	.14	.15	.16	.17	.18	.19	.20	.21	.22	.23	.25	.26	.27	.28	.29	.30	.31	.32
02	.01	.02	.03	.04	.05	.06	.07	.08	.09	.10	.11	.13	.14	.15	.16	.17	.18	.19	.20	.21	.22	.23	.24	.25	.26	.27	.28	.29	.30	.32	
03	.01	.02	.03	.04	.05	.06	.07	.08	.09	.10	.11	.12	.13	.14	.16	.17	.18	.19	.20	.21	.22	.23	.24	.25	.26	.27	.28	.29	.30	.31	
04	.01	.02	.03	.04	.05	.06	.07	.08	.09	.10	.11	.12	.13	.14	.15	.16	.17	.18	.19	.20	.21	.22	.23	.24	.25	.26	.27	.28	.29	.31	
1° 05'	.01	.02	.03	.04	.05	.06	.07	.08	.09	.10	.11	.12	.13	.14	.15	.16	.17	.18	.19	.20	.21	.22	.23	.24	.25	.26	.27	.28	.29	.30	
06	.01	.02	.03	.04	.05	.06	.07	.08	.09	.10	.11	.12	.13	.14	.15	.16	.17	.18	.19	.20	.21	.22	.23	.24	.25	.26	.27	.28	.29	.30	
07	.01	.02	.03	.04	.05	.06	.07	.08	.09	.10	.11	.12	.13	.14	.15	.16	.17	.17	.18	.19	.20	.21	.22	.23	.24	.25	.26	.27	.28	.29	
08	.01	.02	.03	.04	.05	.06	.07	.08	.09	.10	.11	.12	.13	.14	.15	.16	.17	.18	.19	.20	.21	.22	.23	.24	.25	.26	.27	.28	.29		
09	.01	.02	.03	.04	.05	.06	.07	.08	.08	.09	.10	.11	.12	.13	.14	.15	.16	.17	.18	.19	.20	.21	.22	.23	.24	.25	.25	.26	.27	.28	
1° 10'	.01	.02	.03	.04	.05	.06	.07	.07	.08	.09	.10	.11	.12	.13	.14	.15	.16	.17	.18	.19	.20	.20	.21	.22	.23	.24	.25	.26	.27	.28	
11	.01	.02	.03	.04	.05	.06	.06	.07	.08	.09	.10	.11	.12	.13	.14	.15	.16	.17	.17	.18	.19	.20	.21	.22	.23	.24	.25	.26	.27	.28	
12	.01	.02	.03	.04	.05	.05	.06	.07	.08	.09	.10	.11	.12	.13	.14	.14	.15	.16	.17	.18	.19	.20	.21	.22	.23	.24	.24	.25	.26	.27	
13	.01	.02	.03	.04	.04	.05	.06	.07	.08	.09	.10	.11	.12	.12	.13	.14	.15	.16	.17	.18	.19	.20	.21	.21	.22	.23	.24	.25	.26	.27	
14	.01	.02	.03	.04	.04	.05	.06	.07	.08	.09	.10	.11	.11	.12	.13	.14	.15	.16	.17	.18	.18	.19	.20	.21	.22	.23	.24	.25	.26	.26	
1° 15'	.01	.02	.03	.03	.04	.05	.06	.07	.08	.09	.10	.10	.11	.12	.13	.14	.15	.16	.16	.17	.18	.19	.20	.21	.22	.23	.23	.24	.25	.26	
16	.01	.02	.03	.03	.04	.05	.06	.07	.08	.09	.09	.10	.11	.12	.13	.14	.15	.15	.16	.17	.18	.19	.20	.21	.21	.22	.23	.24	.25	.26	
17	.01	.02	.03	.03	.04	.05	.06	.07	.08	.08	.09	.10	.11	.12	.13	.14	.14	.15	.16	.17	.18	.19	.19	.20	.21	.22	.23	.24	.25	.25	
18	.01	.02	.03	.03	.04	.05	.06	.07	.08	.08	.09	.10	.11	.12	.13	.13	.14	.15	.16	.17	.18	.18	.19	.20	.21	.22	.23	.23	.24	.25	
19	.01	.02	.02	.03	.04	.05	.06	.07	.07	.08	.09	.10	.11	.12	.12	.13	.14	.15	.16	.16	.17	.18	.19	.20	.21	.21	.22	.23	.24	.25	
1° 20'	.01	.02	.02	.03	.04	.05	.06	.07	.07	.08	.09	.10	.11	.11	.12	.13	.14	.15	.15	.16	.17	.18	.19	.20	.20	.21	.22	.23	.24	.24	
21	.01	.02	.02	.03	.04	.05	.06	.06	.07	.08	.09	.10	.10	.11	.12	.13	.14	.14	.15	.16	.17	.18	.18	.19	.20	.21	.22	.23	.23	.24	
22	.01	.02	.02	.03	.04	.05	.06	.06	.07	.08	.09	.10	.10	.11	.12	.13	.13	.14	.15	.16	.17	.17	.18	.19	.20	.21	.21	.22	.23	.24	
23	.01	.02	.02	.03	.04	.05	.05	.06	.07	.08	.09	.09	.10	.11	.12	.13	.13	.14	.15	.16	.16	.17	.18	.19	.20	.20	.21	.22	.23	.24	
24	.01	.02	.02	.03	.04	.05	.05	.06	.07	.08	.09	.09	.10	.11	.12	.12	.13	.14	.15	.16	.16	.17	.18	.19	.19	.20	.21	.22	.23	.24	
1° 25'	.01	.02	.02	.03	.04	.05	.05	.06	.07	.08	.08	.09	.10	.11	.11	.12	.13	.14	.15	.15	.16	.17	.18	.18	.19	.20	.21	.21	.22	.23	
26	.01	.02	.02	.03	.04	.05	.05	.06	.07	.08	.08	.09	.10	.11	.11	.12	.13	.14	.14	.15	.16	.17	.17	.18	.19	.20	.20	.21	.22	.23	
27	.01	.01	.02	.03	.04	.04	.05	.06	.07	.07	.08	.09	.10	.10	.11	.12	.13	.13	.14	.15	.16	.16	.17	.18	.19	.19	.20	.21	.22	.22	
28	.01	.01	.02	.03	.04	.04	.05	.06	.07	.07	.08	.09	.10	.10	.11	.12	.13	.13	.14	.15	.16	.16	.17	.18	.18	.19	.20	.21	.21	.22	
29	.01	.01	.02	.03	.04	.04	.05	.06	.07	.07	.08	.09	.10	.10	.11	.12	.12	.13	.14	.15	.15	.16	.17	.18	.18	.19	.20	.20	.21	.22	
1° 30'	.01	.01	.02	.03	.04	.04	.05	.06	.07	.07	.08	.09	.09	.10	.11	.12	.12	.13	.14	.14	.15	.16	.17	.17	.18	.19	.20	.20	.21	.22	

ARGUMENT.—ANGLE IN DEGREES AND MINUTES, AND DISTANCES IN HUNDREDS OF A MILE FOR DIFFERENCES OF ELEVATION IN FEET.

° /	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1° 01'	33	34	35	36	37	38	39	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	57	58	59	60	61	62	63	64
02	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	53	54	55	56	57	58	59	60	61	62	63
03	32	33	34	35	36	37	38	39	40	41	42	43	44	45	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
04	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
1° 05'	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
06	31	32	33	34	35	36	37	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
07	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	52	53	54	55	56	57	58
08	30	31	32	33	34	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58
09	29	30	31	32	33	34	35	36	37	38	39	40	41	42	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
1° 10'	29	30	31	32	33	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	47	48	49	50	51	52	53	54	55	56
11	28	29	30	31	32	33	34	35	36	37	38	39	39	40	41	42	43	44	45	46	47	48	49	50	50	51	52	53	54	55
12	28	29	30	31	32	33	33	34	35	36	37	38	39	40	41	42	42	43	44	45	46	47	48	49	50	51	52	52	53	54
13	28	29	29	30	31	32	33	34	35	36	37	37	38	39	40	41	42	43	44	45	45	46	47	48	49	50	51	52	53	53
14	27	28	29	30	31	32	33	33	34	35	36	37	38	39	40	40	41	42	43	44	45	46	47	48	48	49	50	51	52	53
1° 15'	27	28	29	30	30	31	32	33	34	35	36	36	37	38	39	40	41	42	43	43	44	45	46	47	48	49	49	50	51	52
16	27	27	28	29	30	31	32	33	33	34	35	36	37	38	39	39	40	41	42	43	44	45	45	46	47	48	49	50	51	51
17	26	27	28	29	30	30	31	32	33	34	35	36	36	37	38	39	40	41	41	42	43	44	45	46	47	47	48	49	50	51
18	26	27	28	28	29	30	31	32	33	34	35	36	37	38	38	39	40	41	42	43	43	44	45	46	47	47	48	48	49	50
19	26	26	27	28	29	30	30	31	32	33	34	35	35	36	37	38	39	40	40	41	42	43	44	45	45	46	47	48	49	49
1° 20'	25	26	27	28	28	29	30	31	32	33	33	34	35	36	37	37	38	39	40	41	41	42	43	44	45	46	46	47	48	49
21	25	26	27	27	28	29	30	31	31	32	33	34	35	35	36	37	38	39	39	40	41	42	43	43	44	45	46	47	47	48
22	25	25	26	27	28	29	29	30	31	32	33	33	34	35	36	37	37	38	39	40	40	41	42	43	44	44	45	46	47	48
23	24	25	26	27	27	28	29	30	31	31	32	33	34	35	35	36	37	38	38	39	40	41	42	42	43	44	45	45	46	47
24	24	25	26	26	27	28	29	29	30	31	32	33	34	35	36	36	37	38	39	40	41	42	43	43	44	45	45	46	47	48
1° 25'	24	25	25	26	27	28	28	29	30	31	31	32	33	34	34	35	36	37	38	38	39	40	41	41	42	43	44	44	45	46
26	23	24	25	26	26	27	28	29	30	30	31	32	33	33	34	35	36	36	37	38	39	39	40	41	42	42	43	44	45	45
27	23	24	25	25	26	27	28	28	29	30	31	31	32	33	34	34	35	36	37	37	38	39	40	40	41	42	43	43	44	45
28	23	24	24	25	26	27	27	28	29	30	30	31	32	33	33	34	35	36	36	37	38	38	39	40	41	41	42	43	44	44
29	23	23	24	25	26	26	27	28	29	29	30	31	31	32	33	34	34	35	36	37	37	38	39	39	40	41	42	42	43	44
1° 30'	22	23	24	25	25	26	27	28	28	29	30	30	31	32	33	33	34	35	35	36	37	37	38	38	39	40	41	41	42	43

ARGUMENT.—ANGLE IN DEGREES AND MINUTES, AND DISTANCES IN HUNDRETHS OF A MILE FOR DIFFERENCES OF ELEVATION IN FEET.

° /	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
1° 01'	.65	.66	.67	.68	.69	.70	.72	.73	.74	.75	.76	.77	.78	.79	.80	.81	.82	.83	.84	.85	.86	.88	.89	.90	.91	.92	.93	.94	.95	.96
02	.64	.65	.66	.67	.68	.69	.70	.71	.72	.74	.75	.76	.77	.78	.79	.80	.81	.82	.83	.84	.85	.86	.87	.88	.89	.90	.91	.92	.93	.95
03	.63	.64	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.79	.80	.81	.82	.83	.84	.85	.86	.87	.88	.89	.90	.91	.92	.93
04	.62	.63	.64	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.77	.78	.79	.80	.81	.82	.83	.84	.85	.86	.87	.88	.90	.91	.92
1° 05'	.61	.62	.63	.64	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.77	.78	.79	.80	.81	.82	.83	.84	.85	.86	.87	.88	.89	.90
06	.60	.61	.62	.63	.64	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.77	.78	.79	.80	.81	.82	.83	.84	.85	.86	.87	.88	.89
07	.59	.60	.61	.62	.63	.64	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.77	.78	.79	.80	.81	.82	.83	.84	.85	.86	.87	.88
08	.58	.59	.60	.61	.62	.63	.64	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.77	.78	.79	.80	.81	.82	.83	.84	.85	.86	.87
09	.58	.58	.59	.60	.61	.62	.63	.64	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.75	.76	.77	.78	.79	.80	.81	.82	.83	.84	.85
1° 10'	.57	.58	.59	.60	.60	.61	.62	.63	.64	.65	.66	.67	.68	.69	.70	.71	.72	.73	.73	.74	.75	.76	.77	.78	.79	.80	.81	.82	.83	.84
11	.56	.57	.58	.59	.60	.61	.61	.62	.63	.64	.65	.66	.67	.68	.69	.70	.71	.72	.72	.73	.74	.75	.76	.77	.78	.79	.80	.81	.82	.83
12	.55	.56	.57	.58	.59	.60	.61	.61	.62	.63	.64	.65	.66	.67	.68	.69	.70	.71	.71	.72	.73	.74	.75	.76	.77	.78	.79	.80	.80	.81
13	.54	.55	.56	.57	.58	.59	.60	.61	.62	.62	.63	.64	.65	.66	.67	.68	.69	.70	.70	.71	.72	.73	.74	.75	.76	.77	.78	.78	.79	.80
14	.54	.55	.55	.56	.57	.58	.59	.60	.61	.62	.62	.63	.64	.65	.66	.67	.68	.69	.69	.70	.71	.72	.73	.74	.75	.76	.77	.77	.78	.79
1° 15'	.53	.54	.55	.56	.56	.57	.58	.59	.60	.61	.62	.62	.63	.64	.65	.66	.67	.68	.69	.69	.70	.71	.72	.73	.74	.75	.76	.76	.77	.78
16	.52	.53	.54	.55	.56	.57	.57	.58	.59	.60	.61	.62	.63	.63	.64	.65	.66	.67	.68	.69	.69	.70	.71	.72	.73	.74	.75	.75	.76	.77
17	.52	.53	.53	.54	.55	.56	.57	.57	.58	.59	.60	.61	.62	.63	.63	.64	.65	.66	.67	.68	.68	.69	.70	.71	.72	.73	.74	.74	.75	.76
18	.51	.52	.53	.53	.54	.55	.56	.57	.58	.58	.59	.60	.61	.62	.63	.63	.64	.65	.66	.67	.68	.68	.69	.70	.71	.72	.73	.73	.74	.75
19	.50	.51	.52	.53	.54	.54	.55	.56	.57	.58	.59	.59	.60	.61	.62	.63	.64	.65	.66	.67	.68	.68	.69	.70	.71	.72	.73	.73	.74	.75
1° 20'	.50	.50	.51	.52	.53	.54	.55	.55	.56	.57	.58	.59	.59	.60	.61	.62	.63	.63	.64	.65	.66	.67	.68	.68	.69	.70	.71	.72	.72	.73
21	.49	.50	.51	.51	.52	.53	.54	.55	.55	.56	.57	.58	.59	.59	.60	.61	.62	.63	.63	.64	.65	.66	.67	.68	.68	.69	.70	.71	.72	.72
22	.48	.49	.50	.51	.52	.52	.53	.54	.55	.56	.56	.57	.58	.59	.60	.60	.61	.62	.63	.64	.64	.65	.66	.67	.67	.68	.69	.70	.71	.71
23	.48	.49	.49	.50	.51	.52	.53	.53	.54	.55	.56	.56	.57	.58	.59	.60	.60	.61	.62	.63	.64	.64	.65	.66	.67	.67	.68	.69	.70	.71
24	.47	.48	.49	.50	.50	.51	.52	.53	.53	.54	.55	.56	.57	.57	.58	.59	.60	.60	.61	.62	.63	.64	.64	.65	.66	.67	.67	.68	.69	.70
1° 25'	.47	.47	.48	.49	.50	.51	.51	.52	.53	.54	.54	.55	.56	.57	.57	.58	.59	.60	.60	.61	.62	.63	.64	.64	.65	.66	.67	.67	.68	.69
26	.46	.47	.48	.48	.49	.50	.51	.51	.52	.53	.54	.54	.55	.56	.57	.58	.58	.59	.60	.61	.61	.62	.63	.64	.64	.65	.66	.67	.67	.68
27	.46	.46	.47	.48	.49	.49	.50	.51	.52	.52	.53	.54	.55	.55	.56	.57	.58	.58	.59	.60	.61	.61	.62	.63	.64	.64	.65	.66	.67	.67
28	.45	.46	.47	.47	.48	.49	.50	.50	.51	.52	.53	.53	.54	.55	.55	.56	.57	.58	.58	.59	.60	.61	.61	.62	.63	.64	.64	.65	.66	.67
29	.45	.45	.46	.47	.48	.48	.49	.50	.50	.51	.52	.53	.53	.54	.55	.56	.56	.57	.58	.59	.59	.60	.61	.61	.62	.63	.64	.64	.65	.66
1° 30'	.44	.45	.45	.46	.47	.48	.48	.49	.50	.51	.51	.52	.53	.54	.54	.55	.56	.56	.57	.58	.59	.59	.60	.61	.62	.62	.63	.64	.64	.65

ARGUMENT.—ANGLE IN DEGREES AND MINUTES, AND DISTANCES IN HUNDREDS OF A MILE FOR DIFFERENCES OF ELEVATION IN FEET.

° /	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
1° 01'	.97	.98	.99	I. 0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
02	.96	.97	.98	.99	I. 0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
03	.94	.95	.96	.97	.98	.99	I. 0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
04	.93	.94	.95	.96	.97	.98	.99	I. 0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1° 05'	.91	.92	.93	.94	.95	.96	.97	.98	.99	I. 0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
06	.90	.91	.92	.93	.94	.95	.96	.97	.98	.99	I. 0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
07	.88	.89	.90	.91	.92	.93	.94	.95	.96	.97	.98	.99	I. 0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
08	.87	.88	.89	.90	.91	.92	.93	.94	.95	.96	.97	.98	.99	I. 0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
09	.86	.87	.88	.89	.90	.91	.92	.93	.94	.95	.96	.97	.98	.99	I. 0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1° 10'	.85	.86	.86	.87	.88	.89	.90	.91	.92	.93	.94	.95	.96	.97	.98	.99	I. 0	---	---	---	---	---	---	---	---	---	---	---	---	---
11	.83	.84	.85	.86	.87	.88	.89	.90	.91	.92	.93	.94	.95	.96	.97	.98	.99	I. 0	---	---	---	---	---	---	---	---	---	---	---	---
12	.82	.83	.84	.85	.86	.87	.88	.89	.90	.91	.92	.93	.94	.95	.96	.97	.98	.99	I. 0	---	---	---	---	---	---	---	---	---	---	---
13	.81	.82	.83	.84	.85	.86	.87	.88	.89	.90	.91	.92	.93	.94	.95	.96	.97	.98	.99	I. 0	---	---	---	---	---	---	---	---	---	---
14	.80	.81	.82	.83	.84	.85	.86	.87	.88	.89	.90	.91	.92	.93	.94	.95	.96	.97	.98	.99	I. 0	---	---	---	---	---	---	---	---	---
1° 15'	.79	.80	.81	.82	.83	.84	.85	.86	.87	.88	.88	.89	.90	.91	.92	.93	.94	.95	.95	.96	.97	.98	.99	I. 0	---	---	---	---	---	---
16	.78	.79	.80	.81	.82	.83	.84	.85	.86	.87	.87	.88	.89	.90	.91	.92	.93	.93	.94	.95	.96	.97	.98	.98	.99	I. 0	---	---	---	---
17	.77	.78	.79	.79	.80	.81	.82	.83	.84	.85	.85	.86	.87	.88	.89	.90	.90	.91	.92	.93	.94	.95	.96	.96	.97	.98	.99	I. 0	---	---
18	.76	.77	.78	.78	.79	.80	.81	.82	.83	.83	.84	.85	.86	.87	.88	.88	.89	.90	.91	.92	.93	.93	.94	.95	.96	.97	.98	.99	I. 0	---
19	.75	.76	.77	.77	.78	.79	.80	.81	.82	.83	.84	.85	.86	.87	.88	.89	.90	.91	.92	.93	.94	.95	.96	.96	.97	.98	.99	I. 0	---	---
1° 20'	.74	.75	.76	.76	.77	.78	.79	.80	.81	.81	.82	.83	.84	.85	.85	.86	.87	.88	.89	.90	.91	.92	.93	.94	.94	.95	.96	.97	.98	.99
21	.73	.74	.75	.76	.76	.77	.78	.79	.80	.80	.81	.82	.83	.84	.85	.86	.87	.88	.88	.89	.90	.91	.92	.92	.93	.94	.95	.96	.96	.96
22	.72	.73	.74	.75	.75	.76	.77	.78	.79	.79	.80	.81	.82	.83	.83	.84	.85	.86	.87	.87	.88	.89	.90	.91	.91	.92	.93	.94	.94	.95
23	.71	.72	.73	.74	.75	.75	.76	.77	.78	.78	.79	.80	.81	.82	.82	.83	.84	.85	.85	.86	.87	.88	.89	.89	.90	.91	.92	.93	.93	.94
24	.71	.71	.72	.73	.74	.74	.75	.76	.77	.78	.78	.79	.80	.81	.81	.82	.83	.84	.84	.85	.86	.87	.88	.88	.89	.90	.91	.91	.92	.93
1° 25'	.70	.70	.71	.72	.73	.74	.74	.75	.76	.77	.77	.78	.79	.80	.80	.81	.82	.83	.83	.84	.85	.86	.87	.87	.88	.89	.90	.90	.91	.92
26	.69	.70	.70	.71	.72	.73	.73	.74	.75	.76	.76	.77	.78	.79	.80	.80	.81	.82	.83	.83	.84	.85	.86	.86	.87	.88	.89	.89	.90	.91
27	.68	.69	.70	.70	.71	.72	.73	.73	.74	.75	.76	.77	.78	.79	.79	.80	.81	.82	.82	.83	.84	.85	.85	.86	.87	.88	.88	.89	.90	.90
28	.67	.68	.69	.70	.70	.71	.72	.72	.73	.74	.75	.75	.76	.77	.78	.78	.79	.80	.81	.81	.82	.83	.84	.84	.85	.86	.87	.87	.88	.89
29	.67	.67	.68	.69	.69	.70	.71	.72	.72	.73	.74	.75	.75	.76	.77	.78	.78	.79	.80	.80	.81	.82	.83	.83	.84	.85	.86	.86	.87	.88
1° 30'	.66	.66	.67	.68	.69	.70	.70	.71	.72	.72	.73	.74	.75	.75	.76	.77	.77	.78	.79	.80	.80	.81	.82	.82	.83	.84	.85	.85	.86	.87

° /	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138
1° 01'																		
02																		
03																		
04																		
1° 05'																		
06																		
07																		
08																		
09																		
1° 10'																		
11																		
12																		
13																		
14																		
1° 15'																		
16																		
17																		
18																		
19	I. o																	
1° 20'	.98	.99	I. o									I. o						
21	.97	.98	.99	I. o														
22	.96	.97	.98	.98	.99	I. o												
23	.95	.96	.96	.97	.98	.99	I. o											
24	.94	.95	.95	.96	.97	.98	.98	.99	I. o									
1° 25'	.93	.93	.94	.95	.96	.96	.97	.98	.99	I. o								
26	.92	.92	.93	.94	.95	.95	.96	.97	.98	.98	.99	I. o						
27	.91	.91	.92	.93	.94	.94	.95	.96	.97	.97	.98	.99	I. o					
28	.90	.90	.91	.92	.92	.93	.94	.95	.95	.96	.97	.98	.98	.99	I. o			
29	.88	.89	.90	.91	.91	.92	.93	.94	.94	.95	.96	.97	.97	.98	.99	.99	I. o	
1° 30'	.87	.88	.89	.90	.90	.91	.92	.93	.93	.94	.95	.95	.96	.97	.98	.98	.99	I. o

ARGUMENT.—ANGLE IN DEGREES AND MINUTES, AND DISTANCES IN HUNDRETHS OF A MILE FOR DIFFERENCES OF ELEVATION IN FEET.

° /	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1° 31'	.01	.01	.02	.03	.04	.04	.05	.06	.06	.07	.08	.09	.09	.10	.11	.11	.12	.13	.14	.14	.15	.16	.16	.17	.18	.19	.19	.20	.21	.22
32	.01	.01	.02	.03	.04	.04	.05	.06	.06	.07	.08	.09	.09	.10	.11	.11	.12	.13	.13	.14	.15	.16	.16	.17	.18	.18	.19	.20	.21	.21
33	.01	.01	.02	.03	.04	.04	.05	.06	.06	.07	.08	.08	.09	.10	.11	.11	.12	.13	.13	.14	.15	.15	.16	.17	.18	.18	.19	.20	.20	.21
34	.01	.01	.02	.03	.04	.04	.05	.06	.06	.07	.08	.08	.09	.10	.10	.11	.12	.13	.13	.14	.15	.15	.16	.17	.17	.18	.19	.19	.20	.21
1° 35'	.01	.01	.02	.03	.03	.04	.05	.06	.06	.07	.08	.08	.09	.10	.10	.11	.12	.12	.13	.14	.14	.15	.16	.17	.17	.18	.19	.19	.20	.21
36	.01	.01	.02	.03	.03	.04	.05	.05	.06	.07	.07	.08	.09	.10	.10	.11	.12	.12	.13	.14	.14	.15	.16	.16	.17	.18	.19	.20	.20	.21
37	.01	.01	.02	.03	.03	.04	.05	.05	.06	.07	.07	.08	.09	.09	.10	.11	.11	.12	.13	.13	.14	.15	.15	.16	.17	.17	.18	.19	.20	.20
38	.01	.01	.02	.03	.03	.04	.05	.05	.06	.07	.07	.08	.09	.09	.10	.11	.11	.12	.13	.13	.14	.15	.15	.16	.17	.17	.18	.19	.19	.20
39	.01	.01	.02	.03	.03	.04	.05	.05	.06	.07	.07	.08	.09	.09	.10	.11	.11	.12	.13	.13	.14	.15	.15	.16	.16	.17	.18	.18	.19	.20
1° 40'	.01	.01	.02	.03	.03	.04	.05	.05	.06	.06	.07	.08	.09	.09	.10	.10	.11	.12	.12	.13	.14	.14	.15	.16	.16	.17	.18	.18	.19	.20
41	.01	.01	.02	.03	.03	.04	.05	.05	.06	.06	.07	.08	.08	.09	.10	.10	.11	.12	.12	.13	.14	.14	.15	.16	.16	.17	.17	.18	.19	.19
42	.01	.01	.02	.03	.03	.04	.05	.05	.06	.06	.07	.08	.08	.09	.10	.10	.11	.12	.12	.13	.13	.14	.15	.15	.16	.17	.17	.18	.19	.19
43	.01	.01	.02	.03	.03	.04	.04	.05	.06	.06	.07	.08	.08	.09	.10	.10	.11	.12	.13	.13	.14	.15	.15	.16	.16	.17	.18	.18	.19	.19
44	.01	.01	.02	.03	.03	.04	.04	.05	.06	.06	.07	.08	.08	.09	.09	.10	.11	.11	.12	.13	.13	.14	.14	.15	.16	.16	.17	.17	.18	.19
1° 45'	.01	.01	.02	.03	.03	.04	.04	.05	.06	.06	.07	.07	.08	.09	.09	.10	.11	.11	.12	.12	.13	.14	.14	.15	.16	.16	.17	.17	.18	.19
46	.01	.01	.02	.03	.03	.04	.04	.05	.06	.06	.07	.07	.08	.09	.09	.10	.10	.11	.12	.12	.13	.14	.14	.15	.15	.16	.17	.17	.18	.18
47	.01	.01	.02	.02	.03	.04	.04	.05	.06	.06	.07	.07	.08	.09	.09	.10	.10	.11	.12	.12	.13	.13	.14	.15	.15	.16	.16	.17	.18	.18
48	.01	.01	.02	.02	.03	.04	.04	.05	.05	.06	.07	.07	.08	.08	.09	.10	.10	.11	.11	.12	.13	.13	.14	.14	.15	.16	.16	.17	.18	.18
49	.01	.01	.02	.02	.03	.04	.04	.05	.05	.06	.07	.07	.08	.08	.09	.10	.10	.11	.11	.12	.13	.13	.14	.14	.15	.16	.16	.17	.17	.18
1° 50'	.01	.01	.02	.02	.03	.04	.04	.05	.05	.06	.07	.07	.08	.08	.09	.10	.10	.11	.11	.12	.12	.13	.14	.14	.15	.15	.16	.16	.17	.18
51	.01	.01	.02	.02	.03	.04	.04	.05	.05	.06	.06	.07	.08	.08	.09	.09	.10	.11	.11	.12	.12	.13	.14	.14	.15	.15	.16	.16	.17	.18
52	.01	.01	.02	.02	.03	.04	.04	.05	.05	.06	.06	.07	.08	.08	.09	.09	.10	.11	.11	.12	.12	.13	.13	.14	.14	.15	.16	.16	.17	.17
53	.01	.01	.02	.02	.03	.04	.04	.05	.05	.06	.06	.07	.08	.08	.09	.09	.10	.11	.11	.12	.12	.13	.13	.14	.14	.15	.16	.16	.17	.17
54	.01	.01	.02	.02	.03	.03	.04	.05	.05	.06	.06	.07	.07	.08	.09	.09	.10	.10	.11	.11	.12	.13	.13	.14	.14	.15	.15	.16	.17	.17
1° 55'	.01	.01	.02	.02	.03	.03	.04	.05	.05	.06	.06	.07	.07	.08	.09	.09	.10	.10	.11	.11	.12	.13	.13	.14	.14	.15	.15	.16	.16	.17
56	.01	.01	.02	.02	.03	.03	.04	.05	.05	.06	.06	.07	.07	.08	.08	.09	.10	.10	.11	.11	.12	.12	.13	.14	.14	.15	.15	.16	.16	.17
57	.01	.01	.02	.02	.03	.03	.04	.04	.05	.06	.06	.07	.07	.08	.08	.09	.10	.10	.11	.11	.12	.12	.13	.13	.14	.15	.15	.16	.16	.17
58	.01	.01	.02	.02	.03	.03	.04	.04	.05	.06	.06	.07	.07	.08	.08	.09	.09	.10	.11	.11	.12	.12	.13	.13	.14	.14	.15	.15	.16	.16
59	.01	.01	.02	.02	.03	.03	.04	.04	.05	.06	.06	.07	.07	.08	.08	.09	.09	.10	.10	.11	.12	.12	.13	.13	.14	.14	.15	.15	.16	.16
2° 00'	.01	.01	.02	.02	.03	.03	.04	.04	.05	.05	.06	.07	.07	.08	.08	.09	.09	.10	.10	.11	.11	.12	.13	.13	.14	.14	.15	.15	.16	.16

ARGUMENT.—ANGLE IN DEGREES AND MINUTES, AND DISTANCES IN HUNDRETHS OF A MILE FOR DIFFERENCES OF ELEVATION IN FEET.

° /	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1° 31'	.22	.23	.24	.24	.25	.26	.27	.27	.28	.29	.29	.30	.31	.32	.32	.33	.34	.34	.35	.36	.36	.37	.38	.39	.39	.40	.41	.42	.42	.43
32	.22	.23	.23	.24	.25	.26	.26	.27	.28	.28	.29	.30	.30	.31	.32	.33	.33	.34	.35	.35	.36	.37	.37	.38	.39	.40	.40	.41	.42	.42
33	.22	.22	.23	.24	.25	.25	.26	.27	.27	.28	.29	.29	.30	.31	.31	.32	.33	.34	.34	.35	.36	.36	.37	.38	.38	.39	.40	.41	.41	.42
34	.22	.22	.23	.24	.24	.25	.26	.26	.27	.28	.28	.29	.30	.30	.31	.32	.32	.33	.34	.35	.35	.36	.37	.37	.38	.39	.40	.40	.41	.41
1° 35'	.21	.22	.23	.23	.24	.25	.25	.26	.27	.27	.28	.29	.30	.30	.31	.32	.32	.33	.34	.34	.35	.36	.36	.37	.38	.38	.39	.40	.40	.41
36	.21	.22	.22	.23	.24	.24	.25	.26	.26	.27	.28	.28	.29	.30	.31	.31	.32	.32	.33	.34	.35	.35	.36	.37	.37	.38	.39	.39	.40	.41
37	.21	.22	.22	.23	.24	.24	.25	.26	.26	.27	.28	.28	.29	.30	.30	.31	.31	.32	.33	.34	.34	.35	.36	.36	.37	.38	.39	.39	.40	.40
38	.21	.21	.22	.23	.23	.24	.25	.25	.26	.27	.27	.28	.29	.29	.30	.30	.31	.32	.32	.33	.34	.35	.35	.36	.37	.37	.38	.38	.39	.40
39	.20	.21	.22	.22	.23	.24	.24	.25	.26	.26	.27	.28	.28	.29	.30	.30	.31	.32	.32	.33	.34	.34	.35	.36	.36	.37	.38	.38	.39	.39
1° 40'	.20	.21	.22	.22	.23	.23	.24	.25	.25	.26	.27	.27	.28	.29	.29	.30	.31	.31	.32	.33	.33	.34	.35	.35	.36	.36	.37	.38	.38	.39
41	.20	.21	.21	.22	.23	.23	.24	.25	.25	.26	.26	.27	.28	.28	.29	.30	.30	.31	.32	.32	.33	.34	.34	.35	.35	.36	.37	.37	.38	.39
42	.20	.20	.21	.22	.22	.23	.24	.24	.25	.26	.26	.27	.27	.28	.29	.29	.30	.31	.31	.32	.33	.33	.34	.34	.35	.36	.37	.37	.38	.38
43	.20	.20	.21	.22	.22	.23	.23	.24	.25	.25	.26	.27	.27	.28	.28	.29	.30	.30	.31	.32	.32	.33	.34	.34	.35	.35	.36	.37	.37	.38
44	.19	.20	.21	.21	.22	.23	.23	.24	.24	.25	.26	.26	.27	.27	.28	.29	.29	.30	.31	.31	.32	.33	.33	.34	.34	.35	.36	.37	.37	.38
1° 45'	.19	.20	.20	.21	.22	.22	.23	.24	.24	.25	.25	.26	.27	.27	.28	.28	.29	.30	.30	.31	.32	.32	.33	.34	.34	.35	.36	.36	.37	.37
46	.19	.20	.20	.21	.22	.22	.23	.23	.24	.25	.25	.26	.26	.27	.28	.28	.29	.30	.30	.31	.31	.32	.33	.33	.34	.34	.35	.36	.36	.37
47	.19	.20	.20	.21	.21	.22	.23	.23	.24	.24	.25	.26	.26	.27	.27	.28	.29	.29	.30	.30	.31	.32	.32	.33	.33	.34	.35	.35	.36	.37
48	.19	.19	.20	.21	.21	.22	.22	.23	.24	.24	.25	.25	.26	.27	.27	.28	.28	.29	.29	.30	.31	.31	.32	.33	.33	.34	.35	.35	.36	.36
49	.19	.19	.20	.20	.21	.22	.22	.23	.23	.24	.25	.25	.26	.26	.27	.27	.28	.28	.29	.30	.30	.31	.32	.32	.33	.33	.34	.35	.35	.36
1° 50'	.18	.19	.20	.20	.21	.21	.22	.23	.23	.24	.24	.25	.25	.26	.27	.27	.28	.28	.29	.30	.30	.31	.32	.32	.33	.33	.34	.35	.35	.36
51	.18	.19	.19	.20	.21	.21	.22	.22	.23	.23	.24	.25	.25	.26	.26	.27	.27	.28	.29	.29	.30	.31	.31	.32	.32	.33	.34	.34	.35	.35
52	.18	.19	.19	.20	.20	.21	.22	.22	.23	.23	.24	.24	.25	.26	.26	.27	.27	.28	.28	.29	.30	.30	.31	.31	.32	.32	.33	.34	.34	.35
53	.18	.19	.19	.20	.20	.21	.21	.22	.23	.23	.24	.24	.25	.25	.26	.26	.27	.28	.28	.29	.29	.30	.31	.31	.32	.32	.33	.33	.34	.35
54	.18	.18	.19	.19	.20	.21	.21	.22	.22	.23	.23	.24	.25	.25	.26	.26	.27	.27	.28	.29	.29	.30	.30	.31	.31	.32	.33	.33	.34	.34
1° 55'	.18	.18	.19	.19	.20	.20	.21	.22	.22	.23	.23	.24	.24	.25	.25	.26	.27	.27	.28	.28	.29	.30	.30	.31	.31	.32	.33	.33	.33	.34
56	.17	.18	.19	.19	.20	.20	.21	.21	.22	.22	.23	.24	.24	.25	.25	.26	.26	.27	.27	.28	.29	.29	.30	.30	.31	.31	.32	.32	.33	.34
57	.17	.18	.18	.19	.20	.20	.21	.21	.22	.22	.23	.23	.24	.24	.25	.26	.26	.27	.27	.28	.28	.29	.29	.30	.31	.31	.32	.32	.33	.33
58	.17	.18	.18	.19	.19	.20	.20	.21	.22	.22	.23	.23	.24	.24	.25	.25	.26	.26	.27	.28	.28	.29	.29	.30	.31	.31	.32	.32	.33	.33
59	.17	.18	.18	.19	.19	.20	.20	.21	.21	.22	.22	.23	.24	.24	.25	.25	.26	.26	.27	.27	.28	.28	.29	.30	.30	.31	.31	.32	.32	.33
2° 00'	.17	.17	.18	.18	.19	.20	.20	.21	.21	.22	.22	.23	.23	.24	.24	.25	.26	.26	.27	.27	.28	.28	.29	.29	.30	.30	.31	.31	.32	.33

ARGUMENT.—ANGLE IN DEGREES AND MINUTES, AND DISTANCES IN HUNDREDS OF A MILE FOR DIFFERENCES OF ELEVATION IN FEET.

° /	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
1° 31'	.44	.44	.45	.46	.46	.47	.48	.49	.49	.50	.51	.51	.52	.53	.54	.54	.55	.56	.56	.57	.59	.59	.59	.60	.61	.62	.62	.63	.64	.64
32	.43	.44	.45	.45	.46	.47	.47	.48	.49	.49	.50	.51	.52	.52	.53	.54	.54	.55	.56	.57	.59	.58	.59	.59	.60	.61	.61	.62	.63	.64
33	.43	.43	.44	.45	.45	.46	.47	.48	.48	.49	.50	.50	.51	.52	.52	.53	.54	.55	.55	.56	.57	.57	.58	.59	.59	.60	.61	.62	.62	.63
34	.42	.43	.44	.44	.45	.46	.46	.47	.48	.48	.49	.50	.51	.51	.52	.53	.53	.54	.55	.55	.56	.57	.57	.58	.59	.60	.60	.61	.62	.62
1° 35'	.42	.42	.43	.44	.44	.45	.46	.47	.47	.48	.49	.49	.50	.51	.51	.52	.53	.53	.54	.55	.56	.56	.57	.58	.58	.59	.60	.60	.61	.62
36	.41	.42	.43	.43	.44	.45	.45	.46	.47	.47	.48	.49	.50	.50	.51	.52	.52	.53	.54	.55	.56	.56	.57	.58	.58	.59	.60	.60	.61	.61
37	.41	.42	.42	.43	.44	.44	.45	.46	.46	.47	.48	.48	.49	.50	.50	.51	.52	.52	.53	.54	.54	.55	.56	.56	.57	.58	.58	.59	.60	.60
38	.41	.41	.42	.43	.43	.44	.45	.45	.46	.47	.47	.48	.49	.49	.50	.51	.51	.52	.53	.53	.54	.54	.55	.56	.56	.57	.58	.58	.59	.60
39	.40	.41	.41	.42	.43	.43	.44	.45	.45	.46	.47	.47	.48	.49	.49	.50	.51	.51	.52	.53	.53	.54	.54	.55	.56	.57	.57	.58	.59	.60
1° 40'	.40	.40	.41	.42	.42	.43	.44	.44	.45	.46	.46	.47	.48	.48	.49	.50	.50	.51	.51	.52	.53	.53	.54	.55	.55	.56	.57	.57	.58	.59
41	.39	.40	.41	.41	.42	.43	.43	.44	.44	.45	.46	.46	.47	.48	.48	.49	.50	.50	.51	.52	.52	.53	.54	.54	.55	.55	.56	.57	.57	.58
42	.39	.40	.40	.41	.41	.42	.43	.43	.44	.45	.45	.46	.47	.47	.48	.49	.49	.50	.50	.51	.52	.52	.53	.54	.54	.55	.56	.56	.57	.57
43	.39	.39	.40	.40	.41	.42	.42	.43	.44	.44	.45	.46	.46	.47	.47	.49	.49	.49	.50	.51	.51	.52	.53	.53	.54	.54	.55	.56	.56	.57
44	.38	.39	.39	.40	.41	.41	.42	.43	.43	.44	.44	.45	.46	.46	.47	.48	.48	.49	.49	.50	.51	.51	.52	.53	.53	.54	.54	.55	.56	.56
1° 45'	.38	.38	.39	.40	.40	.41	.42	.42	.43	.43	.44	.45	.45	.46	.46	.48	.48	.48	.49	.50	.50	.51	.51	.52	.52	.53	.53	.54	.55	.56
46	.37	.38	.39	.39	.40	.41	.41	.42	.42	.43	.44	.44	.45	.45	.46	.48	.47	.48	.49	.49	.50	.50	.51	.52	.52	.53	.53	.54	.55	.55
47	.37	.38	.38	.39	.39	.40	.41	.41	.42	.43	.43	.44	.44	.45	.46	.47	.47	.47	.48	.49	.49	.50	.50	.51	.52	.52	.53	.54	.54	.55
48	.37	.37	.38	.39	.39	.40	.40	.41	.42	.42	.43	.43	.44	.45	.45	.47	.46	.47	.48	.48	.49	.49	.50	.51	.51	.52	.52	.53	.54	.54
49	.36	.37	.38	.38	.39	.39	.40	.41	.41	.42	.42	.43	.44	.44	.45	.46	.46	.47	.47	.48	.48	.49	.50	.50	.51	.51	.52	.53	.53	.54
1° 50'	.36	.37	.37	.38	.38	.39	.40	.40	.41	.41	.42	.43	.43	.44	.44	.46	.45	.46	.47	.47	.48	.48	.49	.49	.50	.50	.51	.51	.52	.53
51	.36	.36	.37	.38	.38	.39	.39	.40	.40	.41	.42	.42	.43	.43	.44	.45	.45	.46	.46	.47	.48	.48	.49	.49	.50	.50	.51	.52	.52	.53
52	.35	.36	.37	.37	.38	.39	.40	.40	.41	.41	.42	.42	.43	.44	.45	.45	.45	.46	.47	.47	.48	.48	.49	.49	.50	.51	.51	.52	.52	.53
53	.35	.36	.36	.37	.37	.38	.39	.39	.40	.40	.41	.41	.42	.43	.43	.44	.44	.45	.45	.46	.47	.47	.48	.48	.49	.50	.50	.51	.51	.52
54	.35	.35	.36	.37	.37	.38	.38	.39	.39	.40	.41	.41	.42	.42	.43	.44	.44	.45	.45	.46	.46	.47	.47	.48	.49	.49	.50	.50	.51	.51
1° 55'	.34	.35	.36	.36	.37	.37	.38	.39	.39	.40	.40	.41	.41	.42	.43	.44	.44	.44	.45	.45	.46	.46	.47	.48	.48	.49	.49	.50	.50	.51
56	.34	.35	.35	.36	.36	.37	.38	.38	.39	.39	.40	.40	.41	.42	.42	.43	.43	.44	.44	.45	.45	.46	.47	.47	.48	.48	.49	.49	.50	.51
57	.34	.35	.35	.36	.36	.37	.37	.38	.38	.39	.40	.40	.41	.41	.42	.43	.43	.43	.44	.44	.45	.46	.46	.47	.47	.48	.48	.49	.50	.50
58	.34	.34	.35	.35	.36	.36	.37	.38	.38	.39	.39	.40	.40	.41	.41	.42	.42	.43	.44	.44	.45	.46	.46	.47	.47	.48	.49	.49	.50	.50
59	.33	.34	.34	.35	.35	.36	.37	.37	.38	.38	.39	.39	.40	.40	.41	.42	.42	.43	.43	.44	.44	.45	.45	.46	.46	.47	.48	.48	.49	.49
2° 00'	.33	.34	.34	.35	.35	.36	.36	.37	.37	.38	.39	.39	.40	.40	.41	.42	.42	.42	.43	.43	.44	.44	.45	.46	.46	.47	.47	.48	.48	.49

ARGUMENT.—ANGLE IN DEGREES AND MINUTES, AND DISTANCES IN HUNDREDS OF A MILE FOR DIFFERENCES OF ELEVATION IN FEET.

° /	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
1° 31'	.65	.66	.67	.67	.68	.69	.69	.70	.71	.72	.72	.73	.74	.74	.75	.76	.77	.77	.78	.79	.79	.80	.81	.82	.82	.83	.84	.84	.85	.86
32	.64	.65	.66	.67	.67	.68	.69	.69	.70	.71	.71	.72	.73	.74	.74	.75	.76	.76	.77	.78	.78	.79	.80	.81	.81	.82	.83	.83	.84	.85
33	.64	.64	.65	.66	.66	.67	.68	.68	.69	.70	.71	.71	.72	.73	.73	.74	.76	.76	.77	.78	.78	.79	.80	.80	.81	.82	.83	.83	.84	.85
34	.63	.64	.64	.65	.66	.66	.67	.68	.68	.69	.70	.71	.71	.72	.73	.73	.74	.75	.75	.76	.77	.78	.78	.79	.80	.80	.81	.82	.82	.84
1° 35'	.62	.63	.64	.64	.65	.66	.66	.67	.68	.69	.69	.70	.71	.71	.72	.73	.73	.74	.75	.75	.76	.77	.77	.78	.79	.80	.80	.81	.82	.83
36	.62	.62	.63	.64	.64	.65	.66	.67	.67	.68	.68	.69	.70	.71	.71	.72	.73	.73	.74	.75	.75	.76	.77	.77	.78	.79	.79	.80	.81	.82
37	.61	.62	.62	.63	.64	.64	.65	.66	.66	.67	.68	.68	.69	.70	.71	.71	.72	.73	.73	.74	.75	.75	.76	.77	.77	.78	.79	.79	.80	.81
38	.60	.61	.62	.62	.63	.64	.65	.66	.66	.67	.68	.68	.69	.70	.70	.71	.72	.72	.73	.74	.74	.75	.76	.76	.77	.78	.78	.79	.80	.81
39	.60	.60	.61	.62	.62	.63	.64	.64	.65	.66	.66	.67	.68	.68	.69	.70	.71	.72	.72	.73	.74	.74	.75	.76	.76	.77	.78	.78	.79	.80
1° 40'	.59	.60	.61	.61	.62	.62	.63	.64	.64	.65	.66	.66	.67	.68	.68	.69	.70	.70	.71	.72	.72	.73	.73	.74	.75	.75	.76	.77	.77	.79
41	.59	.59	.60	.61	.61	.62	.63	.63	.64	.64	.65	.66	.66	.67	.68	.68	.69	.70	.70	.71	.71	.72	.73	.73	.74	.75	.75	.76	.77	.78
42	.58	.59	.59	.60	.61	.61	.62	.63	.63	.64	.64	.65	.66	.66	.67	.68	.68	.69	.70	.70	.71	.72	.72	.73	.73	.74	.75	.75	.76	.77
43	.58	.58	.59	.59	.60	.61	.61	.62	.63	.63	.64	.65	.65	.66	.66	.67	.68	.68	.69	.70	.70	.71	.71	.72	.73	.73	.74	.75	.75	.77
44	.57	.58	.58	.59	.60	.60	.61	.61	.62	.63	.63	.64	.64	.65	.66	.66	.67	.68	.68	.69	.69	.70	.71	.71	.72	.73	.73	.74	.74	.75
1° 45'	.56	.57	.58	.58	.59	.59	.60	.61	.61	.62	.63	.63	.64	.64	.65	.66	.66	.67	.68	.68	.69	.69	.70	.71	.71	.72	.72	.73	.74	.75
46	.56	.57	.57	.58	.58	.59	.60	.60	.61	.62	.62	.63	.63	.64	.65	.65	.66	.66	.67	.68	.68	.69	.70	.70	.71	.71	.72	.73	.73	.74
47	.55	.56	.57	.57	.58	.58	.59	.60	.60	.61	.61	.62	.63	.63	.64	.64	.65	.66	.66	.67	.68	.68	.69	.69	.70	.71	.71	.72	.72	.74
48	.55	.55	.56	.57	.57	.58	.58	.59	.60	.60	.61	.61	.62	.63	.63	.64	.64	.65	.66	.66	.67	.67	.68	.69	.69	.70	.70	.71	.72	.73
49	.54	.55	.56	.56	.57	.57	.58	.59	.59	.60	.60	.61	.62	.62	.63	.63	.64	.65	.65	.66	.66	.67	.68	.68	.68	.69	.70	.70	.71	.72
1° 50'	.54	.54	.55	.56	.56	.57	.58	.59	.59	.60	.60	.61	.62	.62	.63	.63	.64	.64	.65	.66	.66	.67	.67	.68	.69	.69	.70	.70	.71	.72
51	.53	.54	.55	.55	.56	.56	.57	.57	.58	.59	.59	.60	.60	.61	.62	.62	.63	.63	.64	.65	.65	.66	.66	.67	.67	.68	.69	.69	.70	.71
52	.53	.53	.54	.55	.55	.56	.56	.57	.58	.59	.59	.60	.60	.61	.62	.62	.63	.63	.64	.65	.65	.66	.66	.67	.67	.68	.69	.69	.70	.71
53	.52	.53	.54	.54	.55	.55	.56	.56	.57	.58	.59	.59	.60	.60	.61	.62	.62	.63	.63	.64	.64	.65	.66	.66	.67	.67	.68	.68	.70	.71
54	.52	.52	.53	.54	.54	.55	.55	.56	.56	.57	.58	.58	.59	.59	.60	.60	.61	.62	.62	.63	.63	.64	.64	.65	.66	.66	.67	.67	.68	.69
1° 55'	.52	.52	.53	.53	.54	.54	.55	.55	.56	.57	.57	.58	.58	.59	.59	.60	.61	.61	.62	.62	.63	.63	.64	.65	.65	.66	.66	.67	.67	.69
56	.51	.52	.52	.53	.53	.54	.54	.55	.55	.56	.57	.57	.58	.58	.59	.59	.60	.61	.61	.62	.62	.63	.63	.64	.65	.65	.66	.66	.67	.68
57	.51	.51	.52	.52	.53	.53	.54	.54	.55	.56	.56	.57	.57	.58	.58	.59	.60	.60	.61	.61	.62	.62	.63	.63	.64	.65	.65	.66	.66	.67
58	.50	.51	.51	.52	.52	.53	.53	.54	.54	.55	.56	.56	.57	.57	.58	.58	.59	.60	.60	.61	.61	.62	.62	.63	.64	.65	.65	.66	.66	.67
59	.50	.50	.51	.51	.52	.52	.53	.53	.54	.55	.55	.56	.56	.57	.57	.58	.58	.59	.60	.60	.61	.61	.62	.62	.63	.63	.64	.64	.65	.66
2° 00'	.49	.50	.50	.51	.51	.52	.53	.53	.54	.54	.55	.55	.56	.56	.57	.57	.58	.59	.59	.60	.60	.61	.61	.62	.62	.63	.63	.64	.65	.66

ARGUMENT.—ANGLE IN DEGREES AND MINUTES, AND DISTANCES IN HUNDRETHS OF A MILE FOR DIFFERENCES OF ELEVATION IN FEET.

° /	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	
1° 31'	.87	.87	.88	.89	.89	.90	.91	.92	.93	.93	.94	.94	.95	.96	.97	.97	.98	.99	.99	I. O	---	---	---	---	---	---	---	---	---	---	---
32	.86	.86	.87	.88	.88	.89	.90	.91	.91	.92	.93	.93	.94	.95	.96	.96	.97	.98	.98	.99	I. O	---	---	---	---	---	---	---	---	---	---
33	.85	.85	.86	.87	.87	.88	.89	.90	.90	.91	.92	.92	.93	.94	.95	.95	.96	.97	.97	.98	.99	.99	I. O	---	---	---	---	---	---	---	---
34	.84	.84	.85	.86	.87	.87	.88	.89	.89	.90	.91	.91	.92	.93	.94	.94	.95	.96	.96	.97	.98	.98	.99	I. O	---	---	---	---	---	---	---
1° 35'	.83	.84	.84	.85	.86	.86	.87	.88	.88	.89	.90	.90	.91	.92	.93	.93	.94	.95	.95	.96	.97	.97	.98	.99	.99	I. O	---	---	---	---	---
36	.82	.83	.83	.84	.85	.85	.86	.87	.88	.88	.89	.90	.90	.91	.92	.92	.93	.94	.94	.95	.96	.96	.97	.98	.98	.99	I. O	---	---	---	---
37	.81	.82	.83	.83	.84	.85	.85	.86	.87	.87	.88	.89	.89	.90	.91	.91	.92	.93	.93	.94	.95	.95	.96	.97	.97	.98	.99	.99	I. O	---	---
38	.80	.81	.82	.82	.83	.84	.84	.85	.86	.86	.87	.88	.88	.89	.90	.90	.91	.92	.92	.93	.94	.94	.95	.96	.96	.97	.98	.98	.99	I. O	---
39	.80	.80	.81	.81	.82	.83	.83	.84	.85	.85	.86	.87	.87	.88	.89	.89	.90	.91	.91	.92	.93	.93	.94	.95	.95	.96	.97	.97	.98	.99	I. O
1° 40'	.79	.79	.80	.81	.81	.82	.83	.83	.84	.85	.85	.86	.87	.87	.88	.88	.89	.90	.90	.91	.92	.92	.93	.94	.94	.95	.96	.96	.97	.98	.99
41	.78	.79	.79	.80	.81	.81	.82	.82	.83	.84	.84	.85	.86	.86	.87	.88	.88	.89	.90	.90	.91	.91	.92	.93	.93	.94	.95	.95	.96	.97	.98
42	.77	.78	.79	.79	.80	.80	.81	.82	.82	.83	.84	.84	.85	.86	.86	.87	.87	.88	.89	.89	.90	.91	.91	.92	.93	.93	.94	.94	.95	.96	.97
43	.77	.77	.78	.78	.79	.80	.80	.81	.82	.82	.83	.83	.84	.85	.85	.86	.87	.87	.88	.89	.89	.90	.90	.91	.92	.92	.93	.94	.94	.95	.96
44	.76	.76	.77	.78	.78	.79	.80	.80	.81	.81	.82	.83	.83	.84	.84	.85	.86	.86	.87	.88	.88	.89	.89	.90	.91	.91	.92	.93	.93	.94	.95
1° 45'	.75	.76	.76	.77	.77	.78	.79	.79	.80	.81	.81	.82	.82	.83	.84	.84	.85	.85	.86	.87	.87	.88	.89	.89	.90	.90	.91	.92	.92	.93	.94
46	.74	.75	.76	.76	.77	.78	.78	.79	.79	.80	.81	.81	.82	.82	.83	.84	.84	.85	.86	.86	.87	.87	.88	.89	.89	.90	.90	.91	.92	.92	.93
47	.74	.74	.75	.75	.76	.77	.77	.78	.78	.79	.80	.80	.81	.82	.82	.83	.83	.84	.85	.85	.86	.86	.87	.88	.88	.89	.89	.90	.91	.91	.92
48	.73	.73	.74	.75	.75	.76	.77	.77	.78	.78	.79	.80	.80	.81	.81	.82	.83	.83	.84	.84	.85	.86	.86	.87	.87	.88	.89	.89	.90	.90	.91
49	.72	.73	.73	.74	.75	.75	.76	.76	.77	.78	.78	.79	.79	.80	.81	.81	.82	.82	.83	.84	.84	.85	.85	.86	.87	.87	.88	.88	.89	.90	.91
1° 50'	.72	.72	.73	.73	.74	.75	.75	.76	.76	.77	.77	.78	.79	.79	.80	.80	.81	.82	.82	.83	.83	.84	.85	.85	.86	.86	.87	.88	.88	.89	.90
51	.71	.72	.72	.73	.73	.74	.74	.75	.76	.76	.77	.77	.78	.79	.79	.80	.80	.81	.82	.82	.83	.83	.84	.84	.85	.86	.86	.87	.87	.88	.89
52	.70	.71	.72	.72	.73	.73	.74	.74	.75	.76	.76	.77	.77	.78	.78	.79	.80	.80	.81	.81	.82	.83	.83	.84	.84	.85	.85	.86	.87	.87	.88
53	.70	.70	.71	.71	.72	.73	.73	.74	.74	.75	.75	.76	.77	.77	.78	.78	.79	.79	.80	.81	.81	.82	.82	.83	.83	.84	.85	.85	.86	.86	.87
54	.69	.70	.70	.71	.71	.72	.72	.73	.74	.74	.75	.75	.76	.76	.77	.78	.78	.79	.79	.80	.80	.81	.82	.82	.83	.83	.84	.84	.85	.86	.87
1° 55'	.69	.69	.70	.70	.71	.71	.72	.72	.73	.74	.74	.75	.75	.76	.76	.77	.78	.78	.79	.79	.80	.80	.81	.82	.82	.83	.83	.84	.84	.85	.86
56	.68	.68	.69	.70	.70	.71	.71	.72	.72	.73	.74	.74	.74	.75	.76	.76	.77	.77	.78	.79	.79	.80	.80	.81	.81	.82	.83	.83	.84	.84	.85
57	.67	.68	.68	.69	.70	.70	.71	.71	.72	.72	.73	.73	.74	.74	.75	.76	.76	.77	.77	.78	.78	.79	.80	.80	.81	.81	.82	.82	.83	.83	.84
58	.67	.67	.68	.68	.69	.69	.70	.70	.71	.72	.72	.73	.73	.74	.74	.75	.76	.76	.77	.77	.78	.78	.79	.79	.80	.80	.81	.81	.82	.82	.83
59	.66	.67	.67	.68	.68	.69	.69	.70	.70	.71	.72	.72	.73	.73	.74	.74	.75	.75	.76	.76	.77	.78	.78	.79	.79	.80	.80	.81	.81	.82	.83
2° 00'	.66	.67	.67	.67	.68	.68	.69	.69	.70	.71	.71	.72	.72	.73	.73	.74	.74	.75	.75	.76	.77	.77	.78	.78	.79	.79	.80	.80	.81	.81	.82

° /	181	182	183	184
1° 58	I. O	---	---	---
59	. 99	. 99	I. O	---
2° 00'	. 98	. 99	. 99	I. O

170	171	172	173	174	175	176	177	178	179	180
I. O	---	---	---	---	---	---	---	---	---	---
.99	.99	I. O	---	---	---	---	---	---	---	---
.98	.98	.99	I. O	---	---	---	---	---	---	---
.97	.98	.98	.99	.99	I. O	---	---	---	---	---
.96	.97	.97	.98	.99	.99	I. O	---	---	---	---
.95	.96	.97	.97	.98	.98	.99	.99	I. O	---	---
.95	.95	.96	.96	.97	.97	.98	.98	.99	I. O	---
.94	.94	.95	.95	.96	.96	.97	.98	.98	.99	.99
.93	.93	.94	.95	.95	.96	.96	.97	.97	.98	.98
.92	.93	.93	.94	.94	.95	.95	.96	.97	.97	.98