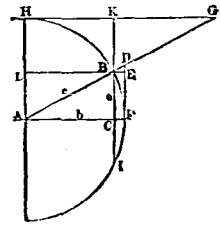
附　表　目　錄

三角函數

以 A=角 BAC=弧 BF, 並以半徑 $AF=AB=AH=1$; 則得

$\sin A = BC$
$\cos A = AC$
$\tan A = DF$
$\cot A = HG$
$\sec A = AD$
$\operatorname{cosec} A = AG$
$\operatorname{versin} A = CF = BE$
$\operatorname{covers} A = BK = HL$
$\operatorname{exsec} A = ?D$
$\operatorname{coexsec} A = BG$
$\operatorname{chord} A = BF$
$\operatorname{chord} 2A = BI = 2BC$



在直角三角形 ABC, 以 $AB=c$, $AC=b$, $BC=a$; 則得

1. $\sin A = \frac{a}{c} = \cos B$
2. $\cos A = \frac{b}{c} = \sin B$
3. $\tan A = \frac{a}{b} = \cot B$
4. $\cot A = \frac{b}{a} = \tan B$
5. $\sec A = \frac{c}{b} = \operatorname{cosec} B$
6. $\operatorname{cosec} A = \frac{c}{a} = \sec B$
7. $\operatorname{vers} A = \frac{c-b}{c} = \operatorname{covers} B$
8. $\operatorname{exsec} A = \frac{c-b}{b} = \operatorname{coexsec} B$
9. $\operatorname{covers} = \frac{c-a}{c} = \operatorname{versin} B$
10. $\operatorname{coexsec} A = \frac{c-a}{a} = \operatorname{exsec} B$
11. $a = c \sin A = b \tan A$
12. $b = c \cos A = a \cot A$
13. $c = \frac{a}{\sin A} = \frac{b}{\cos A}$
14. $a = c \cos B = b \cot B$
15. $b = c \sin B = a \tan B$
16. $c = \frac{a}{\cos B} = \frac{b}{\sin B}$
17. $a = \sqrt{(c+b)(c-b)}$
18. $b = \sqrt{(c+a)(c-a)}$
19. $c = \sqrt{a^2+b^2}$
20. $C = 90° = A+B$
21. 面積 $= \frac{ab}{2}$

斜三角形之解法

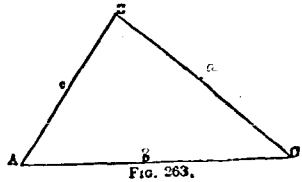


FIG. 263.

	已知	未知	公式
22	A, B, a	C, b, c	$C=180°-(A+B)$, $b=\frac{a}{\sin A}\cdot\sin B$, $c=\frac{a}{\sin A}\cdot\sin(A+B)$
23	A, a, b	B, C, c	$\sin B=\frac{\sin A}{a}b$, $C=180°-(A+B)$, $c=\frac{a}{\sin A}\cdot\sin C$
24	C, a, b	$\frac{1}{2}(A+B)$	$\frac{1}{2}(A+B)=90°-\frac{1}{2}C$
25		$\frac{1}{2}(A-B)$	$\tan\frac{1}{2}(A-B)=\frac{a-b}{a+b}\tan\frac{1}{2}(A+B)$
26		A, B	$A=\frac{1}{2}(A+B)+\frac{1}{2}(A-B)$, $B=\frac{1}{2}(A+B)-\frac{1}{2}(A-B)$
27		c	$c=(a+b)\frac{\cos\frac{1}{2}(A+B)}{\cos\frac{1}{2}(A-B)}$ $=\sqrt{a^2+b^2-2ab\cos C}$
28		面積	$F=\frac{1}{2}ab\sin C$
29	a, b, c	A	以 $s=\frac{1}{2}(a+b+c)$; $\sin\frac{1}{2}A=\sqrt{\frac{(s-b)(s-c)}{bc}}$
30			$\cos\frac{1}{2}A=\sqrt{\frac{s(s-a)}{a}}$; $\tan\frac{1}{2}A=\sqrt{\frac{(s-b)(s-c)}{s(s-a)}}$
31			$\sin A=\frac{2\sqrt{s(s-a)(s-b)(s-c)}}{bc}$; $\cos A=\frac{b^2+c^2-a^2}{2bc}$
32		面積	$F=\sqrt{s(s-a)(s-b)(s-c)}$
33	A, B, C, a	面積	$F=\frac{a^2\sin B\cdot\sin C}{2\sin A}$

	一 般 公 式
34	$\sin A = \frac{1}{\operatorname{cosec} A} = \sqrt{1-\cos^2 A} = \tan A \cos A$
35	$\sin A = 2 \sin \frac{1}{2} A \cos \frac{1}{2} A = \operatorname{vers} A \cot \frac{1}{2} A$
36	$\sin A = \sqrt{\frac{1}{2} \operatorname{vers} 2A} = \sqrt{\frac{1}{2}(1-\cos 2A)}$
37	$\cos A = \frac{1}{\sec A} = \sqrt{1-\sin^2 A} = \cot A \sin A$
38	$\cos A = 1 - \operatorname{vers} A = 2 \cos^2 \frac{1}{2} A - 1 = 1 - 2 \sin^2 \frac{1}{2} A$
39	$\cos A = \cos^2 \frac{1}{2} A - \sin^2 \frac{1}{2} A = \sqrt{\frac{1}{2} + \frac{1}{2} \cos 2A}$
40	$\tan A = \frac{1}{\cot A} = \frac{\sin A}{\cos A} = \sqrt{\sec^2 A - 1}$
41	$\tan A = \sqrt{\frac{1}{\cos^2 A} - 1} = \frac{\sqrt{1-\cos^2 A}}{\cos A} = \frac{\sin 2A}{1+\cos 2A}$
42	$\tan A = \frac{1-\cos 2A}{\sin 2A} = \frac{\operatorname{vers} 2A}{\sin 2A} = \operatorname{exsec} A \cot \frac{1}{2} A$
43	$\cot A = \frac{1}{\tan A} = \frac{\cos A}{\sin A} = \sqrt{\operatorname{cosec}^2 A - 1}$
44	$\cot A = \frac{\sin 2A}{1-\cos 2A} = \frac{\sin 2A}{\operatorname{vers} 2A} = \frac{1+\cos 2A}{\sin 2A}$
45	$\cot A = \frac{\tan \frac{1}{2} A}{\operatorname{exsec} A}$
46	$\operatorname{vers} A = 1 - \cos A = \sin A \tan \frac{1}{2} A = 2 \sin^2 \frac{1}{2} A$
47	$\operatorname{vers} A = \operatorname{exsec} A \cos A$
48	$\operatorname{exsec} A = \sec A - 1 = \tan A \tan \frac{1}{2} A = \frac{\operatorname{vers} A}{\cos A}$
49	$\sin \frac{1}{2} A = \sqrt{\frac{1-\cos A}{2}} = \sqrt{\frac{\operatorname{vers} A}{2}}$
50	$\sin 2A = 2 \sin A \cos A$
51	$\cos \frac{1}{2} A = \sqrt{\frac{1+\cos A}{2}}$
52	$\cos 2A = 2 \cos^2 A - 1 = \cos^2 A - \sin^2 A = 1 - 2 \sin^2 A$

	一　般　公　式　(續)
53	$\tan \frac{1}{2}A = \frac{\tan A}{1+\sec A} = \operatorname{cosec} A - \cot A = \frac{1-\cos A}{\sin A} = \sqrt{\frac{1-\cos A}{1+\cos A}}$
54	$\tan 2A = \frac{2\tan A}{1-\tan^2 A}$
55	$\cot \frac{1}{2}A = \frac{\sin A}{\operatorname{vers} A} = \frac{1+\cos A}{\sin A} = \frac{1}{\operatorname{cosec} A - \cot A}$
56	$\cot 2A = \frac{\cot^2 A - 1}{2\cot A}$
57	$\operatorname{vers} \frac{1}{2}A = \frac{\frac{1}{2}\operatorname{vers} A}{1+\sqrt{1-\frac{1}{2}\operatorname{vers} A}} = \frac{1-\cos A}{2+\sqrt{2(1+\cos A)}}$
58	$\operatorname{vers} 2A = 2\sin^2 A$
59	$\operatorname{exsec} \frac{1}{2}A = \frac{1-\cos A}{(1+\cos A)+\sqrt{2(1+\cos A)}}$
60	$\operatorname{exsec} 2A = \frac{\tan^2 A}{1-\tan^2 A}$
61	$\sin(A \pm B) = \sin A \cos B \pm \sin B \cos A$
62	$\cos(A \pm B) = \cos A \cos B \mp \sin A \sin B$
63	$\sin A + \sin B = 2\sin \frac{1}{2}(A+B)\cos \frac{1}{2}(A-B)$
64	$\sin A - \sin B = 2\cos \frac{1}{2}(A+B)\sin \frac{1}{2}(A-B)$
65	$\cos A + \cos B = 2\cos \frac{1}{2}(A+B)\cos \frac{1}{2}(A-B)$
66	$\cos A - \cos B = 2\sin \frac{1}{2}(A+B)\sin \frac{1}{2}(A-B)$
67	$\sin^2 A - \sin^2 B = \cos^2 B - \cos^2 A = \sin(A+B)\sin(A-B)$
68	$\cos^2 A - \sin^2 B = \cos(A+B)\cos(A-B)$
69	$\tan A + \tan B = \frac{\sin(A+B)}{\cos A \cos B}$
70	$\tan A - \tan B = \frac{\sin(A-B)}{\cos A \cos B}$

第二表　緯經距表 (§211)

方位角	1 緯距	1 經距	2 緯距	2 經距	3 緯距	3 經距	4 緯距	4 經距	5 緯距	5 經距
0°	1.000	0.000	2.000	0.000	3.000	0.000	0.000	0.000	5.000	0.000
0¼	1.000	0.004	2.000	0.009	3.000	0.013	0.017	0.017	5.000	0.022
0½	1.000	0.009	2.000	0.017	3.000	0.026	0.035	0.035	5.000	0.044
0¾	1.000	0.013	2.000	0.026	3.000	0.039	0.052	0.052	5.000	0.065
1°	1.000	0.017	2.000	0.035	3.000	0.052	0.070	0.070	4.999	0.087
1¼	1.000	0.022	2.000	0.044	2.999	0.065	0.087	0.087	4.999	0.109
1½	1.000	0.026	1.999	0.052	2.999	0.079	0.105	0.105	4.998	0.131
1¾	1.000	0.031	1.999	0.061	2.999	0.092	0.122	0.122	4.998	0.153
2°	0.999	0.035	1.999	0.070	2.998	0.105	0.140	0.140	4.997	0.174
2¼	0.999	0.039	1.998	0.079	2.998	0.118	0.157	0.157	4.996	0.196
2½	0.999	0.044	1.998	0.087	2.997	0.131	0.174	0.174	4.995	0.218
2¾	0.999	0.048	1.998	0.096	2.997	0.144	0.192	0.192	4.994	0.240
3°	0.999	0.052	1.997	0.105	2.996	0.157	0.209	0.209	4.993	0.262
3¼	0.998	0.057	1.997	0.113	2.995	0.170	0.227	0.227	4.992	0.283
3½	0.998	0.061	1.996	0.122	2.994	0.183	0.244	0.244	4.991	0.305
3¾	0.998	0.065	1.996	0.131	2.994	0.196	0.262	0.262	4.989	0.327
4°	0.998	0.070	1.995	0.140	2.993	0.209	0.279	0.279	4.988	0.349
4¼	0.997	0.074	1.995	0.148	2.992	0.222	0.296	0.296	4.986	0.371
4½	0.997	0.078	1.994	0.157	2.991	0.235	0.314	0.314	4.985	0.392
4¾	0.997	0.083	1.993	0.166	2.990	0.248	0.331	0.331	4.983	0.414
5°	0.996	0.087	1.992	0.174	2.989	0.261	0.349	0.349	4.981	0.436
5¼	0.996	0.092	1.992	0.183	2.987	0.275	0.366	0.366	4.979	0.458
5½	0.995	0.096	1.991	0.192	2.986	0.288	0.383	0.383	4.977	0.479
5¾	0.995	0.100	1.990	0.200	2.985	0.301	0.401	0.401	4.975	0.501
6°	0.995	0.105	1.989	0.209	2.984	0.314	0.418	0.418	4.973	0.523
6¼	0.994	0.109	1.988	0.218	2.982	0.327	0.435	0.435	4.970	0.544
6½	0.994	0.113	1.987	0.226	2.981	0.340	0.453	0.453	4.968	0.566
6¾	0.993	0.118	1.986	0.235	2.979	0.353	0.470	0.470	4.965	0.588
7°	0.993	0.122	1.985	0.244	2.978	0.366	0.487	0.487	4.963	0.609
7¼	0.992	0.126	1.984	0.252	2.976	0.379	0.505	0.505	4.960	0.631
7½	0.991	0.131	1.983	0.261	2.974	0.392	0.522	0.522	4.957	0.653
7¾	0.991	0.135	1.982	0.270	2.973	0.405	0.539	0.539	4.954	0.674
8°	0.990	0.139	1.981	0.278	2.971	0.418	0.557	0.557	4.951	0.696
8¼	0.990	0.143	1.979	0.287	2.969	0.430	0.574	0.574	4.948	0.717
8½	0.989	0.148	1.978	0.296	2.967	0.443	0.591	0.591	4.945	0.739
8¾	0.988	0.152	1.977	0.304	2.965	0.456	0.608	0.608	4.942	0.761
9°	0.988	0.156	1.975	0.313	2.963	0.469	0.626	0.626	4.938	0.782
9¼	0.987	0.161	1.974	0.321	2.961	0.482	0.643	0.643	4.935	0.804
9½	0.986	0.165	1.973	0.330	2.959	0.495	0.660	0.660	4.931	0.825
9¾	0.986	0.169	1.971	0.339	2.957	0.508	0.677	0.677	4.928	0.847
10°	0.985	0.174	1.970	0.347	2.954	0.521	0.695	0.695	4.924	0.868
10¼	0.984	0.178	1.968	0.356	2.952	0.534	0.712	0.712	4.920	0.890
10½	0.983	0.182	1.967	0.364	2.950	0.547	0.729	0.729	4.916	0.911
10¾	0.982	0.187	1.965	0.373	2.947	0.560	0.746	0.746	4.912	0.933
11°	0.982	0.191	1.963	0.382	2.945	0.572	0.763	0.763	4.908	0.954
11¼	0.981	0.195	1.962	0.390	2.942	0.585	0.780	0.780	4.904	0.975
11½	0.980	0.199	1.960	0.399	2.940	0.598	0.797	0.797	4.900	0.997
11¾	0.979	0.204	1.958	0.407	2.937	0.611	0.815	0.815	4.895	1.018
12°	0.978	0.208	1.956	0.416	2.934	0.624	0.832	0.832	4.891	1.040
12¼	0.977	0.212	1.954	0.424	2.932	0.637	0.849	0.849	4.886	1.061
12½	0.976	0.216	1.953	0.433	2.929	0.649	0.866	0.866	4.881	1.082
12¾	0.975	0.221	1.951	0.441	2.926	0.662	0.883	0.883	4.877	1.103
13°	0.974	0.225	1.949	0.450	2.923	0.675	0.900	0.900	4.872	1.125
13¼	0.973	0.229	1.947	0.458	2.920	0.688	0.917	0.917	4.867	1.146
13½	0.972	0.233	1.945	0.467	2.917	0.700	0.934	0.934	4.862	1.167
13¾	0.971	0.238	1.943	0.475	2.914	0.713	0.951	0.951	4.857	1.188
14°	0.970	0.242	1.941	0.484	2.911	0.726	0.968	0.968	4.851	1.210
14¼	0.969	0.246	1.938	0.492	2.908	0.738	0.985	0.985	4.846	1.231
14½	0.968	0.250	1.936	0.501	2.904	0.751	1.002	1.002	4.841	1.252
14¾	0.967	0.255	1.934	0.509	2.901	0.764	1.018	1.018	4.835	1.273
15°	0.966	0.259	1.932	0.518	2.898	0.776	1.035	1.035	4.830	1.294
方位角	緯距	經距	緯距	經距	緯距	經距	緯距	經距	緯距	經距
	1		2		3		4		5	

6		7		8		9		方位角
緯距	經距	緯距	經距	緯距	經距	緯距	經距	
6.000	0.000	7.000	0.000	8.000	0.000	9.000	0.000	90°
6.000	0.026	7.000	0.031	8.000	0.035	9.000	0.039	89½
6.000	0.052	7.000	0.061	8.000	0.070	9.000	0.079	89
5.999	0.079	6.999	0.092	7.999	0.105	8.999	0.118	88½
5.999	0.105	6.999	0.122	7.999	0.140	8.999	0.157	89°
5.999	0.131	6.998	0.153	7.998	0.175	8.998	0.196	88½
5.998	0.157	6.998	0.183	7.997	0.209	8.997	0.236	88
5.997	0.183	6.997	0.214	7.996	0.244	8.996	0.275	87½
5.996	0.209	6.996	0.244	7.995	0.279	8.995	0.314	88°
5.995	0.236	6.995	0.275	7.994	0.314	8.993	0.353	87½
5.994	0.262	6.993	0.305	7.992	0.349	8.991	0.393	87
5.993	0.288	6.992	0.336	7.991	0.384	8.990	0.432	87½
5.992	0.314	6.990	0.366	7.989	0.419	8.988	0.471	87°
5.990	0.340	6.989	0.397	7.987	0.454	8.986	0.510	86½
5.989	0.366	6.987	0.427	7.985	0.488	8.983	0.549	86
5.987	0.392	6.985	0.458	7.983	0.523	8.981	0.589	86½
5.985	0.419	6.983	0.488	7.981	0.558	8.978	0.628	86°
5.984	0.445	6.981	0.519	7.978	0.593	8.975	0.667	85½
5.982	0.471	6.978	0.549	7.975	0.628	8.972	0.706	85
5.979	0.497	6.976	0.580	7.973	0.662	8.969	0.745	85½
5.977	0.523	6.973	0.610	7.970	0.697	8.966	0.784	85°
5.975	0.549	6.971	0.641	7.966	0.732	8.962	0.824	84½
5.972	0.575	6.968	0.671	7.963	0.767	8.959	0.863	84
5.970	0.601	6.965	0.701	7.960	0.802	8.955	0.902	84½
5.967	0.627	6.962	0.732	7.956	0.836	8.951	0.941	84°
5.964	0.653	6.958	0.762	7.952	0.871	8.947	0.980	83½
5.961	0.679	6.955	0.792	7.949	0.906	8.942	1.019	83
5.958	0.705	6.951	0.823	7.945	0.940	8.938	1.058	83½
5.955	0.731	6.948	0.853	7.940	0.975	8.933	1.097	83°
5.952	0.757	6.944	0.883	7.936	1.010	8.928	1.136	82½
5.949	0.783	6.940	0.914	7.932	1.044	8.923	1.175	82
5.945	0.809	6.936	0.944	7.927	1.079	8.918	1.214	82½
5.942	0.835	6.932	0.974	7.922	1.113	8.912	1.253	82°
5.938	0.861	6.928	1.004	7.917	1.148	8.907	1.291	81½
5.934	0.887	6.923	1.035	7.912	1.182	8.901	1.330	81
5.930	0.913	6.919	1.065	7.907	1.217	8.895	1.369	81½
5.926	0.939	6.914	1.095	7.902	1.251	8.889	1.408	81°
5.922	0.964	6.909	1.125	7.896	1.286	8.883	1.447	80½
5.918	0.990	6.904	1.155	7.890	1.320	8.877	1.485	80
5.913	1.016	6.899	1.185	7.884	1.355	8.870	1.524	80½
5.909	1.042	6.894	1.216	7.878	1.389	8.863	1.563	80°
5.904	1.068	6.888	1.246	7.872	1.424	8.856	1.601	79½
5.900	1.093	6.883	1.276	7.866	1.458	8.849	1.640	79
5.895	1.119	6.877	1.306	7.860	1.492	8.842	1.679	79½
5.890	1.145	6.871	1.336	7.853	1.526	8.835	1.717	79°
5.885	1.171	6.866	1.366	7.846	1.561	8.827	1.756	78½
5.880	1.196	6.859	1.396	7.839	1.595	8.819	1.794	78
5.874	1.222	6.853	1.425	7.832	1.629	8.811	1.833	78½
5.869	1.247	6.847	1.455	7.825	1.663	8.803	1.871	78°
5.863	1.273	6.841	1.485	7.818	1.697	8.795	1.910	77½
5.858	1.299	6.834	1.515	7.810	1.732	8.787	1.948	77
5.852	1.324	6.827	1.545	7.803	1.766	8.778	1.986	77½
5.846	1.350	6.821	1.575	7.795	1.800	8.769	2.025	77°
5.840	1.375	6.814	1.604	7.787	1.834	8.760	2.063	76½
5.834	1.401	6.807	1.634	7.779	1.868	8.751	2.101	76
5.828	1.426	6.799	1.664	7.771	1.902	8.742	2.139	76½
5.822	1.452	6.792	1.693	7.762	1.935	8.733	2.177	76°
5.815	1.477	6.785	1.723	7.754	1.969	8.723	2.215	75½
5.809	1.502	6.777	1.753	7.745	2.003	8.713	2.253	75
5.802	1.528	6.769	1.782	7.736	2.037	8.703	2.291	75½
5.795	1.553	6.761	1.812	7.727	2.071	8.693	2.329	75°
經距	緯距	經距	緯距	經距	緯距	經距	緯距	方位角
6		7		8		9		

第二表　緯經距表 (§211)

方位角	1 緯距	1 經距	2 緯距	2 經距	3 緯距	3 經距	4 緯距	4 經距	5 緯距	5 經距
15°	0.966	0.259	1.932	0.518	2.898	0.776	3.864	1.035	4.830	1.294
15¼	0.965	0.263	1.930	0.526	2.894	0.789	3.859	1.052	4.824	1.315
15½	0.964	0.267	1.927	0.534	2.891	0.802	3.855	1.069	4.818	1.336
15¾	0.962	0.271	1.925	0.543	2.887	0.814	3.850	1.086	4.812	1.357
16°	0.961	0.276	1.923	0.551	2.884	0.827	3.845	1.103	4.806	1.378
16¼	0.960	0.280	1.920	0.560	2.880	0.839	3.840	1.119	4.800	1.399
16½	0.959	0.284	1.918	0.568	2.876	0.852	3.835	1.136	4.794	1.420
16¾	0.958	0.288	1.915	0.576	2.873	0.865	3.830	1.153	4.788	1.441
17°	0.956	0.292	1.913	0.585	2.869	0.877	3.825	1.169	4.782	1.462
17¼	0.955	0.297	1.910	0.593	2.865	0.890	3.820	1.186	4.775	1.483
17½	0.954	0.301	1.907	0.601	2.861	0.902	3.815	1.203	4.769	1.504
17¾	0.952	0.305	1.905	0.610	2.857	0.915	3.810	1.220	4.762	1.524
18°	0.951	0.309	1.902	0.618	2.853	0.927	3.804	1.236	4.755	1.545
18¼	0.950	0.313	1.899	0.626	2.849	0.939	3.799	1.253	4.748	1.566
18½	0.948	0.317	1.897	0.635	2.845	0.952	3.793	1.269	4.742	1.587
18¾	0.947	0.321	1.894	0.643	2.841	0.964	3.788	1.286	4.735	1.607
19°	0.946	0.326	1.891	0.651	2.837	0.977	3.782	1.302	4.728	1.628
19¼	0.944	0.330	1.888	0.659	2.832	0.989	3.776	1.319	4.720	1.648
19½	0.943	0.334	1.885	0.668	2.828	1.001	3.771	1.335	4.713	1.669
19¾	0.941	0.338	1.882	0.676	2.824	1.014	3.765	1.352	4.706	1.690
20°	0.940	0.342	1.879	0.684	2.819	1.026	3.759	1.368	4.698	1.710
20¼	0.938	0.346	1.876	0.692	2.815	1.038	3.753	1.384	4.691	1.731
20½	0.937	0.350	1.873	0.700	2.810	1.051	3.747	1.401	4.683	1.751
20¾	0.935	0.354	1.870	0.709	2.805	1.063	3.741	1.417	4.676	1.771
21°	0.934	0.358	1.867	0.717	2.801	1.075	3.734	1.433	4.668	1.792
21¼	0.932	0.362	1.864	0.725	2.796	1.087	3.728	1.450	4.660	1.812
21½	0.930	0.367	1.861	0.733	2.791	1.100	3.722	1.466	4.652	1.833
21¾	0.929	0.371	1.858	0.741	2.786	1.112	3.715	1.482	4.644	1.853
22°	0.927	0.375	1.854	0.749	2.782	1.124	3.709	1.498	4.636	1.873
22¼	0.926	0.379	1.851	0.757	2.777	1.136	3.702	1.515	4.628	1.893
22½	0.924	0.383	1.848	0.765	2.772	1.148	3.696	1.531	4.619	1.913
22¾	0.922	0.387	1.844	0.773	2.767	1.160	3.689	1.547	4.611	1.934
23°	0.921	0.391	1.841	0.781	2.762	1.172	3.682	1.563	4.603	1.954
23¼	0.919	0.395	1.838	0.789	2.756	1.184	3.675	1.579	4.594	1.974
23½	0.917	0.399	1.834	0.797	2.751	1.196	3.668	1.595	4.585	1.994
23¾	0.915	0.403	1.831	0.805	2.746	1.208	3.661	1.611	4.577	2.014
24°	0.914	0.407	1.827	0.813	2.741	1.220	3.654	1.627	4.567	2.034
24¼	0.912	0.411	1.824	0.821	2.735	1.232	3.647	1.643	4.559	2.054
24½	0.910	0.415	1.820	0.829	2.730	1.244	3.640	1.659	4.551	2.073
24¾	0.908	0.419	1.816	0.837	2.724	1.256	3.633	1.675	4.541	2.093
25°	0.906	0.423	1.813	0.845	2.719	1.268	3.625	1.690	4.532	2.113
25¼	0.904	0.427	1.809	0.853	2.713	1.280	3.618	1.706	4.522	2.133
25½	0.903	0.431	1.805	0.861	2.708	1.292	3.610	1.722	4.513	2.153
25¾	0.901	0.434	1.80	0.869	2.702	1.303	3.603	1.738	4.503	2.172
26°	0.899	0.438	1.798	0.877	2.696	1.315	3.595	1.753	4.494	2.192
26¼	0.897	0.442	1.794	0.885	2.691	1.327	3.587	1.769	4.484	2.211
26½	0.895	0.446	1.790	0.892	2.685	1.339	3.580	1.785	4.475	2.231
26¾	0.893	0.450	1.786	0.900	2.679	1.350	3.572	1.800	4.465	2.250
27°	0.891	0.454	1.782	0.908	2.673	1.362	3.564	1.816	4.455	2.270
27¼	0.889	0.458	1.778	0.916	2.667	1.374	3.556	1.831	4.445	2.289
27½	0.887	0.462	1.774	0.923	2.661	1.385	3.548	1.847	4.435	2.309
27¾	0.885	0.466	1.770	0.931	2.655	1.397	3.540	1.862	4.425	2.328
28°	0.883	0.469	1.766	0.939	2.649	1.408	3.532	1.878	4.415	2.347
28¼	0.881	0.473	1.762	0.947	2.643	1.420	3.524	1.893	4.404	2.367
28½	0.879	0.477	1.758	0.954	2.636	1.431	3.515	1.909	4.394	2.386
28¾	0.877	0.481	1.753	0.962	2.630	1.443	3.507	1.924	4.384	2.405
29°	0.875	0.485	1.749	0.970	2.624	1.454	3.498	1.939	4.373	2.424
29¼	0.872	0.489	1.745	0.977	2.617	1.466	3.490	1.954	4.362	2.443
29½	0.870	0.492	1.741	0.985	2.611	1.477	3.481	1.970	4.352	2.462
29¾	0.868	0.496	1.736	0.992	2.605	1.489	3.473	1.985	4.341	2.481
30°	0.866	0.500	1.732	1.000	2.598	1.500	3.464	2.000	4.330	2.500
方位角	1 經距	1 緯距	2 經距	2 緯距	3 經距	3 緯距	4 經距	4 緯距	5 經距	5 緯距

第二表　緯經距表 (§211)

6		7		8		9		方位角
緯距	經距	緯距	經距	緯距	經距	緯距	經距	
5.796	1.553	6.761	1.812	7.727	2.071	8.693	2.329	75°
5.789	1.578	6.754	1.841	7.718	2.104	8.683	2.367	74½
5.782	1.603	6.745	1.871	7.709	2.138	8.673	2.405	74
5.775	1.629	6.737	1.900	7.700	2.172	8.662	2.443	73½
5.768	1.654	6.729	1.929	7.690	2.205	8.651	2.481	73°
5.760	1.679	6.720	1.959	7.680	2.239	8.640	2.518	72½
5.753	1.704	6.712	1.988	7.671	2.272	8.629	2.556	72
5.745	1.729	6.703	2.017	7.661	2.306	8.618	2.594	71½
5.738	1.754	6.694	2.047	7.650	2.339	8.607	2.631	71°
5.730	1.779	6.685	2.076	7.640	2.372	8.595	2.669	70½
5.722	1.804	6.676	2.105	7.630	2.406	8.583	2.706	70
5.714	1.829	6.667	2.134	7.619	2.439	8.572	2.744	69½
5.706	1.854	6.657	2.163	7.608	2.472	8.560	2.781	69°
5.698	1.879	6.648	2.192	7.598	2.505	8.547	2.818	68½
5.690	1.904	6.638	2.221	7.587	2.538	8.535	2.856	68
5.682	1.929	6.629	2.250	7.576	2.572	8.522	2.893	67½
5.673	1.953	6.619	2.279	7.564	2.605	8.510	2.930	67°
5.665	1.978	6.609	2.308	7.553	2.638	8.497	2.967	66½
5.656	2.003	6.598	2.337	7.541	2.670	8.484	3.004	66
5.647	2.028	6.588	2.365	7.529	2.703	8.471	3.041	65½
5.638	2.052	6.578	2.394	7.518	2.736	8.457	3.078	65°
5.629	2.077	6.567	2.423	7.506	2.769	8.444	3.115	64½
5.620	2.101	6.557	2.451	7.493	2.802	8.430	3.152	64
5.611	2.126	6.546	2.480	7.481	2.834	8.416	3.189	63½
5.601	2.150	6.535	2.509	7.469	2.867	8.402	3.225	63°
5.592	2.175	6.524	2.537	7.456	2.900	8.388	3.262	62½
5.582	2.199	6.513	2.566	7.443	2.932	8.374	3.299	62
5.573	2.223	6.502	2.594	7.430	2.964	8.359	3.335	61½
5.563	2.248	6.490	2.622	7.417	2.997	8.345	3.371	61°
5.553	2.272	6.479	2.651	7.404	3.029	8.330	3.408	60½
5.543	2.296	6.467	2.679	7.391	3.061	8.315	3.444	60
5.533	2.320	6.455	2.707	7.378	3.094	8.300	3.480	59½
5.523	2.344	6.444	2.735	7.364	3.126	8.285	3.517	59°
5.513	2.368	6.432	2.763	7.350	3.158	8.269	3.553	58½
5.502	2.392	6.419	2.791	7.336	3.190	8.254	3.589	58
5.492	2.416	6.407	2.819	7.322	3.222	8.238	3.625	57½
5.481	2.440	6.395	2.847	7.308	3.254	8.222	3.661	57°
5.471	2.464	6.382	2.875	7.294	3.286	8.206	3.696	56½
5.460	2.488	6.370	2.903	7.280	3.318	8.190	3.732	56
5.449	2.512	6.357	2.931	7.265	3.349	8.173	3.768	55½
5.438	2.536	6.344	2.958	7.250	3.381	8.157	3.804	55°
5.427	2.559	6.331	2.986	7.236	3.413	8.140	3.839	54½
5.416	2.583	6.318	3.014	7.221	3.444	8.123	3.875	54
5.404	2.607	6.305	3.041	7.205	3.476	8.106	3.910	53½
5.393	2.630	6.292	3.069	7.190	3.507	8.089	3.945	53°
5.381	2.654	6.278	3.096	7.175	3.538	8.072	3.981	52½
5.370	2.677	6.265	3.123	7.160	3.570	8.054	4.016	52
5.358	2.701	6.251	3.151	7.144	3.601	8.037	4.051	51½
5.346	2.724	6.237	3.178	7.128	3.632	8.019	4.086	51°
5.334	2.747	6.223	3.205	7.112	3.663	8.001	4.121	50½
5.322	2.770	6.209	3.232	7.096	3.694	7.983	4.156	50
5.310	2.794	6.195	3.259	7.080	3.725	7.965	4.190	49½
5.298	2.817	6.181	3.286	7.064	3.756	7.947	4.225	49°
5.285	2.840	6.166	3.313	7.047	3.787	7.928	4.260	48½
5.273	2.863	6.152	3.340	7.031	3.817	7.909	4.294	48
5.260	2.885	6.137	3.367	7.014	3.848	7.891	4.329	47½
5.248	2.909	6.122	3.394	6.997	3.878	7.872	4.363	47°
5.235	2.932	6.107	3.420	6.980	3.909	7.852	4.398	46½
5.222	2.955	6.093	3.447	6.963	3.939	7.833	4.432	46
5.209	2.977	6.077	3.474	6.946	3.970	7.814	4.466	45½
5.196	3.000	6.062	3.500	6.928	4.000	7.794	4.500	45°
經距	緯距	經距	緯距	經距	緯距	經距	緯距	方位角
6		7		8		9		

第二表　緯經距表（§211）

方位角	1		2		3		4		5	
	緯距	經距	緯距	經距	緯距	經距	緯距	經距	緯距	經距
30°	0.866	0.500	1.732	1.000	2.598	1.500	3.464	2.000	4.330	2.500
30¼	0.864	0.504	1.728	1.008	2.592	1.511	3.455	2.015	4.319	2.519
30½	0.862	0.508	1.723	1.015	2.585	1.523	3.447	2.030	4.308	2.538
30¾	0.859	0.511	1.719	1.033	2.578	1.534	3.438	2.045	4.297	2.556
31°	0.857	0.515	1.714	1.030	2.572	1.545	3.429	2.060	4.286	2.575
31¼	0.855	0.519	1.710	1.038	2.565	1.556	3.420	2.075	4.275	2.594
31½	0.853	0.522	1.705	1.045	2.558	1.567	3.411	2.090	4.263	2.612
31¾	0.850	0.526	1.701	1.052	2.551	1.579	3.401	2.105	4.252	2.631
32°	0.848	0.530	1.696	1.060	2.544	1.590	3.392	2.120	4.240	2.650
32¼	0.846	0.534	1.691	1.067	2.537	1.601	3.383	2.134	4.229	2.668
32½	0.843	0.537	1.687	1.075	2.530	1.612	3.374	2.149	4.217	2.687
32¾	0.841	0.541	1.682	1.082	2.523	1.623	3.364	2.164	4.206	2.705
33°	0.839	0.545	1.677	1.089	2.516	1.634	3.355	2.179	4.193	2.723
33¼	0.836	0.548	1.673	1.097	2.509	1.645	3.345	2.193	4.181	2.741
33½	0.834	0.552	1.668	1.104	2.502	1.656	3.336	2.208	4.169	2.760
33¾	0.831	0.556	1.663	1.111	2.494	1.667	3.326	2.222	4.157	2.778
34°	0.829	0.559	1.658	1.119	2.487	1.678	3.316	2.237	4.145	2.796
34¼	0.827	0.563	1.653	1.126	2.480	1.688	3.306	2.251	4.133	2.814
34½	0.824	0.566	1.648	1.133	2.472	1.699	3.297	2.266	4.121	2.832
34¾	0.822	0.570	1.643	1.140	2.465	1.710	3.287	2.280	4.108	2.850
35°	0.819	0.574	1.638	1.147	2.457	1.721	3.277	2.294	4.096	2.868
35¼	0.817	0.577	1.633	1.154	2.450	1.731	3.267	2.309	4.083	2.886
35½	0.814	0.581	1.628	1.161	2.442	1.742	3.257	2.323	4.071	2.904
35¾	0.813	0.584	1.623	1.168	2.435	1.753	3.246	2.337	4.058	2.921
36°	0.809	0.588	1.618	1.176	2.427	1.763	3.236	2.351	4.045	2.939
36¼	0.806	0.591	1.613	1.183	2.419	1.774	3.226	2.365	4.032	2.957
36½	0.804	0.595	1.608	1.190	2.412	1.784	3.215	2.379	4.019	2.974
36¾	0.801	0.598	1.603	1.197	2.404	1.795	3.205	2.393	4.006	2.992
37°	0.799	0.602	1.597	1.204	2.396	1.805	3.195	2.407	3.993	3.009
37¼	0.796	0.605	1.592	1.211	2.388	1.816	3.184	2.421	3.980	3.026
37½	0.793	0.609	1.587	1.218	2.380	1.826	3.173	2.435	3.967	3.044
37¾	0.791	0.612	1.581	1.224	2.372	1.837	3.163	2.449	3.953	3.061
38°	0.788	0.616	1.576	1.231	2.364	1.847	3.152	2.463	3.940	3.078
38¼	0.785	0.619	1.571	1.238	2.356	1.857	3.141	2.476	3.927	3.095
38½	0.783	0.623	1.565	1.245	2.348	1.868	3.130	2.490	3.913	3.113
38¾	0.780	0.626	1.560	1.252	2.340	1.878	3.120	2.504	3.899	3.130
39°	0.777	0.629	1.554	1.259	2.331	1.888	3.109	2.517	3.886	3.147
39¼	0.774	0.633	1.549	1.265	2.323	1.898	3.098	2.531	3.872	3.164
39½	0.772	0.636	1.543	1.272	2.315	1.908	3.086	2.544	3.858	3.180
39¾	0.769	0.639	1.538	1.279	2.307	1.918	3.075	2.558	3.844	3.197
40°	0.766	0.643	1.532	1.286	2.298	1.928	3.064	2.571	3.830	3.214
40¼	0.763	0.646	1.526	1.292	2.290	1.938	3.053	2.584	3.816	3.231
40½	0.760	0.649	1.521	1.299	2.281	1.948	3.042	2.598	3.802	3.247
40¾	0.758	0.653	1.515	1.306	2.273	1.958	3.030	2.611	3.788	3.264
41°	0.755	0.656	1.509	1.312	2.264	1.968	3.019	2.624	3.774	3.280
41¼	0.752	0.659	1.504	1.319	2.256	1.978	3.007	2.637	3.759	3.297
41½	0.749	0.663	1.498	1.325	2.247	1.988	2.996	2.650	3.745	3.313
41¾	0.746	0.666	1.492	1.332	2.238	1.998	2.984	2.664	3.730	3.329
42°	0.743	0.669	1.486	1.338	2.229	2.007	2.973	2.677	3.716	3.346
42¼	0.740	0.672	1.480	1.345	2.221	2.017	2.961	2.689	3.701	3.362
42½	0.737	0.676	1.475	1.351	2.212	2.027	2.949	2.702	3.686	3.378
42¾	0.734	0.679	1.469	1.358	2.203	2.036	2.937	2.715	3.672	3.394
43°	0.731	0.682	1.463	1.364	2.194	2.046	2.926	2.728	3.657	3.410
43¼	0.728	0.685	1.457	1.370	2.185	2.056	2.913	2.741	3.642	3.426
43½	0.725	0.688	1.451	1.377	2.176	2.065	2.901	2.753	3.627	3.442
43¾	0.722	0.692	1.445	1.383	2.167	2.075	2.889	2.766	3.612	3.458
44°	0.719	0.695	1.439	1.389	2.158	2.084	2.877	2.779	3.597	3.473
44¼	0.716	0.698	1.433	1.396	2.149	2.093	2.865	2.791	3.582	3.490
44½	0.713	0.701	1.427	1.402	2.140	2.103	2.852	2.804	3.567	3.505
44¾	0.710	0.704	1.420	1.408	2.131	2.112	2.841	2.816	3.551	3.520
45°	0.707	0.707	1.414	1.414	2.121	2.121	2.828	2.828	3.536	3.536
方位角	經距	緯距	經距	緯距	經距	緯距	經距	緯距	經距	緯距
	1		2		3		4		5	

6		7		8		9		方位角
緯距	經距	緯距	經距	緯距	經距	緯距	經距	
6.196	3.000	6.062	3.600	6.928	4.000	7.794	4.500	60°
6.183	3.023	6.047	3.625	6.911	4.030	7.775	4.534	59½
6.170	3.045	6.031	3.653	6.893	4.060	7.755	4.568	59
6.156	3.068	6.016	3.679	6.875	4.090	7.735	4.602	58½
6.143	3.090	6.000	3.605	6.857	4.120	7.715	4.635	58°
6.129	3.113	5.984	3.631	6.839	4.150	7.694	4.669	57½
6.116	3.135	5.968	3.657	6.821	4.180	7.674	4.702	57
6.102	3.157	5.955	3.683	6.803	4.210	7.653	4.736	56½
6.089	3.180	5.936	3.709	6.784	4.239	7.632	4.769	56°
6.074	3.202	5.920	3.735	6.766	4.269	7.612	4.802	55½
6.060	3.224	5.904	3.761	6.747	4.298	7.591	4.836	55
6.046	3.246	5.887	3.787	6.728	4.328	7.569	4.869	54½
6.032	3.268	5.871	3.812	6.709	4.357	7.548	4.902	54°
6.018	3.290	5.854	3.838	6.690	4.386	7.527	4.935	53½
6.003	3.312	5.837	3.864	6.671	4.416	7.505	4.967	53
4.989	3.333	5.820	3.889	6.650	4.445	7.483	5.000	52½
4.974	3.355	5.803	3.914	6.632	4.474	7.461	5.033	52°
4.960	3.377	5.786	3.940	6.613	4.502	7.439	5.065	51½
4.945	3.398	5.769	3.965	6.593	4.531	7.417	5.098	51
4.930	3.420	5.752	3.990	6.573	4.560	7.395	5.130	50½
4.915	3.441	5.734	4.015	6.553	4.589	7.372	5.162	50°
4.900	3.463	5.716	4.040	6.533	4.617	7.350	5.194	49½
4.885	3.484	5.699	4.065	6.513	4.646	7.327	5.226	49
4.869	3.505	5.681	4.090	6.493	4.674	7.304	5.255	48½
4.854	3.527	5.663	4.115	6.472	4.702	7.281	5.293	48°
4.839	3.548	5.645	4.139	6.452	4.730	7.258	5.322	47½
4.823	3.569	5.627	4.164	6.431	4.759	7.235	5.353	47
4.808	3.590	5.609	4.188	6.410	4.787	7.211	5.385	46½
4.792	3.611	5.590	4.213	6.389	4.815	7.188	5.416	46°
4.776	3.632	5.572	4.237	6.368	4.842	7.164	5.448	45½
4.760	3.653	5.554	4.261	6.347	4.870	7.140	5.479	45
4.744	3.673	5.535	4.286	6.326	4.898	7.116	5.510	44½
4.728	3.694	5.516	4.310	6.304	4.926	7.092	5.541	44°
4.712	3.715	5.497	4.334	6.283	4.953	7.068	5.572	43½
4.696	3.735	5.478	4.358	6.261	4.980	7.043	5.603	43
4.679	3.756	5.459	4.381	6.239	5.007	7.019	5.633	42½
4.663	3.776	5.440	4.405	6.217	5.035	6.993	5.664	42°
4.646	3.796	5.421	4.429	6.195	5.062	6.970	6.694	41½
4.630	3.816	5.401	4.453	6.173	5.089	6.945	5.725	41
4.613	3.837	5.382	4.476	6.151	5.116	6.920	5.755	40½
4.596	3.857	5.362	4.500	6.128	5.142	6.894	5.785	40°
4.579	3.877	5.343	4.523	6.106	5.169	6.869	5.815	39½
4.562	3.897	5.323	4.546	6.083	5.196	6.844	5.845	39
4.545	3.917	5.303	4.569	6.061	5.222	6.818	5.875	38½
4.528	3.936	5.283	4.592	6.038	5.248	6.792	5.905	38°
4.511	3.956	5.263	4.615	6.015	5.275	6.767	5.934	37½
4.494	3.976	5.242	4.638	5.992	5.301	6.741	5.964	37
4.476	3.995	5.222	4.661	5.968	5.327	6.715	5.993	36½
4.459	4.015	5.202	4.684	5.945	5.353	6.688	6.022	36°
4.441	4.034	5.182	4.707	5.922	5.379	6.662	6.051	35½
4.424	4.054	5.161	4.729	5.898	5.405	6.635	6.080	35
4.406	4.073	5.140	4.752	5.875	5.430	6.609	6.109	34½
4.388	4.092	5.119	4.774	5.851	5.456	6.582	6.138	34°
4.370	4.111	5.099	4.796	5.827	5.481	6.555	6.167	33½
4.352	4.130	5.078	4.818	5.803	5.507	6.528	6.196	33
4.334	4.149	5.057	4.841	5.779	5.532	6.501	6.224	32½
4.316	4.168	5.045	4.863	5.755	5.557	6.474	6.253	32°
4.298	4.187	5.014	4.885	5.730	5.582	6.447	6.280	31½
4.280	4.206	4.993	4.906	5.706	5.607	6.419	6.308	31
4.261	0.224	4.971	4.928	5.681	5.632	6.392	6.336	30½
4.243	4.243	4.950	4.950	5.657	5.657	6.364	6.364	30°
經距	緯距	經距	緯距	經距	緯距	經距	緯距	方位角
6		7		8		9		

第三表　絲測指數改算表 (§223)

Minutes.	0°		1°		2°		3°	
	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.
0...	100.00	0.00	99.97	1.74	99.88	3.49	99.73	5.23
2...	100.00	0 06	99.97	1.80	99.87	3.55	99.72	5.28
4...	100.00	0.12	99.97	1.86	99.87	3.60	99.71	5.34
6...	100.00	0.17	99.96	1.92	99.87	3.66	99.71	5.40
8...	100.00	0.23	99.96	1.98	99.86	3.72	99.70	5.46
10...	100.00	0.29	99.96	2.04	99.86	3.78	99.69	5.52
12...	100.00	0.35	99.96	2.09	99.85	3.84	99.69	5.57
14...	100.00	0.41	99.95	2.15	99.85	3.90	99.68	5.63
16...	100.00	0.47	99.95	2.21	99.84	3.95	99.68	5.69
18...	100.00	0.52	99.95	2.27	99.84	4.01	99.67	5.75
20...	100.00	0.58	99.95	2.33	99.83	4.07	99.66	5.80
22...	100.00	0.64	99.94	2.38	99.83	4.13	99.66	5.86
24...	100.00	0.70	99.94	2.44	99.82	4.18	99.65	5.92
26...	99.99	0.76	99.94	2.50	99.82	4.24	99.64	5.98
28...	99.99	0.81	99.93	2.56	99.81	4.30	99.63	6.04
30...	99.99	0.87	99.93	2.62	99.81	4.36	99.63	6.09
32...	99.99	0.93	99.93	2.67	99.80	4.42	99.62	6.15
34...	99.99	0.99	99.93	2.73	99.80	4.48	99.62	6.21
36...	99.99	1.05	99.92	2.79	99.79	4.53	99.61	6.27
38...	99.99	1.11	99.92	2.85	99.79	4.59	99.60	6.33
40...	99.99	1.16	99.92	2.91	99.78	4.65	99.59	6.38
42...	99 99	1.22	99.91	2.97	99.78	4.71	99.59	6.44
44...	99 98	1.28	99 91	3.02	99.77	4.76	99.58	6.50
46...	99.98	1.34	99.90	3.08	99.77	4.82	99.57	6.56
48...	99 98	1.40	99 90	3.14	99.76	4.88	99.56	6.61
50...	99 98	1.45	99.90	3.20	99.76	4.94	99.56	6.67
52...	99.98	1.51	99.89	3.26	99.75	4.99	99.55	6.73
54...	99.98	1.57	99.89	3.31	99.74	5.05	99.54	6.78
56...	99.97	1.63	99.89	3.37	99.74	5.11	99.53	6.84
58...	99.97	1.69	99.88	3.43	99.73	5.17	99.52	6.90
60...	99.97	1.74	99.88	3.49	99.73	5.23	99.51	6.96
$c+f=0.75$	0.75	0.01	0.75	0.02	0.75	0.03	0.75	0.05
$c+f=1.00$	1.00	0.01	1.00	0.03	1.00	0.04	1.00	0.06
$c+f=1.25$	1.25	0.02	1.25	0.03	1.25	0.05	1.25	0.08

Minutes.	4°		5°		6°		7°	
	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.
0...	99.51	6.96	99.24	8.68	98.91	10.40	98.51	12.10
2...	99.51	7.02	99.23	8.74	98.90	10.45	98.50	12.15
4...	99.50	7.07	99.22	8.80	98.88	10.51	98.48	12.21
6...	99.49	7.13	99.21	8.85	98.87	10.57	98.47	12.26
8...	99.48	7.19	99.20	8.91	98.86	10.62	98.46	12.32
10...	99.47	7.25	99.19	8.97	98.85	10.68	98.44	12.38
12...	99.46	7.30	99.18	9.03	98.83	10.74	98.43	12.43
14...	99.46	7.36	99.17	9.08	98.82	10.79	98.41	12.49
16...	99.45	7.42	99.16	9.14	98.81	10.85	98.40	12.55
18...	99.44	7.48	99.15	9.20	98.80	10.91	98.39	12.60
20...	99.43	7.53	99.14	9.25	98.78	10.96	98.37	12.66
22...	99.42	7.59	99.13	9.31	98.77	11.02	98.36	12.72
24...	99.41	7.65	99.11	9.37	98.76	11.08	98.34	12.77
26...	99.40	7.71	99.10	9.43	98.74	11.13	98.33	12.83
28...	99.39	7.76	99.09	9.48	98.73	11.19	98.31	12.88
30...	99.38	7.82	99.08	9.54	98.72	11.25	98.29	12.94
32...	99.38	7.88	99.07	9.60	98.71	11.30	98.28	13.00
34...	99.37	7.94	99.06	9.65	98.69	11.36	98.27	13.05
36...	99.36	7.99	99.05	9.71	98.68	11.42	98.25	13.11
38...	99.35	8.05	99.04	9.77	98.67	11.47	98.24	13.17
40...	99.34	8.11	99.03	9.83	98.65	11.53	98.22	13.22
42...	99.33	8.17	99.01	9.88	98.64	11.59	98.20	13.28
44...	99.32	8.22	99.00	9.94	98.63	11.64	98.19	13.33
46...	99.31	8.28	98.99	10.00	98.61	11.70	98.17	13.39
48...	99.30	8.34	98.98	10.05	98.60	11.76	98.16	13.45
50...	99.29	8.40	98.97	10.11	98.58	11.81	98.14	13.50
52...	99.28	8.45	98.96	10.17	98.57	11.87	98.13	13.56
54...	99.27	8.51	98.94	10.22	98.56	11.93	98.11	13.61
56...	99.26	8.57	98.93	10.28	98.54	11.98	98.10	13.67
58...	99.25	8.63	98.92	10.34	98.53	12.04	98.08	13.73
60...	99.24	8.68	98.91	10.40	98.51	12.10	98.06	13.78
$c+f=0.75$	0.75	0.06	0.75	0.07	0.75	0.08	0.74	0.10
$c+f=1.00$	1.00	0.08	0.99	0.09	0.99	0.11	0.99	0.13
$c+f=1.25$	1.25	0.10	1.24	0.11	1.24	0.14	1.24	0.16

Minutes	8°		9°		10°		11°	
	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.
0...	98.06	13.78	97.55	15.45	96.98	17.10	96.36	18.73
2...	98.05	13.84	97.53	15.51	96.96	17.16	96.34	18.78
4...	98.03	13.89	97.52	15.56	96.94	17.21	96.32	18.84
6...	98.01	13.95	97.50	15.62	96.92	17.26	96.29	18.89
8...	98.00	14.01	97.48	15.67	96.90	17.32	96.27	18.95
10...	97.98	14.06	97.46	15.73	96.88	17.37	96.25	19.00
12...	97.97	14.12	97.44	15.78	96.86	17.43	96.23	19.05
14...	97.95	14.17	97.43	15.84	96.84	17.48	96.21	19.11
16...	97.93	14.23	97.41	15.89	96.82	17.54	96.18	19.16
18...	97.92	14.28	97.39	15.95	96.80	17.59	96.16	19.21
20...	97.90	14.34	97.37	16.00	96.78	17.65	96.14	19.27
22...	97.88	14.40	97.35	16.06	96.76	17.70	96.12	19.32
24...	97.87	14.45	97.33	16.11	96.74	17.76	96.09	19.38
26...	97.85	14.51	97.31	16.17	96.72	17.81	96.07	19.43
28...	97.83	14.56	97.29	16.22	96.70	17.86	96.05	19.48
30...	97.82	14.62	97.28	16.28	96.68	17.92	96.03	19.54
32...	97.80	14.67	97.26	16.33	96.66	17.97	96.00	19.59
34...	97.78	14.73	97.24	16.39	96.64	18.03	95.98	19.64
36...	97.76	14.79	97.22	16.44	96.62	18.08	95.96	19.70
38...	97.75	14.84	97.20	16.50	96.60	18.14	95.93	19.75
40...	97.73	14.90	97.18	16.55	96.57	18.19	95.91	19.80
42...	97.71	14.95	97.16	16.61	96.55	18.24	95.89	19.86
44...	97.69	15.01	97.14	16.66	96.53	18.30	95.86	19.91
46...	97.68	15.06	97.12	16.72	96.51	18.35	95.84	19.96
48...	97.66	15.12	97.10	16.77	96.49	18.41	95.82	20.02
50...	97.64	15.17	97.08	16.83	96.47	18.46	95.79	20.07
52...	97.62	15.23	97.06	16.88	96.45	18.51	95.77	20.12
54...	97.61	15.28	97.04	16.94	96.42	18.57	95.75	20.18
56...	97.59	15.34	97.02	16.99	96.40	18.62	95.72	20.23
58...	97.57	15.40	97.00	17.05	96.38	18.68	95.70	20.28
60	97.55	15 45	96.98	17.10	96.36	18.73	95.68	20.34
$c+f=$ 0.75	0.74	0.11	0.74	0 12	0.74	0.14	0.73	0.15
$c+f=$ 1.00	0.99	0 15	0.99	0 16	0.98	0.18	0.98	0.20
$c+f=$ 1.25	1.23	0.18	1.23	0.21	1.23	0.23	1.22	0.25

Minutes.	12°		13°		14°		15°	
	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.
0...	95.68	20.34	94.94	21.92	94.15	23.47	93.30	25.00
2...	95.65	20.39	94.91	21.97	94 12	23 52	93.27	25.05
4...	95.63	20.44	94.89	22.02	94.09	23.58	93.24	25.10
6...	95.61	20.50	94.86	22.08	94.07	23.63	93.21	25.15
8...	95.58	20.55	94.84	22.13	94.04	23.68	93.18	25.20
10...	95.56	20.60	94.81	22 18	94.01	23.73	93 16	25.25
12...	95.53	20.66	94.79	22.23	93.98	23.78	93 13	25 30
14...	95.51	20.71	94.76	22.28	93.95	23 83	93.10	25 35
16...	95.49	20.76	94.73	22.34	93.93	23.88	93 07	25 40
18...	95.46	20.81	94.71	22.39	93.90	23.93	93.04	25 45
20...	95.44	20.87	94.68	22.44	93.87	23.99	93.01	25 50
22...	95.41	20.92	94.66	22 49	93.84	24.04	92.98	25.55
24...	95.39	20.97	94.63	22 54	93.81	24 09	92.95	25 60
26...	95.36	21.03	94.60	22.60	93.79	24.14	92 92	25 65
28...	95.34	21.08	94.58	22 65	93 76	24.19	92 89	25 70
30...	95.32	21.13	94.55	22 70	93.73	24 24	92.86	25 75
32...	95.29	21.18	94.52	22.75	93.70	24 29	92.83	25 80
34...	95.27	21.24	94.50	22 80	93.67	24.34	92.80	25 85
36...	95.24	21.29	94.47	22.85	93.65	24.39	92 77	25.90
38...	95.22	21.34	94.44	22.91	93.62	24.44	92.74	25.95
40...	95.19	21 39	94.42	22.96	93.59	24.49	92 71	26.00
42 ..	95.17	21.45	94.39	23.01	93.56	24.55	92.68	26.05
44...	95.14	21.50	94.36	23.06	93.53	24.60	92.65	26.10
46...	95.12	21.55	94.34	23.11	93.50	24.65	92.62	26.15
48...	95.09	21.60	94.31	23.16	93.47	24.70	92.59	26.20
50...	95.07	21.66	94.28	23.22	93.45	24.75	92.56	26.25
52...	95.04	21.71	94.26	23.27	93.42	24.80	92.53	26.30
54...	95.02	21.76	94.23	23.32	93.39	24.85	92.49	26.35
56...	94.99	21.81	94.20	23.37	93.36	24.90	92.46	26.40
58...	94.97	21.87	94.17	23.42	93.33	24.95	92.43	26.45
60...	94.94	21.92	94.15	23.47	93.30	25.00	92.40	26.50
$c+f=$ 0.75	0.73	0.16	0.73	0.17	0.73	0.19	0.72	0.20
$c+f=$ 1.00	0.98	0.22	0.97	0.23	0.97	0.25	0.96	0.27
$c+f=$ 1.25	1.22	0.27	1.21	0.29	1.21	0.31	1.20	0.34

Minutes	16°		17°		18°		19°	
	Hor Dist.	Diff. Elev.	Hor Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.
0..	92.40	26.50	91.45	27 96	90.45	29.39	89.40	30.78
2..	92.37	26 55	91 42	28.01	90.42	29 44	89.36	30.83
4...	92 34	26.59	91.39	28 06	90 38	29.48	89.33	30.87
6...	92.31	26 64	91.35	28 10	90 35	29.53	89.29	30.92
8...	92.28	26.69	91.32	28.15	90 31	29.58	89.26	30.97
10. .	92.25	26.74	91.29	28.20	90.28	29.62	89.22	31.01
12 ..	92.22	26.79	91.26	28.25	90.24	29.67	89.18	31.06
14 ..	92.19	26.84	91 22	28.30	90.21	29.72	89.15	31.10
16. .	92.15	26 89	91.19	28.34	90.18	29 76	89 11	31.15
18...	92.12	26.94	91.16	28.39	90.14	29.81	89.08	31.19
20 ..	92.09	26.99	91.12	28.44	90.11	29.86	89.04	31.24
22. .	92.06	27.04	91.09	28.49	90.07	29.90	89 00	31.28
24 ..	92.03	27.09	91.06	28 54	90.04	29 95	88 96	31.33
26 ..	92 00	27.13	91.02	28.58	90.00	30.00	88 93	31.38
28 ..	91.97	27 18	90.99	28.63	89.97	30 04	88.89	31.42
30...	91.93	27.23	90.96	28.68	89.93	30.09	88.86	31.47
32...	91.90	27.28	90.92	28 73	89.90	30.14	88.82	31.51
34...	91.87	27 33	90.89	28.77	89.86	30.19	88 78	31.56
36...	91.84	27.38	90.86	28.82	89.83	30.23	88.75	31.60
38...	91.81	27.43	90.82	28.87	89.79	30.28	88.71	31.65
40. .	91.77	27.48	90.79	28.92	89.76	30.32	88.67	31.69
42...	91.74	27.52	90.76	28.96	89.72	30.37	88.64	31.74
44...	91 71	27 57	90 72	29.01	89.69	30.41	88.60	31.78
46..	91.68	27 62	90 69	29.06	89.65	30.46	88.56	31.83
48...	91.65	27.67	90.66	29.11	89.61	30.51	88.53	31.87
50...	91.61	27 72	90 62	29.15	89.58	30.55	88 49	31.92
52...	91.58	27 77	90.59	29.20	89.54	30.60	88 45	31.96
54...	91.55	27 81	90.55	29.25	89.51	30.65	88.41	32.01
56...	91.52	27.86	90.52	29.30	89.47	30.69	88.38	32.05
58...	91.48	27 91	90.48	29.34	89.44	30.74	88.34	32.09
60...	91.45	27 96	90.45	29.39	89.40	30.78	88.30	32.14
$c+f=$ 0.75	0.72	0.21	0.72	0.23	0.71	0.24	0.71	0.25
$c+f=$ 1.00	0.96	0.28	0.95	0.30	0.95	0.32	0.94	0.33
$c+f=$ 1.25	1.20	0.35	1.19	0.38	1.19	0.40	1.18	0.42

Minutes.	20°		21°		22°		23°	
	Hor Dist	Diff Elev.	Hor. Dist	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.
0...	88.30	32.14	87.16	33.46	85.97	34 73	84 73	35 97
2...	88.26	32.18	87.12	33 50	85.93	34.77	84.69	36.01
4...	88 23	32 23	87.08	33 54	85.89	34.82	84.65	36.05
6...	88 19	32.27	87.04	33 59	85.85	34.86	84.61	36.09
8...	88.15	32.32	87.00	33.63	85.80	34.90	84.57	36.13
10...	88.11	32.36	86.96	33.67	85.76	34.94	84.52	36.17
12...	88 08	32.41	86.92	33 72	85.72	34.98	84.48	36 21
14...	88 04	32.45	86.88	33.76	85.68	35.02	84 44	36 25
16 ..	88 00	32 49	86.84	33.80	85 64	35.07	84.40	36 29
18...	87.96	32 54	86.80	33.84	85.60	35.11	84 35	36 33
20...	87.93	32 58	86 77	33 89	85 56	35.15	84 31	36 37
22...	87.89	32 63	86 73	33.93	85.52	35.19	84.27	36 41
24...	87.85	32.67	86 69	33.97	85.48	35.23	84 23	36 45
26...	87.81	32.72	86 65	34.01	85.44	35.27	84 18	36 49
28...	87 77	32 76	86.61	34.06	85.40	35 31	84.14	36 53
30 .	87.74	32.80	86 57	34.10	85 36	35.36	84 10	36 57
32...	87.70	32.85	86.53	34.14	85.31	35.40	84.06	36.61
34...	87 66	32.89	86.49	34.18	85.27	35.44	84.01	36.65
36...	87.62	32.93	86 45	34 23	85.23	35.48	83.97	36.69
38 ..	87 58	32 98	86.41	34.27	85 19	35.52	83 93	36.73
40...	87 54	33.02	86 37	34.31	85.15	35.56	83.89	36 77
42...	87 51	33.07	86 33	34.35	85.11	35 60	83.84	36 80
44. .	87 47	33.11	86 29	34 40	85 07	35.64	83.80	36.84
46 ..	87 43	33 15	86.25	34 44	85 02	35.68	83.76	36 88
48	87 39	33.20	86 21	34 48	84.98	35.72	83.72	36.92
50	87.35	33.24	86.17	34 52	84.94	35.76	83.67	36.96
52 .	87 31	33.28	86 13	34 57	84.90	35.80	83.63	37.00
54 ..	87 27	33.33	86.09	34.61	84.86	35.85	83.59	37 04
56 ..	87.24	33 37	86.05	34 65	84.82	35.89	83 54	37.08
58 .	87 20	33.41	86.01	34.69	84.77	35 93	83.50	37.12
60 ..	87.16	33 46	85.97	34.73	84.73	35.97	83.46	37.16
$c+f=$ 0.75	0 70	0 26	0 70	0.27	0.69	0.29	0 69	0.30
$c+f=$ 1.00	0 94	0 35	0 93	0.37	0.92	0.38	0 92	0.40
$c+f=$ 1.25	1 17	0 44	1 16	0.46	1.15	0.48	1 15	0.50

第三表　緜測指數改算表 (§223)

Minutes.	24°		25°		26°		27°	
	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.
0...	83.46	37.16	82 14	38 30	80.78	39.40	79.39	40 45
2...	83.41	37.20	82.09	38 34	80 74	39.44	79 34	40 49
4...	83.37	37.23	82.05	38.38	80 69	39.47	79.30	40.52
6...	83.33	37.27	82 01	38 41	80.65	39.51	79.25	40 55
8...	83.28	37.31	81 96	38 45	80.60	39.54	79.20	40.59
10...	83.24	37.35	81 92	38.49	80.55	39.58	79.15	40 62
12...	83.20	37.39	81·87	38 53	80.51	39.61	79.11	40 66
14...	83.15	37.43	81 83	38.56	80.46	39.65	79.06	40.69
16...	83.11	37.47	81.78	38.60	80.41	39.69	79.01	40.72
18...	83.07	37.51	81.74	38 64	80.37	39.72	78.96	40 76
20...	83.02	37.54	81.69	38 67	80 32	39.76	78 92	40.79
22...	82.98	37.58	81.65	38.71	80 28	39.79	78.87	40.82
24...	82.93	37.62	81.60	38.75	80 23	39.83	78 82	40 86
26...	82.89	37.66	81.56	38.78	80.18	39.86	78.77	40.89
28...	82.85	37.70	81.51	38.62	80.14	39.90	78.73	40 92
30...	82.80	37.74	81 47	38 86	80.09	39.93	78.68	40.96
32...	82.76	37.77	81.42	38.89	80.04	39 97	78 63	40 99
34...	82.72	37.81	81.38	38 93	80.00	40.00	78 58	41.02
36...	82.67	37.85	81 33	38 97	79.95	40.04	78.54	41 06
38...	82.63	37.89	81.28	39.00	79.90	40 07	78 49	41.09
40...	82.58	37.93	81 24	39.04	79 86	40 11	78 44	41.12
42...	82.54	37.96	81.19	39.08	79.81	40.14	78 39	41 16
44...	82.49	38.00	81.15	39.11	79.76	40.18	78.34	41.19
46...	82.45	38.04	81.10	39.15	79.72	40.21	78.30	41.22
48...	82.41	38.08	81.06	39.18	79.67	40 24	78 25	41.26
50...	82.36	38.11	81.01	39.22	79.62	40 28	78 20	41.29
52...	82.32	38.15	80.97	39.26	79.58	40.31	78.15	41.32
54...	82.27	38.19	80.92	39.29	79.53	40.35	78.10	41.35
56...	82.23	38.23	80.87	39.33	79.48	40.38	78.06	41.39
58...	82.18	38.26	80.83	39.36	79.44	40.42	78.01	41.42
60...	82.14	38.30	80.78	39.40	79.39	40.45	77.96	41.45
$c+f=0.75$	0.68	0.31	0.68	0.32	0.67	0.33	0.66	0.35
$c+f=1.00$	0.91	0.41	0.90	0.43	0.89	0.45	0.89	0.46
$c+f=1.25$	1.14	0.52	1.13	0.54	1.12	0.56	1.11	0.58

Minutes	28°		29°		30°	
	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.
0	77.96	41.45	76.50	42.40	75.00	43.30
2	77.91	41.48	76.45	42.43	74.95	43.33
4	77.86	41.52	76.40	42.46	74.90	43.36
6	77.81	41.55	76.35	42.49	74.85	43.39
8	77.77	41.58	76.30	42.53	74.80	43.42
10	77.71	41.61	76.25	42.56	74.75	43.45
12	77.67	41.65	76.20	42.59	74.70	43.47
14	77.62	41.68	76.15	42.62	74.65	43.50
16	77.57	41.71	76.10	42.65	74.60	43.53
18	77.52	41.74	76.05	42.68	74.55	43.56
20	77.48	41.77	76.00	42.71	74.49	43.59
22	77.42	41.81	75.95	42.74	74.44	43.62
24	77.38	41.84	75.90	42.77	74.39	43.65
26	77.33	41.87	75.85	42.80	74.34	43.67
28	77.28	41.90	75.80	42.83	74.29	43.70
30	77.23	41.93	75.75	42.86	74.24	43.73
32	77.18	41.97	75.70	42.89	74.19	43.76
34	77.13	42.00	75.65	42.92	74.14	43.79
36	77.09	42.03	75.60	42.95	74.09	43.82
38	77.04	42.06	75.55	42.98	74.04	43.84
40	76.99	42.09	75.50	43.01	73.99	43.87
42	76.94	42.12	75.45	43.04	73.93	43.90
44	76.89	42.15	75.40	43.07	73.88	43.93
46	76.84	42.19	75.35	43.10	73.83	43.95
48	76.79	42.22	75.30	43.13	73.78	43.98
50	76.74	42.25	75.25	43.16	73.73	44.01
52	76.69	42.28	75.20	43.18	73.68	44.04
54	76.64	42.31	75.15	43.21	73.63	44.07
56	76.59	42.34	75.10	43.24	73.58	44.09
58	76.55	42.37	75.05	43.27	73.52	44.12
60	76.50	42.40	75.00	43.30	73.47	44.15
$c+f=0.75$	0.66	0.36	0.65	0.37	0.65	0.38
$c+f=1.00$	0.88	0.48	0.87	0.49	0.86	0.51
$c+f=1.25$	1.10	0.60	1.09	0.62	1.08	0.64

N	0	1	2	3	4	5	6	7	8	9
100	00000	00043	00087	00130	00173	00217	00260	00303	00346	00389
1	0432	0475	0518	0561	0604	0647	0689	0732	0775	0817
2	0860	0903	0945	0988	1030	1072	1115	1157	1199	1242
3	1284	1326	1368	1410	1452	1494	1536	1578	1620	1662
4	1703	1745	1787	1828	1870	1912	1953	1995	2036	2078
5	2119	2160	2202	2243	2284	2325	2366	2407	2449	2490
6	2531	2572	2612	2653	2694	2735	2776	2816	2857	2898
7	2938	2979	3019	3060	3100	3141	3181	3222	3262	3302
8	3342	3383	3423	3463	3503	3543	3583	3623	3663	3703
9	3743	3782	3822	3862	3902	3941	3981	4021	4060	4100
110	04139	04179	04218	04258	04297	04336	04376	04415	04454	04493
1	4532	4571	4610	4650	4689	4727	4766	4805	4844	4883
2	4922	4961	4999	5038	5077	5115	5154	5192	5231	5269
3	5308	5346	5385	5423	5461	5500	5538	5576	5614	5652
4	5690	5729	5767	5805	5843	5881	5918	5956	5994	6032
5	6070	6108	6145	6183	6221	6258	6296	6333	6371	6408
6	6446	6483	6521	6558	6595	6633	6670	6707	6744	6781
7	6819	6856	6893	6930	6967	7004	7041	7078	7115	7151
8	7188	7225	7262	7298	7335	7372	7408	7445	7482	7518
9	7555	7591	7628	7664	7700	7737	7773	7809	7846	7882
120	07918	07954	07990	08027	08063	08099	08135	08171	08207	08243
1	8279	8314	8350	8386	8422	8458	8493	8529	8565	8600
2	8636	8672	8707	8743	8778	8814	8849	8884	8920	8955
3	8991	9026	9061	9096	9132	9167	9202	9237	9272	9307
4	9342	9377	9412	9447	9482	9517	9552	9587	9621	9656
5	9691	9726	9760	9795	9830	9864	9899	9934	9968	10003
6	10037	10072	10106	10140	10175	10209	10243	10278	10312	0346
7	0380	0415	0449	0483	0517	0551	0585	0619	0653	0687
8	0721	0755	0789	0823	0857	0890	0924	0958	0992	1025
9	1059	1093	1126	1160	1193	1227	1261	1294	1327	1361
130	11394	11428	11461	11494	11528	11561	11594	11628	11661	11694
1	1727	1760	1793	1826	1860	1893	1926	1959	1992	2024
2	2057	2090	2123	2156	2189	2222	2254	2287	2320	2352
3	2385	2418	2450	2483	2516	2548	2581	2613	2646	2678
4	2710	2743	2775	2808	2840	2872	2905	2937	2969	3001
5	3033	3066	3098	3130	3162	3194	3226	3258	3290	3322
6	3354	3386	3418	3450	3481	3513	3545	3577	3609	3640
7	3672	3704	3735	3767	3799	3830	3862	3893	3925	3956
8	3988	4019	4051	4082	4114	4145	4176	4208	4239	4270
9	4301	4333	4364	4395	4426	4457	4489	4520	4551	4582
140	14613	14644	14675	14706	14737	14768	14799	14829	14860	14891
1	4922	4953	4983	5014	5045	5076	5106	5137	5168	5198
2	5229	5259	5290	5320	5351	5381	5412	5442	5473	5503
3	5534	5564	5594	5625	5655	5685	5715	5746	5776	5806
4	5836	5866	5897	5927	5957	5987	6017	6047	6077	6107
5	6137	6167	6197	6227	6256	6286	6316	6346	6376	6406
6	6435	6465	6495	6524	6554	6584	6613	6643	6673	6702
7	6732	6761	6791	6820	6850	6879	6909	6938	6967	6997
8	7026	7056	7085	7114	7143	7173	7202	7231	7260	7289
9	7319	7348	7377	7406	7435	7464	7493	7522	7551	7580
150	17609	17638	17667	17696	17725	17754	17782	17811	17840	17869

N	0	1	2	3	4	5	6	7	8	9
150	17609	17638	17667	17696	17725	17754	17782	17811	17840	17869
1	7898	7926	7955	7984	8013	8041	8070	8099	8127	8156
2	8184	8213	8241	8270	8298	8327	8355	8384	8412	8441
3	8469	8498	8526	8554	8583	8611	8639	8667	8696	8724
4	8752	8780	8808	8837	8865	8893	8921	8949	8977	9005
5	9033	9061	9089	9117	9145	9173	9201	9229	9257	9285
6	9312	9340	9368	9396	9424	9451	9479	9507	9535	9562
7	9590	9618	9645	9673	9700	9728	9756	9783	9811	9838
8	9866	9893	9921	9948	9976	20003	20030	20058	20085	20112
9	20140	20167	20194	20222	20249	0276	0303	0330	0358	0385
160	20412	20439	20466	20493	20520	20548	20575	20602	20629	20656
1	0683	0710	0737	0763	0790	0817	0844	0871	0898	0925
2	0952	0978	1005	1032	1059	1085	1112	1139	1166	1192
3	1219	1245	1272	1299	1325	1352	1378	1405	1431	1458
4	1484	1511	1537	1564	1590	1617	1643	1669	1696	1722
5	1748	1775	1801	1827	1854	1880	1906	1932	1958	1985
6	2011	2037	2063	2089	2115	2141	2167	2194	2220	2246
7	2272	2298	2324	2350	2376	2401	2427	2453	2479	2505
8	2531	2557	2583	2608	2634	2660	2686	2712	2737	2763
9	2789	2814	2840	2866	2891	2917	2943	2968	2994	3019
170	23045	23070	23096	23121	23147	23172	23198	23223	23249	23274
1	3300	3325	3350	3376	3401	3426	3452	3477	3502	3528
2	3553	3578	3603	3629	3654	3679	3704	3729	3754	3779
3	3805	3830	3855	3880	3905	3930	3955	3980	4005	4030
4	4055	4080	4105	4130	4155	4180	4204	4229	4254	4279
5	4304	4329	4353	4378	4403	4428	4452	4477	4502	4527
6	4551	4576	4601	4625	4650	4674	4699	4724	4748	4773
7	4797	4822	4846	4871	4895	4920	4944	4969	4993	5018
8	5042	5066	5091	5115	5139	5164	5188	5212	5237	5261
9	5285	5310	5334	5358	5382	5406	5431	5455	5479	5503
180	25527	25551	25575	25600	25624	25648	25672	25696	25720	25744
1	5768	5792	5816	5840	5864	5888	5912	5935	5959	5983
2	6007	6031	6055	6079	6102	6126	6150	6174	6198	6221
3	6245	6269	6293	6316	6340	6364	6387	6411	6435	6458
4	6482	6505	6529	6553	6576	6600	6623	6647	6670	6694
5	6717	6741	6764	6788	6811	6834	6858	6881	6905	6928
6	6951	6975	6998	7021	7045	7068	7091	7114	7138	7161
7	7184	7207	7231	7254	7277	7300	7323	7346	7370	7393
8	7416	7439	7462	7485	7508	7531	7554	7577	7600	7623
9	7646	7669	7692	7715	7738	7761	7784	7807	7830	7852
190	27875	27898	27921	27944	27967	27989	28012	28035	28058	28081
1	8103	8126	8149	8171	8194	8217	8240	8262	8285	8307
2	8330	8353	8375	8398	8421	8443	8466	8488	8511	8533
3	8556	8578	8601	8623	8646	8668	8691	8713	8735	8758
4	8780	8803	8825	8847	8870	8892	8914	8937	8959	8981
5	9003	9026	9048	9070	9092	9115	9137	9159	9181	9203
6	9226	9248	9270	9292	9314	9336	9358	9380	9403	9425
7	9447	9469	9491	9513	9535	9557	9579	9601	9623	9645
8	9667	9688	9710	9732	9754	9776	9798	9820	9842	9863
9	9885	9907	9929	9951	9973	9994	30016	30038	30060	30081
200	30103	30125	30146	30168	30190	30211	30233	30255	30276	30298

N	0	1	2	3	4	5	6	7	8	9
200	30103	30125	30146	30168	30190	30211	30233	30255	30276	30298
1	0320	0341	0363	0384	0406	0428	0449	0471	0492	0514
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2	5999	6004	6009	6014	6019	6023	6028	6033	6038	6042
3	6047	6052	6057	6061	6066	6071	6076	6080	6085	6090
4	6095	6099	6104	6109	6114	6118	6123	6128	6133	6137
5	6142	6147	6152	6156	6161	6166	6171	6175	6180	6185
6	6190	6194	6199	6204	6209	6213	6218	6223	6227	6232
7	6237	6242	6246	6251	6256	6261	6265	6270	6275	6280
8	6284	6289	6294	6298	6303	6308	6313	6317	6322	6327
9	6332	6336	6341	6346	6350	6355	6360	6365	6369	6374
920	96379	96384	96388	96393	96398	96402	96407	96412	96417	96421
1	6426	6431	6435	6440	6445	6450	6454	6459	6464	6468
2	6473	6478	6483	6487	6492	6497	6501	6506	6511	6516
3	6520	6525	6530	6534	6539	6544	6548	6553	6558	6562
4	6567	6572	6577	6581	6586	6591	6595	6600	6605	6609
5	6614	6619	6624	6628	6633	6638	6642	6647	6652	6656
6	6661	6666	6670	6675	6680	6685	6689	6694	6699	6703
7	6708	6713	6717	6722	6727	6731	6736	6741	6745	6750
8	6755	6759	6764	6769	6774	6778	6783	6788	6792	6797
9	6802	6806	6811	6816	6820	6825	6830	6834	6839	6844
930	96848	96853	96858	96862	96867	96872	96876	96881	96886	96890
1	6895	6900	6904	6909	6914	6918	6923	6928	6932	6937
2	6942	6946	6951	6956	6960	6965	6970	6974	6979	6984
3	6988	6993	6997	7002	7007	7011	7016	7021	7025	7030
4	7035	7039	7044	7049	7053	7058	7063	7067	7072	7077
5	7081	7086	7090	7095	7100	7104	7109	7114	7118	7123
6	7128	7132	7137	7142	7146	7151	7155	7160	7165	7169
7	7174	7179	7183	7188	7192	7197	7202	7206	7211	7216
8	7220	7225	7230	7234	7239	7243	7248	7253	7257	7262
9	7267	7271	7276	7280	7285	7290	7294	7299	7304	7308
940	97313	97317	97322	97327	97331	97336	97340	97345	97350	97354
1	7359	7364	7368	7373	7377	7382	7387	7391	7396	7400
2	7405	7410	7414	7419	7424	7428	7433	7437	7442	7447
3	7451	7456	7460	7465	7470	7474	7479	7483	7488	7493
4	7497	7502	7506	7511	7516	7520	7525	7529	7534	7539
5	7543	7548	7552	7557	7562	7566	7571	7575	7580	7585
6	7589	7594	7598	7603	7607	7612	7617	7621	7626	7630
7	7635	7640	7644	7649	7653	7658	7663	7667	7672	7676
8	7681	7685	7690	7695	7699	7704	7708	7713	7717	7722
9	7727	7731	7736	7740	7745	7749	7754	7759	7763	7768
950	97772	97777	97782	97786	97791	97795	97800	97804	97809	97813

N	0	1	2	3	4	5	6	7	8	9
950	97772	97777	97782	97786	97791	97795	97800	97804	97809	97813
1	7818	7823	7827	7832	7836	7841	7845	7850	7855	7859
2	7864	7868	7873	7877	7882	7886	7891	7896	7900	7905
3	7909	7914	7918	7923	7928	7932	7937	7941	7946	7950
4	7955	7959	7964	7968	7973	7978	7982	7987	7991	7996
5	8000	8005	8009	8014	8019	8023	8028	8032	8037	8041
6	8046	8050	8055	8059	8064	8068	8073	8078	8082	8087
7	8091	8096	8100	8105	8109	8114	8118	8123	8127	8132
8	8137	8141	8146	8150	8155	8159	8164	8168	8173	8177
9	8182	8186	8191	8195	8200	8204	8209	8214	8218	8223
960	98227	98232	98236	98241	98245	98250	98254	98259	98263	98268
1	8272	8277	8281	8286	8290	8295	8299	8304	8308	8313
2	8318	8322	8327	8331	8336	8340	8345	8349	8354	8358
3	8363	8367	8372	8376	8381	8385	8390	8394	8399	8403
4	8408	8412	8417	8421	8426	8430	8435	8439	8444	8448
5	8453	8457	8462	8466	8471	8475	8480	8484	8489	8493
6	8498	8502	8507	8511	8516	8520	8525	8529	8534	8538
7	8543	8547	8552	8556	8561	8565	8570	8574	8579	8583
8	8588	8592	8597	8601	8605	8610	8614	8619	8623	8628
9	8632	8637	8641	8646	8650	8655	8659	8664	8668	8673
970	98677	98682	98686	98691	98695	98700	98704	98709	98713	98717
1	8722	8726	8731	8735	8740	8744	8749	8753	8758	8762
2	8767	8771	8776	8780	8784	8789	8793	8798	8802	8807
3	8811	8816	8820	8825	8829	8834	8838	8843	8847	8851
4	8856	8860	8865	8869	8874	8878	8883	8887	8892	8896
5	8900	8905	8909	8914	8918	8923	8927	8932	8936	8941
6	8945	8949	8954	8958	8963	8967	8972	8976	8981	8985
7	8989	8994	8998	9003	9007	9012	9016	9021	9025	9029
8	9034	9038	9043	9047	9052	9056	9061	9065	9069	9074
9	9078	9083	9087	9092	9096	9100	9105	9109	9114	9118
980	99123	99127	99131	99136	99140	99145	99149	99154	99158	99162
1	9167	9171	9176	9180	9185	9189	9193	9198	9202	9207
2	9211	9216	9220	9224	9229	9233	9238	9242	9247	9251
3	9255	9260	9264	9269	9273	9277	9282	9286	9291	9295
4	9300	9304	9308	9313	9317	9322	9326	9330	9335	9339
5	9344	9348	9352	9357	9361	9366	9370	9374	9379	9383
6	9388	9392	9396	9401	9405	9410	9414	9419	9423	9427
7	9432	9436	9441	9445	9449	9454	9458	9463	9467	9471
8	9476	9480	9484	9489	9493	9498	9502	9506	9511	9516
9	9520	9524	9528	9533	9537	9542	9546	9550	9555	9559
990	99564	99568	99572	99577	99581	99585	99590	99594	99599	99603
1	9607	9612	9616	9621	9625	9629	9634	9638	9642	9647
2	9651	9656	9660	9664	9669	9673	9677	9682	9686	9691
3	9695	9699	9704	9708	9712	9717	9721	9726	9730	9734
4	9739	9743	9747	9752	9756	9760	9765	9769	9774	9778
5	9782	9787	9791	9795	9800	9804	9808	9813	9817	9822
6	9826	9830	9835	9839	9843	9848	9852	9856	9861	9865
7	9870	9874	9878	9883	9887	9891	9896	9900	9904	9909
8	9913	9917	9922	9926	9930	9935	9939	9944	9948	9952
9	9957	9961	9965	9970	9974	9978	9983	9987	9991	9996
1000	00000	00004	00009	00013	00017	00022	00026	00030	00035	00039

角在 0° 與 2° 之間之正弦，正切及餘切，或角在 88° 與 90° 之間之餘弦，對於秒數若用普通之表差間插求之，難期精確；欲求精確者可用式如下：

(I) 由角 A 求 $\log\sin A$：

$$\log\sin A = \log A\text{(秒數)} + \text{正弦之 } (q-l)^*$$

(II) 由 $\log\sin A$ 求角 A：

$$\log A\text{(秒數)} = \log\sin A - \text{正弦之 } (q-l)^*$$

例1 令求 $\log\sin 0°\ 36'\ 25''$！

$\log A$ 角之秒數 (2185″)	=3.339451
對於 0° 36′ 正弦之 $(q-l)^*$	=4.685567
$\log\sin 0°\ 36'\ 25''$	=8.025018

例2 $\log\sin A = 8.096340$，令求 A 角！

$\log\sin A$	=8.096340
正弦之 $(q-l)^*$	=4.685564
$\log A$ (秒數)	=3.410776

A (秒數)=2575′ 或 $A = 0°\ 42'\ 55''$

(III) 由角 A 求 $\log\tan A$：

$$\log\tan A = \log A\text{(秒數)} + \text{正切之 } (q-l)^*$$

(IV) 由 $\log\tan A$ 求角 A：

$$\log A\text{(秒數)} = \log\tan A - \text{正切之 } (q-l)^*$$

例3 令求 $\log\tan 0°\ 36'\ 25''$！

$\log A$ 角之秒數 (2185″)	=3.339451
又於 0° 36′ 正切之 $(q-l)^*$	=4.685591
$\log\tan 0°\ 36'\ 25''$	=8.025042

例4 $\log\tan A = 8.220000$，令求 A 角！

$\log\tan A$	=8.220000
正切之 $(q-l)^*$	=4.685615
$\log A$ (秒數)	=3.534385

A (秒數)=3423″ 或 $A = 0°\ 57'\ 03''$

(V) 由角 A 求 $\log\cot A$：

$$\log\cot A = (q+l)^* - \log A\text{(秒數)}$$

(VI) 由 $\log\cot A$ 求角 A：

$$\log A\text{(秒數)} = (q+l)^* - \log\cot A$$

例5 令求 $\log\cot 0°\ 56'\ 12''$！

$(q+l)^*$	=15.314387
$\log A$ 角之秒數 (3372″)	= 3.527888
$\log\cot A$	=11.786499

例6 $\log\cot A = 12.000000$，令求 A 角！

$(q+l)^*$	=15.314411
$\log\cot A$	=12.000000
$\log A$ (秒數)	= 3.314411

A (秒數)=2063″ 或 $A = 0°\ 34'\ 23''$

餘弦——角在 88° 與 90° 之餘弦，可代之以 sin (90−該角)，按照上法求之。

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*對於 2° 以內之一切角度，$(q-l)$ 之首先四位概爲 4.685，$(q+l)$ 之首先五位概爲 15.314；末後三位則於 $(q-l)$ 或 $(q+l)$ 欄內，於與 A 最相近似之處求之。又 $(q-l)$ 欄內分二欄：左邊者乃用於正弦，右邊者乃用於正切。

0°		Sine.	$q-l$		Tang.	Cotang.	$q+l$	D1″	Cosine.	179°
″	′		4.685				15.314			′
0	0	Inf. neg.	575	575	Inf. neg.	Inf. pos.	425		ten	60
60	1	6.463726	575	575	6.463726	13.536274	425		ten	59
120	2	.764756	575	575	.764756	.235244	425		ten	58
180	3	6.940847	575	575	6.940847	13.059153	425		ten	57
240	4	7.065786	575	575	7.065786	12.934214	425		ten	56
300	5	.162696	575	575	.162696	.837304	425		ten	55
360	6	.241877	575	575	.241878	.758122	425	.02	9.999999	54
420	7	.308824	575	575	.308825	.691175	425	.00	.999999	53
480	8	.366816	574	576	.366817	.633183	424	.00	.999999	52
540	9	.417968	574	576	.417970	.582030	424	.00	.999999	51
600	10	.463726	574	576	.463727	.536273	424	.02	.999998	50
660	11	7.505118	574	576	7.505120	12.494880	424	.00	9.999998	49
720	12	.542906	574	577	.542909	.457091	423	.02	.999997	48
780	13	.577668	574	577	.577672	.422328	423	.00	.999997	47
840	14	.609853	574	577	.609857	.390143	423	.02	.999996	46
900	15	.639816	573	578	.639820	.360180	422	.00	.999996	45
960	16	.667845	573	578	.667849	.332151	422	.02	.999995	44
1020	17	.694173	573	578	.694179	.305821	422	.00	.999995	43
1080	18	.718997	573	579	.719003	.280997	421	.02	.999994	42
1140	19	.742478	573	579	.742484	.257516	421	.02	.999993	41
1200	20	.764754	572	580	.764761	.235239	420	.00	.999993	40
1260	21	7.785943	572	580	7.785951	12.214049	420	.02	9.999992	39
1320	22	.806149	572	581	.806155	.193845	419	.02	.999991	38
1380	23	.825451	572	581	.825460	.174540	419	.02	.999990	37
1440	24	.843934	571	582	.843944	.156056	418	.02	.999989	36
1500	25	.861662	571	583	.861674	.138326	417	.00	.999989	35
1560	26	.878695	571	583	.878708	.121292	417	.02	.999988	34
1620	27	.895085	570	584	.895099	.104901	416	.02	.999987	33
1680	28	.910879	570	584	.910894	.089106	416	.02	.999986	32
1740	29	.926119	570	585	.926134	.073866	415	.02	.999985	31
1800	30	.940842	569	586	.940858	.059142	414	.03	.999983	30
1860	31	7.955082	569	587	7.955100	12.044900	413	.02	9.999982	29
1920	32	.968870	569	587	.968889	.031111	413	.02	.999981	28
1980	33	.982233	568	588	.982253	.017747	412	.02	.999980	27
2040	34	7.995198	568	589	7.995219	12.004781	411	.02	.999979	26
2100	35	8.007787	567	590	8.007809	11.992191	410	.03	.999977	25
2160	36	.020021	567	591	.020044	.979956	409	.02	.999976	24
2220	37	.031919	566	592	.031945	.968055	408	.02	.999975	23
2280	38	.043501	566	593	.043527	.956473	407	.03	.999973	22
2340	39	.054781	566	593	.054809	.945191	407	.02	.999972	21
2400	40	.065776	565	594	.065806	.934194	406	.02	.999971	20
2460	41	8.076500	565	595	8.076531	11.923469	405	.03	9.999969	19
2520	42	.086965	564	596	.086997	.913003	404	.02	.999968	18
2580	43	.097183	564	598	.097217	.902783	402	.03	.999966	17
2640	44	.107167	563	599	.107203	.892797	401	.03	.999964	16
2700	45	.116926	562	600	.116963	.883037	400	.02	.999963	15
2760	46	.126471	562	601	.126510	.873490	399	.03	.999961	14
2820	47	.135810	561	602	.135851	.864149	398	.03	.999959	13
2880	48	.144953	561	603	.144996	.855004	397	.02	.999958	12
2940	49	.153907	560	604	.153952	.846048	396	.03	.999956	11
3000	50	.162681	560	605	.162727	.837273	395	.03	.999954	10
3060	51	8.171280	559	607	8.171328	11.828672	393	.03	9.999952	9
3120	52	.179713	558	608	.179763	.820237	392	.03	.999950	8
3180	53	.187985	558	609	.188036	.811964	391	.03	.999948	7
3240	54	.196102	557	611	.196156	.803844	389	.03	.999946	6
3300	55	.204070	556	612	.204126	.795874	388	.03	.999944	5
3360	56	.211895	556	613	.211953	.788047	387	.03	.999942	4
3420	57	.219581	555	615	.219641	.780359	385	.03	.999940	3
3480	58	.227134	554	616	.227195	.772805	384	.03	.999938	2
3540	59	.234557	554	618	.234621	.765379	382	.03	.999936	1
3600	60	8.241855	553	619	8.241921	11.758079	381	.03	9.999934	0
″	′		4.685				15.314			′
90°		Cosine.	$q-l$		Cotang.	Tang.	$q+l$	D1″	Sine.	89°

1°	′	Sine.	q−l		Tang.	Cotang.	q+l	D1″	Cosine.	178°
″	′		4.685				15.314			′
3600	0	8.241855	553	619	8.241921	11.758079	381		9.999934	60
3660	1	.249033	552	620	.249102	.750898	380	.03	.999932	59
3720	2	.256094	551	622	.256165	.743835	378	.03	.999929	58
3780	3	.263042	551	623	.263115	.736885	377	.03	.999927	57
3840	4	.269881	550	625	.269955	.730044	375	.05	.999925	56
3900	5	.276614	549	627	.276691	.723309	373	.03	.999922	55
3960	6	.283243	548	628	.283323	.716677	372	.03	.999920	54
4020	7	.289773	547	630	.289856	.710144	370	.05	.999918	53
4080	8	.296207	546	632	.296292	.703708	368	.03	.999915	52
4140	9	.302546	546	633	.302634	.697366	367	.05	.999913	51
4200	10	.308794	545	635	.308884	.691116	365	.05	.999910	50
4260	11	8.314954	544	637	8.315046	11.684954	363	.05	9.999907	49
4320	12	.321027	543	638	.321122	.678878	362	.03	.999905	48
4380	13	.327016	542	640	.327114	.672886	360	.05	.999902	47
4440	14	.332924	541	642	.333025	.666975	358	.03	.999899	46
4500	15	.338753	540	644	.338856	.661144	356	.05	.999897	45
4560	16	.344504	539	646	.344610	.655390	354	.05	.999894	44
4620	17	.350181	539	648	.350289	.649711	352	.05	.999891	43
4680	18	.355783	538	649	.355895	.644105	351	.05	.999888	42
4740	19	.361315	537	651	.361430	.638570	349	.05	.999885	41
4800	20	.366777	536	653	.366895	.633105	347	.05	.999882	40
4860	21	8.372171	535	655	8.372292	11.627708	345	.05	9.999879	39
4920	22	.377499	534	657	.377622	.622378	343	.05	.999876	38
4980	23	.382762	533	659	.382889	.617111	341	.05	.999873	37
5040	24	.387962	532	661	.388092	.611908	339	.05	.999870	36
5100	25	.393101	531	663	.393234	.606766	337	.05	.999867	35
5160	26	.398179	530	666	.398315	.601685	334	.05	.999864	34
5220	27	.403199	529	668	.403338	.596662	332	.05	.999861	33
5280	28	.408161	527	670	.408304	.591696	330	.07	.999858	32
5340	29	.413068	526	672	.413213	.586787	328	.05	.999854	31
5400	30	.417919	525	674	.418068	.581932	326	.05	.999851	30
5460	31	8.422717	524	676	8.422869	11.577131	324	.05	9.999848	29
5520	32	.427462	523	679	.427618	.572382	321	.07	.999844	28
5580	33	.432156	522	681	.432315	.567685	319	.05	.999841	27
5640	34	.436800	521	683	.436962	.563038	317	.05	.999838	26
5700	35	.441394	520	685	.441560	.558440	315	.07	.999834	25
5760	36	.445941	518	688	.446110	.553890	312	.07	.999831	24
5820	37	.450440	517	690	.450613	.549387	310	.05	.999827	23
5880	38	.454893	516	693	.455070	.544930	307	.07	.999824	22
5940	39	.459301	515	695	.459481	.540519	305	.07	.999820	21
6000	40	.463665	514	697	.463849	.536151	303	.07	.999816	20
6060	41	8.467985	512	700	8.468172	11.531828	300	.05	9.999813	19
6120	42	.472263	511	702	.472454	.527546	298	.07	.999809	18
6180	43	.476498	510	705	.476693	.523307	295	.07	.999805	17
6240	44	.480693	509	707	.480892	.519108	293	.07	.999801	16
6300	45	.484848	507	710	.485050	.514950	290	.07	.999797	15
6360	46	.488963	506	713	.489170	.510830	287	.07	.999794	14
6420	47	.493040	505	715	.493250	.506750	285	.07	.999790	13
6480	48	.497078	503	718	.497293	.502707	282	.07	.999786	12
6540	49	.501080	502	720	.501298	.498702	280	.07	.999782	11
6600	50	.505045	501	723	.505267	.494733	277	.07	.999778	10
6660	51	8.508974	499	726	8.509200	11.490800	274	.07	9.999774	9
6720	52	.512867	498	729	.513098	.486902	271	.08	.999769	8
6780	53	.516726	497	731	.516961	.483039	269	.07	.999765	7
6840	54	.520551	495	734	.520790	.479210	266	.07	.999761	6
6900	55	.524343	494	737	.524588	.475414	263	.07	.999757	5
6960	56	.528102	492	740	.528349	.471651	260	.07	.999753	4
7020	57	.531828	491	743	.532080	.467920	257	.08	.999748	3
7080	58	.535523	490	745	.535779	.464221	255	.07	.999744	2
7140	59	.539186	488	748	.539447	.460553	252	.07	.999740	1
7200	60	8.542819	487	751	8.543084	11.456916	249	.08	9.999735	0
″	′		4.685				15.314			′
91°		Cosine.	q−l		Cotang.	Tang.	q+l	D1″	Sine.	88°

2°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	177°
0'	8.542819	60.05	9.999735	.07	8.543084	60.12	11.456916	60'
1	.546422	59.55	.999731	.08	.546691	59.62	.453309	59
2	.549995	59.07	.999726	.07	.550268	59.15	.449732	58
3	.553539	58.58	.999722	.08	.553817	58.65	.446183	57
4	.557054	58.10	.999717	.07	.557336	58.20	.442664	56
5	.560540	57.65	.999713	.08	.560828	57.72	.439172	55
6	.563999	57.20	.999708	.07	.564291	57.27	.435709	54
7	.567431	56.75	.999704	.08	.567727	56.83	.432273	53
8	.570836	56.30	.999699	.08	.571137	56.38	.428863	52
9	.574214	55.87	.999694	.08	.574520	55.95	.425480	51
10	.577566	55.43	.999689	.07	.577877	55.52	.422123	50
11	8.580892	55.02	9.999685	.08	8.581208	55.10	11.418792	49
12	.584193	54.60	.999680	.08	.584514	54.68	.415486	48
13	.587469	54.20	.999675	.08	.587795	54.27	.412205	47
14	.590721	53.78	.999670	.08	.591051	53.87	.408949	46
15	.593948	53.40	.999665	.08	.594283	53.48	.405717	45
16	.597152	53.00	.999660	.08	.597492	53.08	.402508	44
17	.600332	52.62	.999655	.08	.600677	52.70	.399323	43
18	.603489	52.23	.999650	.08	.603839	52.32	.396161	42
19	.606623	51.85	.999645	.08	.606978	51.93	.393022	41
20	.609734	51.48	.999640	.08	.610094	51.58	.389906	40
21	8.612823	51.13	9.999635	.10	8.613189	51.22	11.386811	39
22	.615891	50.77	.999629	.08	.616262	50.85	.383738	38
23	.618937	50.42	.999624	.08	.619313	50.50	.380687	37
24	.621962	50.05	.999619	.08	.622343	50.15	.377657	36
25	.624965	49.72	.999614	.10	.625352	49.80	.374648	35
26	.627948	49.38	.999608	.08	.628340	49.47	.371660	34
27	.630911	49.05	.999603	.10	.631308	49.13	.368692	33
28	.633854	48.70	.999597	.08	.634256	48.80	.365744	32
29	.636776	48.40	.999592	.10	.637184	48.48	.362816	31
30	.639680	48.05	.999586	.08	.640093	48.15	.359907	30
31	8.642563	47.75	9.999581	.10	8.642982	47.85	11.357018	29
32	.645428	47.43	.999575	.08	.645853	47.52	.354147	28
33	.648274	47.13	.999570	.10	.648704	47.22	.351296	27
34	.651102	46.82	.999564	.10	.651537	46.92	.348463	26
35	.653911	46.52	.999558	.08	.654352	46.62	.345648	25
36	.656702	46.22	.999553	.10	.657149	46.32	.342851	24
37	.659475	45.92	.999547	.10	.659928	46.02	.340072	23
38	.662230	45.63	.999541	.10	.662689	45.73	.337311	22
39	.664968	45.35	.999535	.10	.665433	45.45	.334567	21
40	.667689	45.07	.999529	.08	.668160	45.17	.331840	20
41	8.670393	44.78	9.999524	.10	8.670870	44.88	11.329130	19
42	.673080	44.52	.999518	.10	.673563	44.60	.326437	18
43	.675751	44.23	.999512	.10	.676239	44.35	.323761	17
44	.678405	43.97	.999506	.10	.678899	44.07	.321109	16
45	.681043	43.70	.999500	.12	.681544	43.80	.318456	15
46	.683665	43.45	.999493	.10	.684172	43.53	.315828	14
47	.686272	43.18	.999487	.10	.686784	43.28	.313216	13
48	.688863	42.92	.999481	.10	.689381	43.03	.310619	12
49	.691438	42.67	.999475	.10	.691963	42.77	.308037	11
50	.693998	42.42	.999469	.10	.694529	42.53	.305471	10
51	8.696543	42.17	9.999463	.12	8.697081	42.27	11.302919	9
52	.699073	41.93	.999456	.10	.699617	42.03	.300383	8
53	.701589	41.68	.999450	.12	.702139	41.78	.297861	7
54	.704090	41.45	.999443	.10	.704646	41.57	.295354	6
55	.706577	41.20	.999437	.10	.707140	41.30	.292860	5
56	.709049	40.97	.999431	.12	.709618	41.08	.290382	4
57	.711507	40.75	.999424	.10	.712083	40.85	.287917	3
58	.713952	40.52	.999418	.12	.714534	40.64	.285466	2
59	.716383	40.28	.999411	.12	.716972	40.40	.283028	1
60'	8.718800		9.999404		8.719396		11.280604	0'
92°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	87°

3°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	176°
0'	8.718800	40.07	9.999404	.10	8.719396	40.17	11.280604	60'
1	.721204	39.85	.999398	.12	.721806	39.97	.278194	59
2	.723595	39.62	.999391	.12	.724204	39.73	.275796	58
3	.725972	39.43	.999384	.10	.726588	39.52	.273412	57
4	.728337	39.18	.999378	.12	.728959	39.30	.271041	56
5	.730688	38.96	.999371	.12	.731317	39.10	.268683	55
6	.733027	38.78	.999364	.12	.733663	38.88	.266337	54
7	.735354	38.55	.999357	.12	.735996	38.68	.264004	53
8	.737667	38.37	.999350	.12	.738317	38.48	.261683	52
9	.739969	38.17	.999343	.12	.740626	38.27	.259374	51
10	.742259	37.95	.999336	.12	.742922	38.08	.257078	50
11	8.744536	37.77	9.999329	.12	8.745207	37.87	11.254793	49
12	.746802	37.55	.999322	.12	.747479	37.68	.252521	48
13	.749055	37.37	.999315	.13	.749740	37.48	.250260	47
14	.751297	37.18	.999308	.12	.751989	37.30	.248011	46
15	.753528	36.98	.999301	.12	.754227	37.10	.245773	45
16	.755747	36.80	.999294	.12	.756453	36.92	.243547	44
17	.757955	36.60	.999287	.13	.758668	36.73	.241332	43
18	.760151	36.43	.999279	.12	.760872	36.55	.239128	42
19	.762337	36.23	.999272	.13	.763065	36.35	.236935	41
20	.764511	36.07	.999265	.13	.765246	36.18	.234754	40
21	8.766675	35.88	9.999257	.13	8.767417	36.02	11.232583	39
22	.768828	35.70	.999250	.13	.769578	35.82	.230422	38
23	.770970	35.52	.999242	.13	.771727	35.65	.228273	37
24	.773101	35.37	.999235	.13	.773866	35.48	.226134	36
25	.775223	35.17	.999227	.13	.775995	35.32	.224005	35
26	.777333	35.03	.999220	.13	.778114	35.13	.221886	34
27	.779434	34.83	.999212	.13	.780222	34.97	.219778	33
28	.781524	34.68	.999205	.13	.782320	34.80	.217680	32
29	.783605	34.50	.999197	.13	.784408	34.63	.215592	31
30	.785675	34.35	.999180	.13	.786488	34.47	.213514	30
31	8.787736	34.18	9.999181	.13	8.788554	34.32	11.211446	29
32	.789787	34.02	.999174	.13	.790613	34.15	.209387	28
33	.791828	33.85	.999166	.13	.792662	33.98	.207338	27
34	.793859	33.70	.999158	.13	.794701	33.83	.205299	26
35	.795881	33.55	.999150	.13	.796731	33.68	.203269	25
36	.797894	33.38	.999142	.13	.798752	33.52	.201248	24
37	.799897	33.25	.999134	.13	.800763	33.37	.199237	23
38	.801892	33.07	.999126	.13	.802765	33.22	.197235	22
39	.803876	32.93	.999118	.13	.804758	33.07	.195242	21
40	.805852	32.78	.999110	.15	.806742	32.92	.193258	20
41	8.807819	32.63	9.999102	.13	8.808717	32.77	11.191283	19
42	.809777	32.48	.999094	.13	.810683	32.63	.189317	18
43	.811723	32.35	.999086	.13	.812641	32.47	.187359	17
44	.813667	32.20	.999077	.13	.814589	32.33	.185411	16
45	.815599	32.05	.999069	.15	.816529	32.20	.183471	15
46	.817522	31.90	.999061	.13	.818461	32.05	.181539	14
47	.819436	31.78	.999053	.15	.820384	31.90	.179616	13
48	.821343	31.63	.999044	.13	.822298	31.78	.177702	12
49	.823240	31.50	.999036	.15	.824205	31.63	.175795	11
50	.825130	31.35	.999027	.13	.826103	31.48	.173897	10
51	8.827011	31.22	9.999019	.15	8.827992	31.37	11.172008	9
52	.828884	31.08	.999010	.13	.829874	31.23	.170126	8
53	.830749	30.97	.999002	.15	.831748	31.08	.168252	7
54	.832607	30.82	.998993	.15	.833613	30.97	.166387	6
55	.834456	30.68	.998984	.13	.835471	30.83	.164529	5
56	.836297	30.55	.998976	.15	.837321	30.72	.162679	4
57	.838130	30.43	.998967	.15	.839163	30.58	.160837	3
58	.839956	30.30	.998958	.13	.840998	30.45	.159002	2
59	.841774	30.18	.998950	.15	.842825	30.32	.157175	1
60'	8.843585		9.998941	.15	8.844644		11.155356	0'
93°	Cosine.	D 1'.	Sine.	D. 1'.	Cotang.	D. 1'.	Tang.	86°

4°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	175°
0′	8.843585	30.03	9.998941	.15	8.844644	30.18	11.155356	60′
1	.845387	29.93	.998932	.15	.846455	30.08	.153545	59
2	.847183	29.80	.998923	.15	.848260	29.95	.151740	58
3	.848971	29.67	.998914	.15	.850057	29.82	.149943	57
4	.850751	29.57	.998905	.15	.851848	29.70	.148154	56
5	.852525	29.43	.998896	.15	.853628	29.58	.146372	55
6	.854291	29.30	.998887	.15	.855403	29.47	.144597	54
7	.856049	29.20	.998878	.15	.857171	29.35	.142829	53
8	.857801	29.08	.998869	.15	.858933	29.23	.141068	52
9	.859546	28.98	.998860	.15	.860686	29.12	.139314	51
10	.861283	28.85	.998851	.17	.862433	29.00	.137567	50
11	8.863014	28 73	9.998841	.15	8.864173	28.88	11.135827	49
12	.864738	28.62	.998832	.15	.865906	28.77	.134094	48
13	.866455	28.50	.998823	.17	.867632	28.65	.132368	47
14	.868165	28.38	.998813	.15	.869351	28.55	.130649	46
15	.869868	28.28	.998804	.15	.871064	28.43	.128936	45
16	.871565	28.17	.998795	.17	.872770	28.32	.127230	44
17	.873255	28.05	.998785	.15	.874469	28.22	.125531	43
18	.874938	27.95	.998776	.17	.876162	28.12	.123838	42
19	.876615	27.83	.998766	.17	.877849	28.00	.122151	41
20	.878285	27.73	.998757	.17	.879529	27.88	.120471	40
21	8.879949	27.68	9.998747	.15	8.881202	27.78	11.118798	39
22	.881607	27.52	.998738	.17	.882868	27.68	.117131	38
23	.883258	27.42	.998728	.17	.884530	27.58	.115470	37
24	.884903	27.32	.998718	.17	.886185	27.47	.113815	36
25	.886542	27.20	.998708	.17	.887833	27.38	.112167	35
26	.888174	27.12	.998699	.15	.889476	27.27	.110524	34
27	.889801	27.00	.998689	.17	.891112	27.17	.108888	33
28	.891421	26.90	.998679	.17	.892742	27 07	.107258	32
29	.893035	26.80	.998669	.17	.894366	26.97	.105634	31
30	.894643	26.72	.998659	.17	.895984	26.87	.104016	30
31	8.896246	26.60	9.998649	.17	8.897596	26.78	11 102404	29
32	.897842	26.50	.998639	.17	.899202	26.67	.100797	28
33	.899432	26.42	.998629	.17	.900803	26.58	.099197	27
34	.901017	26.32	.998619	.17	.902398	26.48	.097602	26
35	.902596	26 22	.998609	.17	.903987	26 38	.096013	25
36	.904169	[illegible]	.998599	.17	.905570	26.28	.094430	24
37	.905735	26.12	.998589	.17	.907147	26.28	.092853	23
38	.907297	26.02	.998578	.18	.908719	26.20	.091281	22
39	.908853	25 93	.998568	.17	.910285	26.10	.089715	21
40	.910404	25.85	.998558	.17	.911846	26.02	.088154	20
41	8.911949	25.75	9.998548	.18	8.913401	25.92	11.086599	19
42	.913488	25.65	.998537	.17	.914951	25.83	.085049	18
43	.915022	25.57	.998527	.18	.916495	25.73	.083505	17
44	.916550	25 47	.998516	.17	.918034	25.65	.081966	16
45	.918073	25.38	.998506	.18	.919568	25.57	.080432	15
46	.919591	25.30	.998495	.18	.921096	25.47	.078904	14
47	.921103	25 20	.998485	.17	.922619	25.38	.077381	13
48	.922610	25.12	.998474	.18	.924136	25.28	.075864	12
49	.924112	25.03	.998464	.17	.925649	25 22	.074351	11
50	.925609	24.95	.998453	.18	.927156	25 12	.072844	10
51	8.927100	24.85	9.998442	.18	8.928658	25.03	11.071342	9
52	.928587	24.78	.998431	.17	.930155	24.95	.069845	8
53	.930068	24.68	.998421	.18	.931647	24 87	.068353	7
54	.931544	24.60	.998410	.18	.933134	24.78	.066866	6
55	.933015	24.52	.998399	.18	.934616	24.70	.065384	5
56	.934481	24.43	.998388	.18	.936093	24.62	.063907	4
57	.935943	24.35	.998377	.18	.937565	24.53	.062435	3
58	.937398	24.27	.998366	.18	.939032	24.45	.060968	2
59	.938850	24.20	.998355	.18	.940494	24.37	.059506	1
60′	8.940298	24.10	9.998344	.18	8.941952	24.30	11.058048	0′
94°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1"	Tang.	85°

5°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	174°
0′	8.940296	24.03	9.998344	.18	8.941952	24.20	11.058048	60′
1	.941738	23.93	.998333	.18	.943404	24.13	.056596	59
2	.943174	23.87	.998322	.18	.944852	24.05	.055148	58
3	.944606	23.80	.998311	.18	.946295	23 98	.053705	57
4	.946034	23.70	.998300	.18	.947734	23.90	.052266	56
5	.947456	23.63	.998289	.20	.949168	23.82	.050832	55
6	.948874	23.55	.998277	.18	.950597	23 73	.049403	54
7	.950287	23.48	.998266	.18	.952021	23.67	.047979	53
8	.951696	23.40	.998255	.20	.953441	23 58	.046559	52
9	.953100	23.32	.998243	.18	.954856	23.52	.045144	51
10	.954499	23.25	.998232	.20	.956267	23.45	.043733	50
11	8.955894	23.17	9.998220	.18	8.957674	23.35	11.042326	49
12	.957284	23.10	.998209	.20	.959075	23.30	.040925	48
13	.958670	23.03	.998197	.18	.960473	23.22	.039527	47
14	.960052	22.95	.998186	.20	.961866	23 15	.038134	46
15	.961429	22.87	.998174	.18	.963255	23.07	.036745	45
16	.962801	22 87	.998163	.20	.964639	23.00	.035361	44
17	.964170	22 82	.998151	.20	.966019	22.93	.033981	43
18	.965534	22 73	.998139	.20	.967394	22.87	.032606	42
19	.966893	22 65	.998128	.18	.968766	22 78	.031234	41
20	.968249	22.60	.998116	.20	.970133	22.72	.029867	40
21	8 969600	22.52	9.998104	.20	8 971496	22 65	11.028504	39
22	.970947	22.45	.998092	.20	.972855	22.57	.027145	38
23	.972289	22.37	.998080	.20	.974209	22.52	.025791	37
24	.973628	22 32	.998068	.20	.975560	22 43	.024440	36
25	.974962	22.23	.998056	.20	.976906	22.37	.023094	35
26	.976293	22.18	.998044	.20	.978248	22.30	.021752	34
27	.977619	22.10	.998032	.20	.979586	22.25	.020414	33
28	.978941	22 03	.998020	.20	.980921	22.17	.019079	32
29	.980259	21 97	.998008	.20	.982251	22.10	.017749	31
30	.981573	21.90	.997996	.20	.983577	22.03	.016423	30
31	8.982883	21.83	9.997984	.20	8 984899	21.97	11.015101	29
32	.984189	21.77	.997972	.22	.986217	21.92	.013783	28
33	.985491	21.70	.997959	.20	.987532	21.83	.012468	27
34	.986789	21.63	.997947	.20	.988842	21 78	.011158	26
35	.988083	21.57	.997935	.22	.990149	21 70	.009851	25
36	.989374	21.52	.997922	.22	.991451	21.65	.008549	24
37	.990660	21.43	.997910	.20	.992750	21.58	.007250	23
38	.991943	21 38	.997897	.20	.994045	21.53	.005955	22
39	.993222	21 32	.997885	.22	.995337	21.45	.004663	21
40	.994497	21 25	.997872	.20	.996624	21.40	.003376	20
41	8 995768	21 19	9.997860	.22	8.997908	21.33	11.002092	19
42	.997036	21.13	.997847	.22	8.999188	21.28	11.000812	18
43	.998299	21.05	.997835	.22	9.000465	21.22	10.999535	17
44	8.999560	21.02	.997822	.22	.001738	21.15	.998262	16
45	9 000816	20 93	.997809	.22	.003007	21.15	.996993	15
46	.002069	20.88	.997797	.20	.004272	21 08	.995728	14
47	.003318	20.82	.997784	.23	.005534	21.03	.994466	13
48	.004563	20.75	.997771	.22	.006792	20.97	.993208	12
49	.005805	20 70	.997758	.22	.008047	20.92	.991953	11
50	.007044	20 65	.997745	.22	.009298	20.85	.990702	10
51	9 008278	20 57	9.997732	.22	9.010546	20.80	10.989454	9
52	.009510	20 53	.997719	.22	.011790	20.73	.988210	8
53	.010737	20.45	.997706	.22	.013031	20 68	.986969	7
54	.011962	20.42	.997693	.22	.014268	20.62	.985732	6
55	.013182	20.33	.997680	.22	.015502	20.57	.984498	5
56	.014400	20.30	.997667	.23	.016732	20.50	.983268	4
57	.015613	20.22	.997654	.22	.017959	20.45	.982041	3
58	.016824	20 18	.997641	.22	.019183	20 40	.980817	2
59	.018031	20.12	.997628	.22	.020403	20.33	.979597	1
60′	9 019235	20 07	9.997614	.23	9.021620	20.28	10.978380	0′
95°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	84°

6°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	173°
0′	9.019235	20.00	9.997614	.22	9.021620	20.23	10.978380	60′
1	.020435	19.95	.997601	.22	.022834	20.17	.977166	59
2	.021632	19.88	.997588	.23	.024044	20.12	.975956	58
3	.022825	19.85	.997574	.22	.025251	20.07	.974749	57
4	.024016	19.78	.997561	.23	.026455	20.00	.973545	56
5	.025203	19.73	.997547	.23	.027655	19.95	.972345	55
6	.026386	19.68	.997534	.23	.028852	19.90	.971148	54
7	.027567	19.62	.997520	.22	.030046	19.85	.969954	53
8	.028744	19.57	.997507	.23	.031237	19.80	.968763	52
9	.029918	19.52	.997493	.22	.032425	19.73	.967575	51
10	.031089	19.47	.997480	.23	.033609	19.70	.966391	50
11	9.032257	19.40	9.997466	.23	9.034791	19.63	10.965209	49
12	.033421	19.35	.997452	.22	.035969	19.58	.964031	48
13	.034582	19.32	.997439	.23	.037144	19.53	.962856	47
14	.035741	19.25	.997425	.23	.038316	19.48	.961684	46
15	.036896	19.20	.997411	.23	.039485	19.43	.960515	45
16	.038048	19.15	.997397	.23	.040651	19.37	.959349	44
17	.039197	19.08	.997383	.23	.041813	19.33	.958187	43
18	.040342	19.05	.997369	.23	.042973	19.28	.957027	42
19	.041485	19.00	.997355	.23	.044130	19.23	.955870	41
20	.042625	18.95	.997341	.23	.045284	19.17	.954716	40
21	9.043762	18.88	9.997327	.23	9.046434	19.13	10.953566	39
22	.044895	18.85	.997313	.23	.047582	19.08	.952418	38
23	.046026	18.80	.997299	.23	.048727	19.03	.951273	37
24	.047154	18.75	.997285	.23	.049869	18.98	.950131	36
25	.048279	18.68	.997271	.23	.051008	18.93	.948992	35
26	.049400	18.65	.997257	.23	.052144	18.88	.947856	34
27	.050519	18.60	.997242	.23	.053277	18.83	.946723	33
28	.051635	18.57	.997228	.23	.054407	18.80	.945593	32
29	.052749	18.50	.997214	.23	.055535	18.73	.944465	31
30	.053859	18.45	.997199	.23	.056659	18.70	.943341	30
31	9.054966	18.42	9.997185	.23	9.057781	18.65	10.942219	29
32	.056071	18.35	.997170	.23	.058900	18.60	.941100	28
33	.057173	18.32	.997156	.23	.060016	18.57	.939984	27
34	.058271	18.27	.997141	.23	.061130	18.50	.938870	26
35	.059367	18.22	.997127	.23	.062240	18.47	.937760	25
36	.060460	18.18	.997112	.23	.063348	18.42	.936652	24
37	.061551	18.13	.997098	.23	.064453	18.38	.935547	23
38	.062639	18.08	.997083	.23	.065556	18.32	.934444	22
39	.063724	18.03	.997068	.23	.066655	18.28	.933345	21
40	.064806	17.98	.997053	.23	.067752	18.23	.932248	20
41	9.065885	17.93	9.997039	.23	9.068846	18.20	10.931154	19
42	.066962	17.90	.997024	.23	.069938	18.15	.930062	18
43	.068036	17.85	.997009	.23	.071027	18.10	.928973	17
44	.069107	17.82	.996994	.23	.072113	18.07	.927887	16
45	.070176	17.77	.996979	.23	.073197	18.02	.926803	15
46	.071242	17.73	.996964	.23	.074278	17.97	.925722	14
47	.072306	17.67	.996949	.23	.075356	17.93	.924644	13
48	.073366	17.63	.996934	.23	.076432	17.88	.923568	12
49	.074424	17.60	.996919	.23	.077505	17.85	.922495	11
50	.075480	17.55	.996904	.23	.078576	17.80	.921424	10
51	9.076533	17.50	9.996889	.23	9.079644	17.77	10.920356	9
52	.077583	17.47	.996874	.23	.080710	17.72	.919290	8
53	.078631	17.42	.996858	.23	.081773	17.67	.918227	7
54	.079676	17.38	.996843	.23	.082833	17.63	.917167	6
55	.080719	17.33	.996828	.23	.083891	17.60	.916109	5
56	.081759	17.30	.996812	.23	.084947	17.55	.915053	4
57	.082797	17.25	.996797	.23	.086000	17.50	.914000	3
58	.083832	17.20	.996782	.23	.087050	17.47	.912950	2
59	.084864	17.17	.996766	.23	.088098	17.43	.911902	1
60′	9.085894		9.996751	.23	9.089144		10.910856	0′
83°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	83°

7°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	173°
0'	9.085894	17.13	9.996751	.27	9.089144	17.33	10.910856	60'
1	.086222	17.08	.996735	.27	.090187	17.35	.909813	59
2	.087947	17.05	.996720	.27	.091228	17.30	.908772	58
3	.088970	17.00	.996704	.27	.092266	17.27	.907734	57
4	.089990	16.97	.996688	.27	.093302	17.23	.906698	56
5	.091008	16.93	.996673	.27	.094336	17.18	.905664	55
6	.092024	16.88	.996657	.27	.095367	17.13	.904633	54
7	.093037	16.83	.996641	.27	.096395	17.12	.903605	53
8	.094047	16.82	.996625	.27	.097422	17.07	.902578	52
9	.095056	16.77	.996610	.27	.098446	17.03	.901554	51
10	.096062	16.79	.996594	.27	.099468	16.93	.900532	50
11	9.097065	16.68	9.996578	.27	9.100487	16.95	10.899513	49
12	.098068	16.65	.996562	.27	.101504	16.92	.898496	48
13	.099065	16.62	.996546	.27	.102519	16.88	.897481	47
14	.100062	16.57	.996530	.27	.103532	16.83	.896468	46
15	.101056	16.53	.996514	.27	.104542	16.83	.895458	45
16	.102048	16.48	.996498	.27	.105550	16.80	.894450	44
17	.103037	16.47	.996482	.27	.106556	16.77	.893444	43
18	.104025	16.42	.996465	.28	.107559	16.72	.892441	42
19	.105010	16.37	.996449	.27	.108560	16.68	.891440	41
20	.105992	16.35	.996433	.27	.109559	16.65	.890441	40
21	9.106973	16.30	9.996417	.28	9.110556	16.62	10.889444	39
22	.107951	16.27	.996400	.27	.111551	16.58	.888449	38
23	.108927	16.23	.996384	.27	.112543	16.53	.887457	37
24	.109901	16.20	.996368	.28	.113533	16.50	.886467	36
25	.110873	16.15	.996351	.27	.114521	16.47	.885479	35
26	.111842	16.12	.996335	.28	.115507	16.43	.884493	34
27	.112809	16.08	.996318	.28	.116491	16.40	.883509	33
28	.113774	16.05	.996302	.27	.117472	16.35	.882528	32
29	.114737	16.02	.996285	.28	.118452	16.33	.881548	31
30	.115698	15.97	.996269	.28	.119429	16.28	.880571	30
31	9.116656	15.95	9.996252	.28	9.120404	16.22	10.879596	29
32	.117613	15.90	.996235	.27	.121377	16.18	.878623	28
33	.118567	15.87	.996219	.28	.122348	16.15	.877652	27
34	.119519	15.83	.996202	.28	.123317	16.12	.876683	26
35	.120469	15.80	.996185	.28	.124284	16.08	.875716	25
36	.121417	15.77	.996168	.28	.125249	16.05	.874751	24
37	.122362	15.73	.996151	.28	.126211	16.02	.873789	23
38	.123306	15.70	.996134	.28	.127172	15.98	.872828	22
39	.124248	15.65	.996117	.28	.128130	15.97	.871870	21
40	.125187	15.63	.996100	.28	.129087	15.93	.870913	20
41	9.126125	15.58	9.996083	.28	9.130041	15.88	10.869959	19
42	.127060	15.55	.996066	.28	.130994	15.83	.869006	18
43	.127993	15.53	.996049	.28	.131944	15.82	.868056	17
44	.128925	15.48	.996032	.28	.132893	15.77	.867107	16
45	.129854	15.45	.996015	.28	.133839	15.75	.866161	15
46	.130781	15.42	.995998	.30	.134784	15.70	.865216	14
47	.131706	15.40	.995980	.28	.135726	15.68	.864274	13
48	.132630	15.35	.995963	.28	.136667	15.63	.863333	12
49	.133551	15.32	.995946	.28	.137605	15.62	.862395	11
50	.134470	15.28	.995928	.30	.138542	15.57	.861458	10
51	9.135387	15.27	9.995911	.28	9.139476	15.55	10.860524	9
52	.136303	15.22	.995894	.30	.140409	15.52	.859591	8
53	.137216	15.20	.995876	.28	.141340	15.48	.858660	7
54	.138128	15.15	.995859	.30	.142269	15.45	.857731	6
55	.139037	15.12	.995841	.30	.143196	15.42	.856804	5
56	.139944	15.10	.995823	.28	.144121	15.38	.855879	4
57	.140850	15.07	.995806	.30	.145044	15.37	.854956	3
58	.141754	15.03	.995788	.30	.145966	15.32	.854034	2
59	.142655	15.00	.995771	.30	.146885	15.30	.853115	1
60'	9.143555		9.995753		9.147803		10.852197	0'
97°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	82°

8°	Sine.	D. 1″	Cosine.	D. 1″.	Tang.	D. 1″.	Cotang.	171°
0′	9 143555	14.97	9.995753	.30	9.147803	15.25	10.852197	60′
1	144453	14.93	995735	.30	148718	15.23	.851282	59
2	145349	14.90	995717	.30	149632	15.20	.850368	58
3	146243	14.90	995699	.30	150544	15.17	.849456	57
4	147136	14.88	995681	.32	151454	15.15	.848546	56
5	148026	14.83	995664	.30	152363	15.10	.847637	55
6	148915	14.82	995646	.30	153269	15.08	.846731	54
7	149802	14.78	995628	.30	154174	15.05	.845826	53
8	150686	14.73	995610	.32	155077	15.02	.844923	52
9	151569	14.72	995591	.30	155978	14.98	.844022	51
10	152451	14.70	995573	.30	156877	14.97	.843123	50
11	9.153330	14.63	9.995555	.30	9.157775	14.93	10.842225	49
12	154208	14.58	995537	.30	158671	14.90	.841329	48
13	155083	14.57	995519	.30	159565	14.87	.840435	47
14	155957	14.55	995501	.32	160457	14.83	.839543	46
15	156830	14.50	995482	.30	161347	14.82	.838653	45
16	157700	14.48	995464	.30	162236	14.78	.837764	44
17	158569	14.43	995446	.32	163123	14.75	.836877	43
18	159435	14.43	995427	.30	164008	14.73	.835992	42
19	160301	14.38	995409	.32	164892	14.70	.835108	41
20	161164	14.35	995390	.30	165774	14.67	.834226	40
21	9.162025	14.33	9.995372	.32	9 166654	14.63	10.833346	39
22	162885	14.30	995353	.32	167532	14.62	.832468	38
23	163743	14.28	995334	.30	168409	14.58	.831591	37
24	164600	14.23	995316	.32	169284	14.55	.830716	36
25	165454	14.22	995297	.32	170157	14.53	.829843	35
26	166307	14.20	995278	.30	171029	14.50	.828971	34
27	167159	14.15	995260	.32	171899	14.47	.828101	33
28	168008	14.13	995241	.32	172767	14.45	.827233	32
29	168856	14.10	995222	.32	173634	14.42	.826366	31
30	169702	14.08	995203	.32	174499	14.38	.825501	30
31	9.170547	14.03	9.995184	.32	9 175362	14.37	10.824638	29
32	171389	14.02	.995165	.32	176224	14.33	.823776	28
33	172230	14.00	.995146	.32	177084	14.30	.822916	27
34	173070	13.97	.995127	.32	177942	14.28	.822058	26
35	173908	13.93	.995108	.32	178799	14.27	.821201	25
36	174744	13.90	.995089	.32	179655	14.22	.820345	24
37	175578	13.88	.995070	.32	180508	14.20	.819492	23
38	176411	13.85	.995051	.32	181360	14 18	.818640	22
39	177242	13.83	.995032	.32	182211	14.13	.817789	21
40	178072	13.80	.995013	.33	183059	14.13	.816941	20
41	9 178900	13.77	9.994993	.32	9.183907	14 08	10.816093	19
42	.179726	13.75	.994974	.32	.184752	14.08	.815248	18
43	180551	13.72	.994955	.33	.185597	14.05	.814403	17
44	181374	13 70	.994935	.32	.186439	14.02	.813561	16
45	182195	13.67	.994916	.33	.187280	14.00	.812720	15
46	183016	13.63	.994896	.32	.188120	13.97	.811880	14
47	183834	13.62	.994877	.33	.188958	13.93	.811042	13
48	184651	13.58	.994857	.32	.189794	13.92	.810206	12
49	185466	13.57	.994838	.33	.190629	13.88	.809371	11
50	186280	13.53	.994818	.33	191462	13.87	.808538	10
51	9.187092	13.52	9.994798	.32	9.192294	13.83	10.807706	9
52	.187903	13.48	.994779	.33	.193124	13.82	.806876	8
53	.188712	13.45	.994759	.33	.193953	13.78	.806047	7
54	.189519	13.43	.994739	.32	.194780	13.77	.805220	6
55	.190325	13.42	.994720	.33	.195606	13.73	.804394	5
56	.191130	13.38	.994700	.33	.196430	13.72	.803570	4
57	.191933	13.35	.994680	.33	.197253	13.68	.802747	3
58	.192734	13.33	.994660	.33	.198074	13.67	.801926	2
59	.193534	13.30	.994640	.33	.198894	13.65	.801106	1
60′	9.194332		9.994620		9.199712		10.800287	0
98°	Cosine.	D. 1′.	Sine.	D. 1″.	Cotang.	D. 1′.	Tang.	81°

8°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	170°
0′	9.194332	13.28	9.994620	.33	9.199713	13.60	10.800287	60′
1	.196129	13.27	.994600	.33	.200529	13.60	.799471	59
2	.197925	13.23	.994580	.33	.201345	13.57	.798655	58
3	.199719	13.20	.994560	.33	.202159	13.53	.797841	57
4	.197511	13.18	.994540	.35	.202971	13.52	.797029	56
5	.198302	13.15	.994519	.33	.203782	13.50	.796218	55
6	.199091	13.13	.994499	.33	.204592	13.48	.795408	54
7	.199879	13.12	.994479	.33	.205400	13.47	.794600	53
8	.200666	13.12	.994459	.33	.206207	13.45	.793793	52
9	.201451	13.08	.994438	.35	.207013	13.43	.792987	51
10	.202234	13.05	.994418	.33	.207817	13.40	.792183	50
11	9.203017	13.05	9.994398	.33	9.208619	13.37	10.791381	49
12	.203797	13.00	.994377	.35	.209420	13.35	.790580	48
13	.204577	13.00	.994357	.33	.210220	13.33	.789780	47
14	.205354	12.95	.994336	.33	.211018	13.30	.788982	46
15	.206131	12.95	.994316	.33	.211815	13.28	.788185	45
16	.206906	12.92	.994295	.35	.212611	13.27	.787389	44
17	.207679	12.88	.994274	.35	.213405	13.23	.786595	43
18	.208452	12.88	.994254	.33	.214198	13.22	.785802	42
19	.209222	12.83	.994233	.35	.214989	13.18	.785011	41
20	.209992	12.83	.994212	.35	.215780	13.18	.784220	40
21	9.210760	12.77	9.994191	.33	9.216568	13.13	10.783432	39
22	.211526	12.75	.994171	.35	.217356	13.10	.782644	38
23	.212291	12.73	.994150	.35	.218142	13.08	.781858	37
24	.213055	12.72	.994129	.35	.218926	13.07	.781074	36
25	.213818	12.68	.994108	.35	.219710	13.03	.780290	35
26	.214579	12.65	.994087	.35	.220492	13.00	.779508	34
27	.215338	12.65	.994066	.35	.221272	13.00	.778728	33
28	.216097	12.65	.994045	.35	.222052	12.97	.777948	32
29	.216854	12.62	.994024	.35	.222830	12.97	.777170	31
30	.217609	12.58	.994003	.35	.223607	12.95	.776393	30
31	9.218363	12.55	9.993982	.37	9.224382	12.90	10.775618	29
32	.219116	12.53	.993960	.35	.225156	12.88	.774844	28
33	.219868	12.50	.993939	.35	.225929	12.85	.774071	27
34	.220618	12.48	.993918	.35	.226700	12.85	.773300	26
35	.221367	12.47	.993897	.37	.227471	12.80	.772529	25
36	.222115	12.43	.993875	.35	.228239	12.80	.771761	24
37	.222861	12.42	.993854	.37	.229007	12.80	.770993	23
38	.223606	12.42	.993832	.37	.229773	12.77	.770227	22
39	.224349	12.38	.993811	.35	.230539	12.77	.769461	21
40	.225092	12.38	.993789	.37	.231302	12.72	.768698	20
41	9.225833	12.33	9.993768	.37	9.232065	12.68	10.767935	19
42	.226573	12.30	.993746	.35	.232826	12.67	.767174	18
43	.227311	12.28	.993725	.37	.233586	12.65	.766414	17
44	.228048	12.27	.993703	.37	.234345	12.63	.765655	16
45	.228784	12.23	.993681	.35	.235103	12.60	.764897	15
46	.229518	12.23	.993660	.37	.235859	12.58	.764141	14
47	.230252	12.20	.993638	.37	.236614	12.57	.763386	13
48	.230984	12.18	.993616	.37	.237368	12.53	.762632	12
49	.231715	12.15	.993594	.37	.238120	12.53	.761880	11
50	.232444	12.13	.993572	.37	.238872	12.50	.761128	10
51	9.233172	12.12	9.993550	.37	9.239622	12.48	10.760378	9
52	.233899	12.10	.993528	.37	.240371	12.45	.759629	8
53	.234625	12.07	.993506	.37	.241118	12.45	.758882	7
54	.235349	12.07	.993484	.37	.241865	12.42	.758135	6
55	.236073	12.03	.993462	.37	.242610	12.40	.757390	5
56	.236795	12.00	.993440	.37	.243354	12.38	.756646	4
57	.237515	12.00	.993418	.37	.244097	12.37	.755903	3
58	.238235	11.97	.993396	.37	.244839	12.33	.755161	2
59	.238953	11.95	.993374	.37	.245579	12.33	.754421	1
60′	9.239670		9.993351	.38	9.246319	12.33	10.753681	0′
99°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	80°

10°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	169°
0′	9.233670		9.993351		9.240319		10.759681	60′
1	.240386	11.93	.993329	.37	.247057	12.30	.752943	59
2	.241101	11.92	.993307	.37	.247794	12.28	.752206	58
3	.241814	11.88	.993284	.38	.248530	12.27	.751470	57
4	.242526	11.87	.993262	.37	.249264	12.23	.750736	56
5	.243237	11.85	.993240	.37	.249998	12.23	.750002	55
6	.243947	11.83	.993217	.38	.250730	12.20	.749270	54
7	.244656	11.82	.993195	.37	.251461	12.18	.748539	53
8	.245363	11.78	.993172	.38	.252191	12.17	.747809	52
9	.246069	11.77	.993149	.38	.252920	12.15	.747080	51
10	.246775	11.77	.993127	.37	.253648	12.13	.746352	50
		11.72		.38		12.10		
11	9.247478	11.72	9.993104	.38	9.254374	12.10	10.745626	49
12	.248181	11.70	.993081	.37	.255100	12.07	.744900	48
13	.248883	11.67	.993059	.38	.255824	12.05	.744176	47
14	.249583	11.65	.993036	.38	.256547	12.03	.743453	46
15	.250282	11.63	.993013	.38	.257269	12.02	.742731	45
16	.250980	11.62	.992990	.38	.257990	12.00	.742010	44
17	.251677	11.60	.992967	.38	.258710	11.98	.741290	43
18	.252373	11.57	.992944	.38	.259429	11.95	.740571	42
19	.253067	11.57	.992921	.38	.260146	11.95	.739854	41
20	.253761	11.53	.992898	.38	.260863	11.92	.739137	40
21	9.254453	11.52	9.992875	.38	9.261578	11.90	10.738422	39
22	.255144	11.50	.992852	.38	.262292	11.88	.737708	38
23	.255834	11.48	.992829	.38	.263005	11.87	.736995	37
24	.256523	11.47	.992806	.38	.263717	11.85	.736283	36
25	.257211	11.45	.992783	.40	.264428	11.83	.735572	35
26	.257898	11.42	.992759	.38	.265138	11.82	.734862	34
27	.258583	11.42	.992736	.38	.265847	11.80	.734153	33
28	.259268	11.38	.992713	.38	.266555	11.77	.733445	32
29	.259951	11.37	.992690	.40	.267261	11.77	.732739	31
30	.260633	11.35	.992666	.38	.267967	11.73	.732033	30
31	9.261314	11.33	9.992643	.40	9.268671	11.73	10.731329	29
32	.261994	11.32	.992619	.38	.269375	11.70	.730625	28
33	.262673	11.30	.992596	.40	.270077	11.70	.729923	27
34	.263351	11.27	.992572	.38	.270779	11.67	.729221	26
35	.264027	11.27	.992549	.40	.271479	11.65	.728521	25
36	.264703	11.23	.992525	.40	.272178	11.63	.727822	24
37	.265377	11.23	.992501	.38	.272876	11.62	.727124	23
38	.266051	11.20	.992478	.40	.273573	11.60	.726427	22
39	.266723	11.20	.992454	.40	.274269	11.58	.725731	21
40	.267395	11.17	.992430	.40	.274964	11.57	.725036	20
41	9.268065	11.15	9.992406	.40	9.275658	11.55	10.724342	19
42	.268734	11.13	.992382	.38	.276351	11.53	.723649	18
43	.269402	11.12	.992359	.40	.277043	11.52	.722957	17
44	.270069	11.10	.992335	.40	.277734	11.50	.722265	16
45	.270735	11.08	.992311	.40	.278424	11.48	.721576	15
46	.271400	11.07	.992287	.40	.279113	11.47	.720887	14
47	.272064	11.08	.992263	.40	.279801	11.45	.720199	13
48	.272726	11.03	.992239	.42	.280488	11.43	.719512	12
49	.273388	11.02	.992214	.40	.281174	11.40	.718826	11
50	.274049	10.98	.992190	.40	.281858	11.40	.718142	10
51	9.274708	10.98	9.992166	.40	9.282542	11.38	10.717458	9
52	.275367	10.97	.992142	.40	.283225	11.37	.716775	8
53	.276025	10.93	.992118	.42	.283907	11.35	.716093	7
54	.276681	10.93	.992093	.40	.284588	11.33	.715412	6
55	.277337	10.90	.992069	.40	.285268	11.32	.714732	5
56	.277991	10.90	.992044	.42	.285947	11.28	.714053	4
57	.278645	10.87	.992020	.40	.286624	11.28	.713376	3
58	.279297	10.85	.991996	.42	.287301	11.27	.712699	2
59	.279948	10.85	.991971	.40	.287977	11.25	.712023	1
60′	9.280599		9.991947		9.288652		10.711348	0′
100°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	79°

11°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	168°
0′	9.280599	10.82	9.991947	.42	9.288652	11.23	10.711348	60′
1	.281248	10.82	.991922	.42	.289326	11.22	.710674	59
2	.281897	10.78	.991897	.40	.289999	11.20	.710001	58
3	.282544	10.77	.991873	.42	.290671	11.18	.709329	57
4	.283190	10.77	.991848	.43	.291342	11.18	.708658	56
5	.283836	10.73	.991823	.40	.292013	11.15	.707987	55
6	.284480	10.73	.991799	.42	.292683	11.13	.707318	54
7	.285124	10.70	.991774	.42	.293350	11.12	.706650	53
8	.285766	10.70	.991749	.42	.294017	11.12	.705983	52
9	.286408	10.67	.991724	.42	.294684	11.12	.705316	51
10	.287048	10.67	.991699	.42	.295349	11.08	.704651	50
11	9.287688	10.63	9.991674	.42	9.296013	11.07	10.703987	49
12	.288326	10.63	.991649	.42	.296677	11.08	.703323	48
13	.288964	10.60	.991624	.42	.297339	11.03	.702661	47
14	.289600	10.60	.991599	.42	.298001	11.02	.701999	46
15	.290236	10.57	.991574	.42	.298662	11.00	.701338	45
16	.290870	10.57	.991549	.42	.299322	10.97	.700678	44
17	.291504	10.55	.991524	.43	.299980	10.97	.700020	43
18	.292137	10.53	.991498	.43	.300638	10.95	.699362	42
19	.292768	10.52	.991473	.42	.301295	10.93	.698705	41
20	.293399	10.50	.991448	.43	.301951	10.93	.698049	40
21	9.294029	10.45	9.991422	.42	9.302607	10.90	10.697393	39
22	.294658	10.47	.991397	.42	.303261	10.88	.696739	38
23	.295286	10.45	.991372	.43	.303914	10.88	.696086	37
24	.295913	10.43	.991346	.42	.304567	10.85	.695433	36
25	.296539	10.42	.991321	.43	.305218	10.85	.694782	35
26	.297164	10.40	.991295	.42	.305869	10.83	.694131	34
27	.297788	10.40	.991270	.43	.306519	10.82	.693481	33
28	.298412	10.37	.991244	.43	.307168	10.80	.692832	32
29	.299034	10.35	.991218	.42	.307816	10.78	.692184	31
30	.299655	10.35	.991193	.43	.308463	10.77	.691537	30
31	9.300276	10.32	9.991167	.43	9.309109	10.75	10.690891	29
32	.300895	10.32	.991141	.43	.309754	10.75	.690246	28
33	.301514	10.30	.991115	.42	.310399	10.72	.689601	27
34	.302132	10.27	.991090	.43	.311042	10.72	.688958	26
35	.302748	10.27	.991064	.43	.311685	10.70	.688315	25
36	.303364	10.27	.991038	.43	.312327	10.68	.687673	24
37	.303979	10.25	.991012	.43	.312968	10.67	.687032	23
38	.304593	10.23	.990986	.43	.313608	10.67	.686392	22
39	.305207	10.23	.990960	.43	.314247	10.65	.685753	21
40	.305819	10.20	.990934	.43	.314885	10.63	.685115	20
41	9.306430	10.18	9.990908	.43	9.315523	10.60	10.684477	19
42	.307041	10.15	.990882	.45	.316159	10.60	.683841	18
43	.307650	10.15	.990855	.43	.316795	10.58	.683205	17
44	.308259	10.13	.990829	.43	.317429	10.57	.682570	16
45	.308867	10.12	.990803	.43	.318064	10.55	.681936	15
46	.309474	10.10	.990777	.45	.318697	10.55	.681303	14
47	.310080	10.08	.990750	.43	.319330	10.52	.680670	13
48	.310685	10.07	.990724	.45	.319961	10.52	.680039	12
49	.311289	10.07	.990697	.43	.320592	10.50	.679408	11
50	.311893	10.03	.990671	.43	.321222	10.48	.678778	10
51	9.312495	10.03	9.990645	.45	9.321851	10.47	10.678149	9
52	.313097	10.02	.990618	.45	.322479	10.45	.677521	8
53	.313698	9.98	.990591	.43	.323106	10.45	.676894	7
54	.314297	10.00	.990565	.45	.323733	10.42	.676267	6
55	.314897	9.97	.990538	.45	.324358	10.42	.675642	5
56	.315495	9.95	.990511	.43	.324983	10.42	.675017	4
57	.316092	9.95	.990485	.45	.325607	10.40	.674393	3
58	.316689	9.92	.990458	.45	.326231	10.40	.673769	2
59	.317284	9.93	.990431	.45	.326853	10.37	.673147	1
60′	9.317879		9.990404		9.327475	10.37	10.672525	0′
101°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	78°

18°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1"	Cotang.	167°
0'	9.817879		9.990404		9.827475		10.672525	60'
1	.818473	9.90	.990378	.43	.828095	10.33	.671905	59
2	.819066	9.88	.990351	.45	.828715	10.32	.671285	58
3	.819658	9.87	.990324	.45	.829334	10.32	.670666	57
4	.820249	9.85	.990297	.45	.829953	10.28	.670047	56
5	.820840	9.83	.990270	.45	.830570	10.28	.669430	55
6	.821430	9.82	.990243	.47	.831187	10.27	.668813	54
7	.822019	9.80	.990215	.45	.831803	10.25	.668197	53
8	.822607	9.78	.990188	.45	.832418	10.25	.667582	52
9	.823194	9.77	.990161	.45	.833033	10.22	.666967	51
10	.823780	9.77	.990134	.45	.833646	10.22	.666354	50
11	9.824366	9.73	9.990107	.47	9.834259	10.20	10.665741	49
12	.824950	9.73	.990079	.45	.834871	10.18	.665129	48
13	.825534	9.72	.990052	.45	.835482	10.18	.664518	47
14	.826117	9.72	.990025	.47	.836093	10.15	.663907	46
15	.826700	9.68	.989997	.45	.836702	10.15	.663298	45
16	.827281	9.68	.989970	.47	.837311	10.13	.662689	44
17	.827862	9.67	.989942	.45	.837919	10.13	.662081	43
18	.828442	9.65	.989915	.47	.838527	10.10	.661473	42
19	.829021	9.63	.989887	.47	.839133	10.10	.660867	41
20	.829599	9.62	.989860	.47	.839739	10.08	.660261	40
21	9.830176	9.62	9.989832	.47	9.840344	10.07	10.659656	39
22	.830753	9.60	.989804	.45	.840948	10.07	.659052	38
23	.831329	9.57	.989777	.47	.841552	10.05	.658448	37
24	.831903	9.58	.989749	.47	.842155	10.03	.657845	36
25	.832478	9.55	.989721	.47	.842757	10.02	.657243	35
26	.833051	9.55	.989693	.47	.843358	10.00	.656642	34
27	.833624	9.52	.989665	.47	.843958	10.00	.656042	33
28	.834195	9.53	.989637	.45	.844558	10.00	.655442	32
29	.834767	9.50	.989610	.47	.845157	9.98	.654843	31
30	.835337	9.48	.989582	.48	.845755	9.97	.654245	30
31	9.835906	9.48	9.989553	.47	9.846353	9.93	10.653647	29
32	.836475	9.47	.989525	.47	.846949	9.93	.653051	28
33	.837043	9.45	.989497	.47	.847545	9.93	.652455	27
34	.837610	9.43	.989469	.47	.848141	9.90	.651859	26
35	.838176	9.43	.989441	.47	.848735	9.90	.651265	25
36	.838742	9.42	.989413	.47	.849329	9.88	.650671	24
37	.839307	9.40	.989385	.48	.849922	9.87	.650078	23
38	.839871	9.38	.989356	.47	.850514	9.87	.649486	22
39	.840434	9.37	.989328	.47	.851106	9.87	.648894	21
40	.840996	9.37	.989300	.48	.851697	9.83	.648303	20
41	9.841558	9.35	9.989271	.47	9.852287	9.82	10.647713	19
42	.842119	9.33	.989243	.48	.852876	9.82	.647124	18
43	.842679	9.33	.989214	.47	.853465	9.80	.646535	17
44	.843237	9.30	.989186	.48	.854053	9.78	.645947	16
45	.843797	9.30	.989157	.48	.854640	9.78	.645360	15
46	.844355	9.28	.989128	.47	.855227	9.77	.644773	14
47	.844912	9.28	.989100	.48	.855813	9.75	.644187	13
48	.845469	9.25	.989071	.48	.856398	9.73	.643602	12
49	.846024	9.25	.989042	.47	.856982	9.73	.643018	11
50	.846579	9.25	.989014	.48	.857566	9.72	.642434	10
51	9.847134	9.22	9.988985	.48	9.858149	9.70	10.641851	9
52	.847687	9.22	.988956	.48	.858731	9.70	.641269	8
53	.848240	9.20	.988927	.48	.859313	9.67	.640687	7
54	.848792	9.18	.988898	.48	.859893	9.68	.640107	6
55	.849343	9.17	.988869	.48	.860474	9.65	.639526	5
56	.849893	9.17	.988840	.48	.861053	9.65	.638947	4
57	.850443	9.15	.988811	.48	.861632	9.63	.638368	3
58	.850992	9.13	.988782	.48	.862210	9.63	.637790	2
59	.851540	9.13	.988753	.48	.862787	9.62	.637213	1
60'	9.852088		9.988724		9.863364		10.636636	0'
102°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	77°

13°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	166°
0'	9.352088		9.988724	.48	9.363364		10.636636	60'
1	.352635	9.12	.988695	.48	.363940	9.60	.636060	59
2	.353181	9.10	.988666	.50	.364515	9.58	.635485	58
3	.353726	9.08	.988636	.50	.365090	9.58	.634910	57
4	.354271	9.08	.988607	.48	.365664	9.57	.634336	56
5	.354815	9.07	.988578	.48	.366237	9.55	.633763	55
6	.355358	9.05	.988548	.50	.366810	9.55	.633190	54
7	.355901	9.05	.988519	.48	.367382	9.53	.632618	53
8	.356443	9.03	.988489	.50	.367953	9.52	.632047	52
9	.356984	9.02	.988460	.48	.368524	9.52	.631476	51
10	.357524	9.00	.988430	.48	.369094	9.48	.630906	50
11	9.358064	8.98	9.988401	.50	9.369663	9.48	10.630337	49
12	.358603	8.97	.988371	.48	.370232	9.48	.629768	48
13	.359141	8.97	.988342	.48	.370799	9.45	.629201	47
14	.359678	8.95	.988312	.50	.371367	9.47	.628633	46
15	.360215	8.95	.988282	.50	.371933	9.43	.628067	45
16	.360752	8.95	.988252	.50	.372499	9.43	.627501	44
17	.361287	8.92	.988223	.48	.373064	9.42	.626936	43
18	.361822	8.92	.988193	.50	.373629	9.42	.626371	42
19	.362356	8.90	.988163	.50	.374193	9.40	.625807	41
20	.362889	8.88	.988133	.50	.374756	9.38	.625244	40
21	9.363422	8.87	9.988103	.50	9.375319	9.37	10.624681	39
22	.363954	8.85	.988073	.50	.375881	9.35	.624119	38
23	.364485	8.85	.988043	.50	.376442	9.35	.623558	37
24	.365016	8.85	.988013	.50	.377003	9.33	.622997	36
25	.365546	8.83	.987983	.50	.377563	9.32	.622437	35
26	.366075	8.82	.987953	.50	.378122	9.32	.621878	34
27	.366604	8.82	.987922	.52	.378681	9.32	.621319	33
28	.367131	8.78	.987892	.50	.379239	9.30	.620761	32
29	.367659	8.77	.987862	.50	.379797	9.28	.620203	31
30	.368185	8.77	.987832	.52	.380354	9.27	.619646	30
31	9.368711	8.75	9.987801	.50	9.380910	9.27	10.619090	29
32	.369236	8.75	.987771	.52	.381466	9.23	.618534	28
33	.369761	8.73	.987740	.50	.382020	9.25	.617980	27
34	.370285	8.72	.987710	.52	.382575	9.23	.617425	26
35	.370808	8.72	.987679	.52	.383129	9.22	.616871	25
36	.371330	8.70	.987649	.52	.383682	9.20	.616318	24
37	.371852	8.70	.987618	.52	.384234	9.20	.615766	23
38	.372373	8.68	.987588	.50	.384786	9.18	.615214	22
39	.372894	8.68	.987557	.52	.385337	9.18	.614663	21
40	.373414	8.67	.987526	.52	.385888	9.17	.614112	20
41	9.373933	8.65	9.987496	.52	9.386438	9.15	10.613562	19
42	.374452	8.65	.987465	.52	.386987	9.15	.613013	18
43	.374970	8.63	.987434	.52	.387536	9.13	.612464	17
44	.375487	8.62	.987403	.52	.388084	9.12	.611916	16
45	.376003	8.60	.987372	.52	.388631	9.12	.611369	15
46	.376519	8.60	.987341	.52	.389178	9.10	.610822	14
47	.377035	8.60	.987310	.52	.389724	9.10	.610276	13
48	.377549	8.57	.987279	.52	.390270	9.08	.609730	12
49	.378063	8.57	.987248	.52	.390815	9.08	.609185	11
50	.378577	8.53	.987217	.52	.391360	9.05	.608640	10
51	9.379089	8.53	9.987186	.52	9.391903	9.07	10.608097	9
52	.379601	8.53	.987155	.52	.392447	9.03	.607553	8
53	.380113	8.53	.987124	.53	.392989	9.03	.607011	7
54	.380624	8.50	.987092	.52	.393531	9.03	.606469	6
55	.381134	8.50	.987061	.52	.394073	9.02	.606927	5
56	.381643	8.48	.987030	.53	.394614	9.00	.606386	4
57	.382152	8.48	.986998	.52	.395154	9.00	.604846	3
58	.382661	8.48	.986967	.52	.395694	8.98	.604306	2
59	.383168	8.45	.986936	.52	.396233	8.97	.603767	1
60'	9.383676	8.45	9.986904	.53	9.396771		10.603229	0'
103°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	76°

14°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	165°
0'	9.383675	8.45	9.986904	.52	9.396771	8.97	10.603229	60'
1	.384182	8.42	.986873	.53	.397309	8.95	.602691	59
2	.384687	8.42	.986841	.53	.397846	8.95	.602154	58
3	.385192	8.42	.986809	.52	.398383	8.93	.601617	57
4	.385697	8.40	.986778	.53	.398919	8.93	.601081	56
5	.386201	8.38	.986746	.53	.399455	8.92	.600545	55
6	.386704	8.38	.986714	.52	.399990	8.90	.600010	54
7	.387207	8.37	.986683	.53	.400524	8.90	.599476	53
8	.387709	8.35	.986651	.53	.401058	8.88	.598942	52
9	.388210	8.35	.986619	.53	.401591	8.88	.598409	51
10	.388711	8.33	.986587	.53	.402124	8.87	.597876	50
11	9.389211	8.33	9.986555	.53	9.402656	8.85	10.597344	49
12	.389711	8.32	.986523	.53	.403187	8.85	.596813	48
13	.390210	8.30	.986491	.53	.403718	8.85	.596282	47
14	.390708	8.30	.986459	.53	.404249	8.82	.595751	46
15	.391206	8.28	.986427	.53	.404778	8.83	.595222	45
16	.391703	8.27	.986395	.53	.405308	8.80	.594692	44
17	.392199	8.27	.986363	.53	.405836	8.80	.594164	43
18	.392695	8.27	.986331	.53	.406364	8.80	.593636	42
19	.393191	8.23	.986299	.55	.406892	8.78	.593108	41
20	.393685	8.23	.986266	.53	.407419	8.77	.592581	40
21	9.394179	8.23	9.986234	.53	9.407945	8.77	10.592055	39
22	.394673	8.22	.986202	.55	.408471	8.75	.591529	38
23	.395166	8.20	.986169	.53	.408996	8.75	.591004	37
24	.395658	8.20	.986137	.55	.409521	8.73	.590479	36
25	.396150	8.18	.986104	.53	.410045	8.73	.589955	35
26	.396641	8.18	.986072	.55	.410569	8.72	.589431	34
27	.397132	8.15	.986039	.53	.411092	8.72	.588908	33
28	.397621	8.17	.986007	.53	.411615	8.70	.588385	32
29	.398111	8.15	.985974	.53	.412137	8.68	.587863	31
30	.398600	8.13	.985942	.55	.412658	8.68	.587342	30
31	9.399088	8.12	9.985909	.55	9.413179	8.67	10.586821	29
32	.399575	8.12	.985876	.55	.413699	8.67	.586301	28
33	.400062	8.12	.985843	.53	.414219	8.65	.585781	27
34	.400549	8.10	.985811	.55	.414738	8.65	.585262	26
35	.401035	8.08	.985778	.55	.415257	8.63	.584743	25
36	.401520	8.08	.985745	.55	.415775	8.63	.584225	24
37	.402005	8.07	.985712	.55	.416293	8.62	.583707	23
38	.402489	8.05	.985679	.55	.416810	8.60	.583190	22
39	.402972	8.05	.985646	.55	.417326	8.60	.582674	21
40	.403455	8.05	.985613	.55	.417842	8.60	.582158	20
41	9.403938	8.03	9.985580	.55	9.418358	8.58	10.581642	19
42	.404420	8.02	.985547	.55	.418873	8.57	.581127	18
43	.404901	8.02	.985514	.57	.419387	8.57	.580613	17
44	.405382	8.00	.985480	.55	.419901	8.57	.580099	16
45	.405862	7.98	.985447	.55	.420415	8.53	.579585	15
46	.406341	7.98	.985414	.55	.420927	8.55	.579073	14
47	.406820	7.98	.985381	.57	.421440	8.52	.578560	13
48	.407299	7.97	.985347	.55	.421952	8.52	.578048	12
49	.407777	7.95	.985314	.57	.422463	8.52	.577537	11
50	.408254	7.95	.985280	.55	.422974	8.50	.577026	10
51	9.408731	7.93	9.985247	.57	9.423484	8.48	10.576516	9
52	.409207	7.93	.985213	.55	.423993	8.50	.576007	8
53	.409682	7.92	.985180	.57	.424503	8.47	.575497	7
54	.410157	7.92	.985146	.55	.425011	8.47	.574989	6
55	.410632	7.90	.985113	.57	.425519	8.47	.574481	5
56	.411106	7.88	.985079	.57	.426027	8.45	.573973	4
57	.411579	7.88	.985045	.57	.426534	8.45	.573466	3
58	.412052	7.87	.985011	.55	.427041	8.43	.572959	2
59	.412524	7.87	.984978	.57	.427547	8.42	.572453	1
60'	9.412996		9.984944		9.428052		10.571948	0'
194°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	76°

15°	Sine	D. 1.	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	164°
0'	9.412996	7.85	9.984944	.57	9.428052	8.43	10.571948	60'
1	.413467	7.85	.984910	.57	.428538	8.40	.571442	59
2	.413938	7.83	.984876	.57	.429062	8.40	.570938	58
3	.414408	7.83	.984842	.57	.429666	8.40	.570434	57
4	.414878	7.82	.984808	.57	.430070	8.38	.569930	56
5	.415347	7.80	.984774	.57	.430573	8.37	.569427	55
6	.415815	7.80	.984740	.57	.431075	8.37	.568925	54
7	.416283	7.80	.984706	.57	.431577	8.37	.568423	53
8	.416751	7.77	.984672	.57	.432079	8.35	.567921	52
9	.417217	7.78	.984638	.58	.432580	8.33	.567420	51
10	.417684	7.77	.984603	.57	.433080	8.33	.566920	50
11	9.418150	7.75	9.984569	.57	9.433580	8.33	10.566420	49
12	.418615	7.73	.984535	.58	.434080	8.32	.565920	48
13	.419079	7.75	.984500	.57	.434579	8.32	.565421	47
14	.419544	7.72	.984466	.57	.435078	8.30	.564922	46
15	.420007	7.73	.984432	.58	.435576	8.28	.564424	45
16	.420470	7.72	.984397	.57	.436073	8.28	.563927	44
17	.420933	7.70	.984363	.58	.436570	8.28	.563430	43
18	.421395	7.70	.984328	.57	.437067	8.27	.562933	42
19	.421857	7.68	.984294	.58	.437563	8.27	.562437	41
20	.422318	7.67	.984259	.58	.438059	8.25	.561941	40
21	9.422778	7.67	9.984224	.57	9.438554	8.23	10.561445	39
22	.423238	7.65	.984190	.58	.439048	8.25	.560952	38
23	.423697	7.65	.984155	.58	.439543	8.22	.560457	37
24	.424156	7.65	.984120	.58	.440036	8.22	.559964	36
25	.424615	7.63	.984085	.58	.440529	8.22	.559471	35
26	.425073	7.62	.984050	.58	.441022	8.20	.558978	34
27	.425530	7.62	.984015	.57	.441514	8.20	.558486	33
28	.425987	7.62	.983981	.58	.442006	8.18	.557994	32
29	.426443	7.60	.983946	.58	.442497	8.18	.557503	31
30	.426899	7.58	.983911	.60	.442988	8.18	.557012	30
31	9.427354	7.58	9.983875	.58	9.443479	8.15	10.556521	29
32	.427809	7.57	.983840	.58	.443968	8.17	.556032	28
33	.428263	7.57	.983805	.58	.444458	8.15	.555542	27
34	.428717	7.55	.983770	.58	.444947	8.13	.555053	26
35	.429170	7.55	.983735	.58	.445435	8.13	.554565	25
36	.429623	7.53	.983700	.60	.445923	8.13	.554077	24
37	.430075	7.53	.983664	.58	.446411	8.12	.553589	23
38	.430527	7.52	.983629	.58	.446898	8.10	.553102	22
39	.430978	7.52	.983594	.60	.447384	8.10	.552616	21
40	.431429	7.50	.983558	.58	.447870	8.10	.552130	20
41	9.431879	7.50	9.983523	.60	9.448356	8.08	10.551644	19
42	.432329	7.48	.983487	.58	.448841	8.08	.551159	18
43	.432778	7.47	.983452	.60	.449326	8.07	.550674	17
44	.433226	7.48	.983416	.58	.449810	8.07	.550190	16
45	.433675	7.45	.983381	.60	.450294	8.05	.549706	15
46	.434122	7.45	.983345	.60	.450777	8.05	.549223	14
47	.434569	7.45	.983309	.60	.451260	8.05	.548740	13
48	.435016	7.43	.983273	.58	.451743	8.03	.548257	12
49	.435462	7.43	.983238	.60	.452225	8.02	.547775	11
50	.435908	7.42	.983202	.60	.452706	8.02	.547294	10
51	9.436353	7.42	9.983166	.60	9.453187	8.02	10.546813	9
52	.436798	7.40	.983130	.60	.453668	8.00	.546333	8
53	.437242	7.40	.983094	.60	.454148	8.00	.545852	7
54	.437686	7.38	.983058	.60	.454628	7.98	.545372	6
55	.438129	7.38	.983022	.60	.455107	7.98	.544893	5
56	.438572	7.37	.982986	.60	.455586	7.97	.544414	4
57	.439014	7.37	.982950	.60	.456064	7.97	.543936	3
58	.439456	7.37	.982914	.60	.456542	7.95	.543458	2
59	.439897	7.35	.982878	.60	.457019	7.95	.542981	1
60'	9.440338	7.35	9.982842	.60	9.457496		10.542504	0'
105°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	74°

16°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	73°
0′	9.440338	7.33	9.982842	.62	9.457496	7.95	10.542504	60′
1	.440778	7.33	.982805	.60	.457973	7.93	.542027	59
2	.441218	7.33	.982769	.60	.458449	7.93	.541551	58
3	.441658	7.30	.982733	.62	.458925	7.92	.541075	57
4	.442096	7.32	.982696	.60	.459400	7.92	.540600	56
5	.442535	7.30	.982660	.60	.459875	7.90	.540125	55
6	.442973	7.28	.982624	.62	.460349	7.90	.539651	54
7	.443410	7.28	.982587	.60	.460823	7.90	.539177	53
8	.443847	7.28	.982551	.62	.461297	7.88	.538703	52
9	.444284	7.27	.982514	.62	.461770	7.87	.538230	51
10	.444720	7.25	.982477	.60	.462242	7.88	.537758	50
11	9.445155	7.25	9.982441	.62	9.462715	7.85	10.537285	49
12	.445590	7.25	.982404	.62	.463186	7.87	.536814	48
13	.446025	7.23	.982367	.60	.463658	7.83	.536342	47
14	.446459	7.23	.982331	.62	.464128	7.85	.535872	46
15	.446893	7.22	.982294	.62	.464599	7.83	.535401	45
16	.447326	7.22	.982257	.62	.465069	7.83	.534931	44
17	.447759	7.20	.982220	.62	.465539	7.82	.534461	43
18	.448191	7.20	.982183	.62	.466008	7.82	.533992	42
19	.448623	7.18	.982146	.62	.466477	7.80	.533523	41
20	.449054	7.18	.982109	.62	.466945	7.80	.533055	40
21	9.449485	7.17	9.982072	.62	9.467413	7.78	10.532587	39
22	.449915	7.17	.982035	.62	.467880	7.78	.532120	38
23	.450345	7.17	.981998	.62	.468347	7.78	.531653	37
24	.450775	7.15	.981961	.62	.468814	7.77	.531186	36
25	.451204	7.13	.981924	.63	.469280	7.77	.530720	35
26	.451632	7.13	.981886	.62	.469746	7.75	.530254	34
27	.452060	7.13	.981849	.62	.470211	7.75	.529789	33
28	.452488	7.13	.981812	.62	.470676	7.75	.529324	32
29	.452915	7.12	.981774	.63	.471141	7.73	.528859	31
30	.453342	7.10	.981737	.62	.471605	7.73	.528395	30
31	9.453768	7.10	9.981700	.63	9.472069	7.72	10.527931	29
32	.454194	7.08	.981662	.62	.472532	7.72	.527468	28
33	.454619	7.08	.981625	.63	.472995	7.70	.527005	27
34	.455044	7.08	.981587	.63	.473457	7.70	.526543	26
35	.455469	7.07	.981549	.62	.473919	7.70	.526081	25
36	.455893	7.05	.981512	.63	.474381	7.68	.525619	24
37	.456316	7.05	.981474	.63	.474842	7.68	.525158	23
38	.456739	7.05	.981436	.63	.475303	7.67	.524697	22
39	.457162	7.05	.981399	.62	.475763	7.67	.524237	21
40	.457584	7.03	.981361	.63	.476223	7.67	.523777	20
41	9.458006	7.02	9.981323	.63	9.476683	7.65	10.523317	19
42	.458427	7.02	.981285	.62	.477142	7.65	.522858	18
43	.458848	7.00	.981247	.63	.477601	7.63	.522399	17
44	.459268	7.00	.981209	.63	.478059	7.63	.521941	16
45	.459688	7.00	.981171	.63	.478517	7.63	.521483	15
46	.460108	6.98	.981133	.63	.478975	7.62	.521025	14
47	.460527	6.98	.981095	.63	.479432	7.62	.520568	13
48	.460946	6.98	.981057	.63	.479889	7.60	.520111	12
49	.461364	6.97	.981019	.63	.480345	7.60	.519655	11
50	.461782	6.95	.980981	.63	.480801	7.60	.519199	10
51	9.462199	6.95	9.980942	.63	9.481257	7.58	10.518743	9
52	.462616	6.93	.980904	.63	.481712	7.58	.518288	8
53	.463032	6.93	.980866	.65	.482167	7.57	.517833	7
54	.463448	6.93	.980827	.63	.482621	7.57	.517379	6
55	.463864	6.92	.980789	.63	.483075	7.57	.516925	5
56	.464279	6.93	.980750	.65	.483529	7.55	.516471	4
57	.464694	6.90	.980712	.63	.483982	7.55	.516018	3
58	.465108	6.90	.980673	.65	.484435	7.53	.515565	2
59	.465522	6.88	.980635	.63	.484887	7.53	.515113	1
60′	9.465935		9.980596	.65	9.485339	7.53	10.514661	0′
106°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	73°

17°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1"	Cotang.	162°
0'	9.465935	6.88	9.980506	.63	9.485339	7.53	10.514661	60'
1	.466348	6.88	.980558	.63	.485791	7.52	.514209	59
2	.466761	6.87	.980519	.65	.486242	7.52	.513758	58
3	.467173	6.87	.980480	.63	.486693	7.50	.513307	57
4	.467585	6.87	.980442	.63	.487143	7.50	.512857	56
5	.467996	6.85	.980403	.65	.487593	7.50	.512407	55
6	.468407	6.85	.980364	.65	.488043	7.48	.511957	54
7	.468817	6.83	.980325	.65	.488492	7.48	.511508	53
8	.469227	6.83	.980286	.65	.488941	7.48	.511059	52
9	.469637	6.82	.980247	.65	.489390	7.47	.510610	51
10	.470046	6.82	.980208	.65	.489838	7.47	.510162	50
11	9.470455	6.80	9.980169	.65	9.490286	7.45	10.509714	49
12	.470863	6.80	.980130	.65	.490733	7.45	.509267	48
13	.471271	6.80	.980091	.65	.491180	7.45	.508820	47
14	.471679	6.78	.980052	.67	.491627	7.43	.508373	46
15	.472086	6.77	.980012	.65	.492073	7.43	.507927	45
16	.472492	6.77	.979973	.65	.492519	7.43	.507481	44
17	.472899	6.77	.979934	.65	.492965	7.42	.507035	43
18	.473304	6.77	.979895	.67	.493410	7.40	.506590	42
19	.473710	6.75	.979855	.65	.493854	7.42	.506146	41
20	.474115	6.73	.979816	.67	.494299	7.40	.505701	40
21	9.474519	6.73	9.979776	.65	9.494743	7.38	10.505257	39
22	.474923	6.73	.979737	.67	.495186	7.40	.504814	38
23	.475327	6.72	.979697	.67	.495630	7.38	.504370	37
24	.475730	6.72	.979658	.67	.496073	7.37	.503927	36
25	.476133	6.72	.979618	.65	.496515	7.37	.503485	35
26	.476536	6.70	.979579	.67	.496957	7.37	.503043	34
27	.476938	6.70	.979539	.67	.497399	7.37	.502601	33
28	.477340	6.68	.979499	.67	.497841	7.35	.502159	32
29	.477741	6.68	.979459	.65	.498282	7.33	.501718	31
30	.478142	6.67	.979420	.67	.498722	7.35	.501278	30
31	9.478542	6.67	9.979380	.67	9.499163	7.33	10.500837	29
32	.478942	6.67	.979340	.67	.499603	7.32	.500397	28
33	.479342	6.67	.979300	.67	.500042	7.32	.499958	27
34	.479741	6.65	.979260	.67	.500481	7.32	.499519	26
35	.480140	6.65	.979220	.67	.500920	7.32	.499080	25
36	.480539	6.63	.979180	.67	.501359	7.30	.498641	24
37	.480937	6.62	.979140	.67	.501797	7.30	.498203	23
38	.481334	6.62	.979100	.68	.502235	7.28	.497765	22
39	.481731	6.62	.979059	.67	.502672	7.28	.497328	21
40	.482128	6.62	.979019	.67	.503109	7.28	.496891	20
41	9.482525	6.60	9.978979	.67	9.503546	7.27	10.496454	19
42	.482921	6.60	.978939	.68	.503982	7.27	.496018	18
43	.483316	6.58	.978898	.68	.504418	7.27	.495582	17
44	.483712	6.60	.978858	.67	.504854	7.25	.495146	16
45	.484107	6.58	.978817	.68	.505289	7.25	.494711	15
46	.484501	6.57	.978777	.67	.505724	7.25	.494276	14
47	.484895	6.57	.978737	.68	.506159	7.23	.493841	13
48	.485289	6.55	.978696	.68	.506593	7.23	.493407	12
49	.485682	6.55	.978655	.67	.507027	7.22	.492973	11
50	.486075	6.53	.978615	.68	.507460	7.22	.492540	10
51	9.486467	6.55	9.978574	.68	9.507893	7.22	10.492107	9
52	.486860	6.52	.978533	.67	.508326	7.22	.491674	8
53	.487251	6.53	.978493	.68	.508759	7.20	.491241	7
54	.487643	6.52	.978452	.68	.509191	7.18	.490809	6
55	.488034	6.52	.978411	.68	.509622	7.20	.490378	5
56	.488424	6.50	.978370	.68	.510054	7.18	.489946	4
57	.488814	6.50	.978329	.68	.510485	7.18	.489515	3
58	.489204	6.50	.978288	.68	.510916	7.17	.489084	2
59	.489593	6.48	.978247	.68	.511346	7.17	.488654	1
60'	9.489982		9.978206		9.511776		10.488224	0'
107°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	73°

18°	Sine.	D. 1".	Cosine	D. 1".	Tang.	D. 1".	Cotang.	1st°
0'	9.489982		9.978206		9.511776		10.488224	60
1	.490371	6.48	.978165	.68	.512206	7.17	.487794	59
2	.490759	6.47	.978124	.68	.512635	7.15	.487365	58
3	.491147	6.47	.978083	.68	.513064	7.15	.486936	57
4	.491535	6.47	.978042	.68	.513493	7.15	.486507	56
5	.491922	6.45	.978001	.68	.513921	7.13	.486079	55
6	.492308	6.43	.977959	.70	.514349	7.13	.485651	54
7	.492695	6.45	.977918	.68	.514777	7.13	.485223	53
8	.493081	6.43	.977877	.68	.515204	7.12	.484796	52
9	.493466	6.42	.977835	.70	.515631	7.12	.484369	51
10	.493851	6.42	.977794	.68	.516057	7.12	.483943	50
11	9.494236	6.42	9.977752	.68	9.516484	7.10	10.483516	49
12	.494621	6.42	.977711	.70	.516910	7.10	.483090	48
13	.495005	6.40	.977669	.68	.517335	7.08	.482665	47
14	.495388	6.38	.977628	.70	.517761	7.10	.482239	46
15	.495772	6.40	.977586	.70	.518186	7.08	.481814	45
16	.496154	6.37	.977544	.70	.518610	7.07	.481390	44
17	.496537	6.38	.977503	.68	.519034	7.07	.480966	43
18	.496919	6.37	.977461	.70	.519458	7.07	.480542	42
19	.497301	6.37	.977419	.70	.519882	7.07	.480118	41
20	.497682	6.37	.977377	.70	.520305	7.05	.479695	40
21	9.498064	6.38	9.977335	.70	9.520728	7.05	10.479272	39
22	.498444	6.35	.977293	.70	.521151	7.05	.478849	38
23	.498825	6.35	.977251	.70	.521573	7.03	.478427	37
24	.499204	6.32	.977209	.70	.521995	7.03	.478005	36
25	.499584	6.33	.977167	.70	.522417	7.03	.477583	35
26	.499963	6.32	.977125	.70	.522838	7.02	.477162	34
27	.500342	6.32	.977083	.70	.523259	7.02	.476741	33
28	.500721	6.32	.977041	.70	.523680	7.02	.476320	32
29	.501099	6.28	.976999	.70	.524100	7.00	.475900	31
30	.501476	6.30	.976957	.72	.524520	7.00	.475480	30
31	9.501854	6.28	9.976914	.70	9.524940	6.98	10.475060	29
32	.502231	6.27	.976872	.70	.525359	6.98	.474641	28
33	.502607	6.27	.976830	.70	.525778	6.98	.474222	27
34	.502984	6.28	.976787	.72	.526197	6.98	.473803	26
35	.503360	6.27	.976745	.72	.526615	6.97	.473385	25
36	.503735	6.25	.976702	.72	.527033	6.97	.472967	24
37	.504110	6.25	.976660	.70	.527451	6.97	.472549	23
38	.504485	6.25	.976617	.72	.527868	6.95	.472132	22
39	.504860	6.25	.976574	.72	.528285	6.95	.471715	21
40	.505234	6.23	.976532	.72	.528702	6.95	.471298	20
41	9.505608	6.22	9.976489	.72	9.529119	6.93	10.470881	19
42	.505981	6.22	.976446	.72	.529535	6.95	.470465	18
43	.506354	6.22	.976404	.72	.529951	6.93	.470049	17
44	.506727	6.20	.976361	.72	.530366	6.93	.469634	16
45	.507099	6.20	.976318	.72	.530781	6.93	.469219	15
46	.507471	6.20	.976275	.72	.531196	6.92	.468804	14
47	.507843	6.18	.976232	.72	.531611	6.90	.468389	13
48	.508214	6.18	.976189	.72	.532025	6.90	.467975	12
49	.508585	6.18	.976146	.72	.532439	6.90	.467561	11
50	.508956	6.17	.976103	.72	.532853	6.88	.467147	10
51	9.509326	6.17	9.976060	.72	9.533266	6.88	10.466734	9
52	.509696	6.15	.976017	.72	.533679	6.88	.466321	8
53	.510065	6.15	.975974	.73	.534092	6.88	.465908	7
54	.510434	6.15	.975930	.73	.534504	6.87	.465496	6
55	.510803	6.15	.975887	.72	.534916	6.87	.465084	5
56	.511172	6.13	.975844	.73	.535328	6.85	.464672	4
57	.511540	6.12	.975800	.72	.535739	6.85	.464261	3
58	.511907	6.13	.975757	.72	.536150	6.85	.463850	2
59	.512275	6.12	.975714	.73	.536561	6.85	.463439	1
60'	9.512642		9.975670		9.536972		10.463028	0'
108°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	71°

20°	Sine.	D. 1".	Cosine.	D. 1"	Tang.	D. 1".	Cotang.	160°
0'	9.512842	6.12	9.975070	.72	9.536972	6.83	10.463028	60'
1	.513009	6.10	.975027	.73	.537382	6.83	.462618	59
2	.513175	6.10	.975583	.73	.537792	6.83	.462208	58
3	.513341	6.10	.975539	.72	.538202	6.82	.461798	57
4	.514107	6.10	.975496	.73	.538611	6.82	.461389	56
5	.514472	6.08	.975452	.73	.539020	6.82	.460980	55
6	.514837	6.08	.975408	.73	.539429	6.82	.460571	54
7	.515202	6.08	.975365	.72	.539837	6.80	.460163	53
8	.515566	6.07	.975321	.73	.540245	6.80	.459755	52
9	.515930	6.07	.975277	.73	.540653	6.80	.459347	51
10	.516294	6.07	.975233	.73	.541061	6.80	.458939	50
11	9.516657	6.05	9.975189	.73	9.541468	6.78	10.458532	49
12	.517020	6.05	.975145	.73	.541875	6.78	.458125	48
13	.517382	6.03	.975101	.73	.542281	6.77	.457719	47
14	.517745	6.05	.975057	.73	.542688	6.78	.457312	46
15	.518107	6.03	.975013	.73	.543094	6.77	.456906	45
16	.518468	6.02	.974969	.73	.543499	6.75	.456501	44
17	.518829	6.02	.974925	.73	.543905	6.77	.456095	43
18	.519190	6.02	.974880	.75	.544310	6.75	.455690	42
19	.519551	6.02	.974836	.73	.544715	6.75	.455285	41
20	.519911	6.00	.974792	.73	.545119	6.75	.454881	40
21	9.520271	6.00	9.974748	.73	9.545524	6.73	10.454476	39
22	.520631	6.00	.974703	.75	.545928	6.73	.454072	38
23	.520990	5.98	.974659	.73	.546331	6.72	.453669	37
24	.521349	5.98	.974614	.75	.546735	6.73	.453265	36
25	.521707	5.97	.974570	.73	.547138	6.72	.452862	35
26	.522066	5.98	.974525	.75	.547540	6.70	.452460	34
27	.522424	5.97	.974481	.73	.547943	6.72	.452057	33
28	.522781	5.95	.974436	.75	.548345	6.70	.451655	32
29	.523138	5.95	.974391	.75	.548747	6.70	.451253	31
30	.523495	5.95	.974347	.73	.549149	6.70	.450851	30
31	9.523852	5.93	9.974302	.75	9.549550	6.68	10.450450	29
32	.524208	5.93	.974257	.75	.549951	6.68	.450049	28
33	.524564	5.93	.974212	.75	.550352	6.68	.449648	27
34	.524920	5.93	.974167	.75	.550752	6.67	.449248	26
35	.525275	5.92	.974122	.75	.551153	6.68	.448847	25
36	.525630	5.92	.974077	.75	.551552	6.65	.448448	24
37	.525984	5.90	.974032	.75	.551952	6.67	.448048	23
38	.526339	5.92	.973987	.75	.552351	6.65	.447649	22
39	.526693	5.90	.973942	.75	.552750	6.65	.447250	21
40	.527046	5.88	.973897	.75	.553149	6.65	.446851	20
41	9.527400	5.90	9.973852	.75	9.553548	6.63	10.446452	19
42	.527753	5.88	.973807	.75	.553946	6.63	.446054	18
43	.528105	5.87	.973761	.77	.554344	6.63	.445656	17
44	.528458	5.88	.973716	.75	.554741	6.62	.445259	16
45	.528810	5.87	.973671	.75	.555139	6.63	.444861	15
46	.529161	5.85	.973625	.77	.555536	6.62	.444464	14
47	.529513	5.87	.973580	.75	.555933	6.62	.444067	13
48	.529864	5.85	.973535	.75	.556329	6.60	.443671	12
49	.530215	5.85	.973489	.77	.556725	6.60	.443275	11
50	.530565	5.83	.973444	.75	.557121	6.60	.442879	10
51	9.530915	5.83	9.973398	.77	9.557517	6.60	10.442483	9
52	.531265	5.83	.973352	.75	.557913	6.60	.442087	8
53	.531614	5.82	.973307	.77	.558308	6.58	.441692	7
54	.531963	5.82	.973261	.77	.558703	6.58	.441297	6
55	.532312	5.82	.973215	.77	.559097	6.57	.440903	5
56	.532661	5.82	.973169	.77	.559491	6.57	.440509	4
57	.533009	5.80	.973124	.75	.559885	6.57	.440115	3
58	.533357	5.80	.973078	.77	.560279	6.57	.439721	2
59	.533704	5.78	.973032	.77	.560673	6.57	.439327	1
60'	9.534052	5.80	9.972986	.77	9.561066	6.55	10.438934	0'
109°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	70°

20°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang. 159°	
0'	9.534052	5.78	9.972986	.77	9.561066	6.55	10.438934	60'
1	.534399	5.77	.972940	.77	.561459	6.53	.438541	59
2	.534745	5.77	.972894	.77	.561851	6.55	.438149	58
3	.535092	5.78	.972848	.77	.562244	6.53	.437756	57
4	.535438	5.77	.972802	.78	.562636	6.53	.437364	56
5	.535783	5.75	.972755	.77	.563028	6.52	.436972	55
6	.536129	5.77	.972709	.77	.563419	6.53	.436581	54
7	.536474	5.75	.972663	.77	.563811	6.52	.436189	53
8	.536818	5.73	.972617	.78	.564202	6.52	.435798	52
9	.537163	5.75	.972570	.77	.564593	6.50	.435407	51
10	.537507	5.73	.972524	.77	.564983	6.50	.435017	50
11	9.537851	5.72	9.972478	.78	9.565373	6.50	10.434627	49
12	.538194	5.73	.972431	.77	.565763	6.50	.434237	48
13	.538538	5.73	.972385	.78	.566153	6.48	.433847	47
14	.538880	5.70	.972338	.78	.566542	6.50	.433458	46
15	.539223	5.72	.972291	.77	.566932	6.47	.433068	45
16	.539565	5.70	.972245	.78	.567320	6.48	.432680	44
17	.539907	5.70	.972198	.78	.567709	6.48	.432291	43
18	.540249	5.68	.972151	.77	.568098	6.47	.431902	42
19	.540590	5.68	.972105	.78	.568486	6.45	.431514	41
20	.540931	5.68	.972058	.78	.568873	6.47	.431127	40
21	9.541272	5.68	9.972011	.78	9.569261	6.45	10.430739	39
22	.541613	5.67	.971964	.78	.569648	6.45	.430352	38
23	.541953	5.67	.971917	.78	.570035	6.45	.429965	37
24	.542293	5.67	.971870	.78	.570422	6.45	.429578	36
25	.542632	5.65	.971823	.78	.570809	6.43	.429191	35
26	.542971	5.65	.971776	.78	.571195	6.43	.428805	34
27	.543310	5.65	.971729	.78	.571581	6.43	.428419	33
28	.543649	5.65	.971682	.78	.571967	6.42	.428033	32
29	.543987	5.63	.971635	.78	.572352	6.43	.427648	31
30	.544325	5.63	.971588	.80	.572738	6.42	.427262	30
31	9.544663	5.62	9.971540	.78	9.573123	6.40	10.426877	29
32	.545000	5.63	.971493	.78	.573507	6.42	.426493	28
33	.545338	5.63	.971446	.80	.573892	6.40	.426108	27
34	.545674	5.60	.971398	.78	.574276	6.40	.425724	26
35	.546011	5.62	.971351	.80	.574660	6.40	.425340	25
36	.546347	5.60	.971303	.78	.575044	6.38	.424956	24
37	.546683	5.60	.971256	.80	.575427	6.38	.424573	23
38	.547019	5.60	.971208	.78	.575810	6.38	.424190	22
39	.547354	5.58	.971161	.80	.576193	6.38	.423807	21
40	.547689	5.58	.971113	.78	.576576	6.38	.423424	20
41	9.548024	5.58	9.971066	.80	9.576959	6.37	10.423041	19
42	.548359	5.57	.971018	.80	.577341	6.37	.422659	18
43	.548693	5.57	.970970	.80	.577723	6.35	.422277	17
44	.549027	5.55	.970922	.80	.578104	6.37	.421896	16
45	.549360	5.55	.970874	.78	.578486	6.35	.421514	15
46	.549693	5.55	.970827	.80	.578867	6.35	.421133	14
47	.550026	5.55	.970779	.80	.579248	6.35	.420752	13
48	.550359	5.55	.970731	.80	.579629	6.33	.420371	12
49	.550692	5.55	.970683	.80	.580009	6.33	.419991	11
50	.551024	5.53	.970635	.82	.580389	6.33	.419611	10
51	9.551356	5.52	9.970586	.80	9.580769	6.33	10.419231	9
52	.551687	5.52	.970538	.80	.581149	6.32	.418851	8
53	.552019	5.52	.970490	.80	.581528	6.32	.418472	7
54	.552349	5.52	.970442	.80	.581907	6.32	.418093	6
55	.552680	5.52	.970394	.82	.582286	6.32	.417714	5
56	.553010	5.50	.970345	.80	.582665	6.32	.417335	4
57	.553341	5.52	.970297	.80	.583041	6.30	.416956	3
58	.553670	5.48	.970249	.82	.583422	6.32	.416578	2
59	.554000	5.50	.970200	.82	.583800	6.28	.416200	1
60'	9.554329	5.48	9.970152	.80	9.584177		10.415823	0'
110°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	69°

21°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	158°
0′	9.554329	5.48	9.970152	.82	9.584177	6.30	10.415823	60′
1	.554658	5.48	.970103	.80	.584555	6.28	.415445	59
2	.554987	5.47	.970055	.82	.584932	6.28	.415068	58
3	.555315	5.47	.970006	.82	.585309	6.28	.414691	57
4	.555643	5.47	.969957	.80	.585686	6.27	.414314	56
5	.555971	5.47	.969909	.82	.586062	6.28	.413938	55
6	.556299	5.47	.969860	.82	.586439	6.28	.413561	54
7	.556626	5.45	.969811	.82	.586815	6.27	.413185	53
8	.556953	5.45	.969762	.82	.587190	6.25	.412810	52
9	.557280	5.45	.969714	.80	.587566	6.27	.412434	51
10	.557606	5.43	.969665	.82	.587941	6.25	.412059	50
11	9.557932	5.43	9.969616	.82	9.588316	6.25	10.411684	49
12	.558258	5.42	.969567	.82	.588691	6.25	.411309	48
13	.558583	5.43	.969518	.82	.589066	6.23	.410934	47
14	.558909	5.42	.969469	.82	.589440	6.23	.410560	46
15	.559234	5.40	.969420	.83	.589814	6.23	.410186	45
16	.559558	5.42	.969370	.82	.590188	6.23	.409812	44
17	.559883	5.40	.969321	.82	.590562	6.22	.409438	43
18	.560207	5.40	.969272	.82	.590935	6.22	.409065	42
19	.560531	5.40	.969223	.83	.591308	6.22	.408692	41
20	.560855	5.38	.969173	.82	.591681	6.22	.408319	40
21	9.561178	5.38	9.969124	.82	9.592054	6.20	10.407946	39
22	.561501	5.38	.969075	.83	.592426	6.22	.407574	38
23	.561824	5.37	.969025	.82	.592799	6.20	.407201	37
24	.562146	5.37	.968976	.83	.593171	6.18	.406829	36
25	.562468	5.37	.968926	.83	.593542	6.20	.406458	35
26	.562790	5.37	.968877	.82	.593914	6.18	.406086	34
27	.563112	5.37	.968827	.83	.594285	6.18	.405715	33
28	.563433	5.35	.968777	.83	.594656	6.18	.405344	32
29	.563755	5.37	.968728	.82	.595027	6.18	.404973	31
30	.564075	5.33	.968678	.83	.595398	6.18	.404602	30
31	9.564396	5.33	9.968628	.83	9.595768	6.17	10.404232	29
32	.564716	5.33	.968578	.83	.596138	6.17	.403862	28
33	.565036	5.33	.968528	.82	.596508	6.17	.403492	27
34	.565356	5.33	.968479	.83	.596878	6.15	.403122	26
35	.565676	5.32	.968429	.83	.597247	6.15	.402753	25
36	.565995	5.32	.968379	.83	.597616	6.15	.402384	24
37	.566314	5.32	.968329	.83	.597985	6.15	.402015	23
38	.566632	5.30	.968278	.85	.598354	6.15	.401646	22
39	.566951	5.32	.968228	.83	.598722	6.13	.401278	21
40	.567269	5.30	.968178	.83	.599091	6.15	.400909	20
41	9.567587	5.28	9.968128	.83	9.599459	6.13	10.400541	19
42	.567904	5.30	.968078	.85	.599827	6.12	.400173	18
43	.568222	5.28	.968027	.83	.600194	6.13	.399806	17
44	.568539	5.28	.967977	.83	.600562	6.13	.399438	16
45	.568856	5.27	.967927	.85	.600929	6.12	.399071	15
46	.569172	5.27	.967876	.83	.601296	6.12	.398704	14
47	.569488	5.27	.967826	.85	.601663	6.12	.398337	13
48	.569804	5.27	.967775	.85	.602029	6.10	.397971	12
49	.570120	5.27	.967725	.83	.602395	6.10	.397605	11
50	.570435	5.27	.967674	.85	.602761	6.10	.397239	10
51	9.570751	5.25	9.967624	.85	9.603127	6.10	10.396873	9
52	.571066	5.28	.967573	.85	.603493	6.08	.396507	8
53	.571380	5.25	.967522	.85	.603858	6.08	.396142	7
54	.571695	5.28	.967471	.83	.604223	6.08	.395777	6
55	.572009	5.28	.967421	.85	.604588	6.06	.395412	5
56	.572323	5.22	.967370	.85	.604953	6.07	.395047	4
57	.572636	5.23	.967319	.85	.605317	6.08	.394683	3
58	.572950	5.22	.967268	.85	.605682	6.07	.394318	2
59	.573263	5.22	.967217	.85	.606046	6.07	.393954	1
60′	9.573575	5.20	9.967166	.85	9.606410	6.07	10.393590	0
111°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	63°

22°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	157°
0'	9.573575	5.22	9.967166	.85	9.606410	6.05	10.393590	60'
1	.573898	5.20	.967115	.85	.606773	6.07	.393227	59
2	.574220	5.20	.967064	.85	.607137	6.05	.392863	58
3	.574542	5.20	.967013	.87	.607500	6.05	.392500	57
4	.574864	5.20	.966961	.87	.607863	6.03	.392137	56
5	.575186	5.18	.966910	.85	.608225	6.05	.391775	55
6	.575447	5.18	.966859	.85	.608588	6.03	.391412	54
7	.575768	5.18	.966808	.87	.608950	6.03	.391050	53
8	.576069	5.17	.966756	.85	.609312	6.03	.390688	52
9	.576379	5.17	.966705	.87	.609674	6.03	.390326	51
10	.576689	5.17	.966653	.85	.610036	6.02	.389964	50
11	9.576999	5.17	9.966602	.87	9.610397	6.03	10.389603	49
12	.577309	5.15	.966550	.85	.610759	6.02	.389241	48
13	.577618	5.15	.966499	.87	.611120	6.00	.388880	47
14	.577927	5.15	.966447	.87	.611480	6.02	.388520	46
15	.578236	5.15	.966395	.85	.611841	6.00	.388159	45
16	.578545	5.13	.966344	.87	.612201	6.00	.387799	44
17	.578853	5.15	.966292	.87	.612561	6.00	.387439	43
18	.579162	5.13	.966240	.87	.612921	6.00	.387079	42
19	.579470	5.12	.966188	.87	.613281	6.00	.386719	41
20	.579777	5.13	.966136	.85	.613641	5.98	.386359	40
21	9.580085	5.12	9.966085	.87	9.614000	5.98	10.385000	39
22	.580392	5.12	.966033	.87	.614359	5.98	.385641	38
23	.580699	5.10	.965981	.87	.614718	5.98	.385282	37
24	.581005	5.12	.965929	.88	.615077	5.97	.384923	36
25	.581312	5.10	.965876	.87	.615435	5.97	.384565	35
26	.581618	5.10	.965824	.87	.615793	5.97	.384207	34
27	.581924	5.08	.965772	.87	.616151	5.97	.383849	33
28	.582229	5.10	.965720	.87	.616509	5.97	.383491	32
29	.582535	5.08	.965668	.88	.616867	5.95	.383133	31
30	.582840	5.08	.965615	.87	.617224	5.97	.382776	30
31	9.583145	5.07	9.965563	.87	9.617582	5.95	10.382418	29
32	.583449	5.08	.965511	.88	.617939	5.93	.382061	28
33	.583754	5.07	.965458	.87	.618296	5.95	.381705	27
34	.584058	5.05	.965406	.88	.618652	5.93	.381348	26
35	.584361	5.07	.965353	.87	.619008	5.93	.380992	25
36	.584665	5.05	.965301	.88	.619364	5.93	.380636	24
37	.584968	5.07	.965248	.88	.619720	5.93	.380280	23
38	.585272	5.03	.965195	.87	.620076	5.93	.379924	22
39	.585574	5.05	.965143	.88	.620432	5.92	.379568	21
40	.585877	5.03	.965090	.88	.620787	5.92	.379213	20
41	9.586179	5.05	9.965037	.88	9.621142	5.92	10.378858	19
42	.586482	5.02	.964984	.88	.621497	5.92	.378503	18
43	.586783	5.03	.964931	.87	.621852	5.92	.378148	17
44	.587085	5.02	.964879	.88	.622207	5.90	.377793	16
45	.587386	5.03	.964826	.88	.622561	5.90	.377439	15
46	.587688	5.02	.964773	.88	.622915	5.90	.377085	14
47	.587989	5.00	.964720	.90	.623269	5.90	.376731	13
48	.588289	5.02	.964666	.88	.623623	5.88	.376377	12
49	.588590	5.02	.964613	.88	.623976	5.90	.376024	11
50	.588890	5.00	.964560	.88	.624330	5.88	.375670	10
51	9.589190	4.98	9.964507	.88	9.624683	5.88	10.375317	9
52	.589489	5.00	.964454	.90	.625036	5.87	.374964	8
53	.589789	4.98	.964400	.88	.625388	5.88	.374612	7
54	.590088	4.98	.964347	.88	.625741	5.87	.374259	6
55	.590387	4.98	.964294	.90	.626093	5.87	.373907	5
56	.590686	4.97	.964240	.88	.626445	5.87	.373555	4
57	.590984	4.97	.964187	.90	.626797	5.87	.373203	3
58	.591282	4.97	.964133	.88	.627149	5.87	.372851	2
59	.591580	4.97	.964080	.90	.627501	5.85	.372499	1
60'	9.591878	4.97	9.964026	.90	9.627852	5.87	10.372148	0'
113°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	67°

23°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	66°
0'	9.591878	4.97	9.964026	.90	9.627852	5.85	10.372148	60'
1	.592176	4.95	.963972	.88	.628303	5.85	.371797	59
2	.592473	4.95	.963919	.90	.628754	5.85	.371445	58
3	.592770	4.95	.963865	.90	.629205	5.83	.371095	57
4	.593067	4.95	.963811	.90	.629655	5.85	.370745	56
5	.593363	4.93	.963757	.88	.630106	5.83	.370394	55
6	.593659	4.93	.963704	.90	.630556	5.83	.370044	54
7	.593955	4.93	.963650	.90	.631006	5.83	.369694	53
8	.594251	4.93	.963596	.90	.631456	5.82	.369344	52
9	.594547	4.92	.963542	.90	.631905	5.83	.368995	51
10	.594842	4.92	.963488	.90	.632355	5.82	.368645	50
11	9.595137	4.92	9.963434	.92	9.632804	5.82	10.368296	49
12	.595432	4.92	.963379	.90	.633253	5.82	.367947	48
13	.595727	4.90	.963325	.90	.633702	5.82	.367598	47
14	.596021	4.90	.963271	.90	.634150	5.80	.367250	46
15	.596315	4.90	.963217	.90	.634599	5.82	.366901	45
16	.596609	4.90	.963163	.90	.635047	5.80	.366553	44
17	.596903	4.88	.963108	.92	.635495	5.80	.366205	43
18	.597196	4.90	.963054	.90	.635943	5.78	.365857	42
19	.597490	4.88	.962999	.90	.636390	5.80	.365510	41
20	.597783	4.87	.962945	.92	.636838	5.78	.365162	40
21	9.598075	4.88	9.962890	.90	9.637285	5.78	10.364815	39
22	.598368	4.87	.962836	.92	.637732	5.78	.364468	38
23	.598660	4.87	.962781	.90	.638179	5.78	.364121	37
24	.598952	4.87	.962727	.92	.638626	5.77	.363774	36
25	.599244	4.87	.962672	.92	.639072	5.78	.363428	35
26	.599536	4.85	.962617	.92	.639519	5.77	.363081	34
27	.599827	4.85	.962562	.90	.639965	5.77	.362735	33
28	.600118	4.85	.962508	.92	.640411	5.75	.362389	32
29	.600409	4.85	.962453	.92	.640856	5.77	.362044	31
30	.600700	4.83	.962398	.92	.641302	5.75	.361698	30
31	9.600990	4.83	9.962343	.92	9.641747	5.75	10.361353	29
32	.601280	4.83	.962288	.92	.642192	5.75	.361008	28
33	.601570	4.83	.962233	.92	.642637	5.75	.360663	27
34	.601860	4.83	.962178	.92	.643082	5.75	.360318	26
35	.602150	4.82	.962123	.93	.643527	5.73	.359973	25
36	.602439	4.82	.962067	.92	.643971	5.75	.359629	24
37	.602728	4.82	.962012	.93	.644416	5.73	.359284	23
38	.603017	4.80	.961957	.92	.644860	5.73	.358940	22
39	.603305	4.82	.961902	.93	.645304	5.72	.358596	21
40	.603594	4.80	.961846	.92	.645747	5.73	.358253	20
41	9.603882	4.80	9.961791	.93	9.646191	5.72	10.357909	19
42	.604170	4.78	.961735	.92	.646634	5.72	.357566	18
43	.604457	4.80	.961680	.93	.647077	5.72	.357223	17
44	.604745	4.78	.961624	.92	.647520	5.72	.356880	16
45	.605032	4.78	.961569	.93	.647963	5.72	.356537	15
46	.605319	4.78	.961513	.92	.648406	5.70	.356194	14
47	.605605	4.77	.961458	.93	.648848	5.70	.355852	13
48	.605892	4.78	.961402	.93	.649290	5.70	.355510	12
49	.606178	4.77	.961346	.93	.649732	5.70	.355168	11
50	.606465	4.77	.961290	.92	.650174	5.70	.354826	10
51	9.606751	4.75	9.961235	.93	9.650616	5.68	10.354484	9
52	.607035	4.77	.961179	.93	.651057	5.70	.354143	8
53	.607322	4.75	.961123	.93	.651499	5.68	.353801	7
54	.607607	4.75	.961067	.93	.651940	5.68	.353460	6
55	.607892	4.75	.961011	.93	.652381	5.68	.353119	5
56	.608177	4.73	.960955	.93	.652822	5.67	.352778	4
57	.608461	4.73	.960899	.93	.653262	5.68	.352438	3
58	.608745	4.73	.960843	.95	.653703	5.67	.352097	2
59	.609029	4.73	.960786	.93	.654143	5.67	.351757	1
60'	9.609313		9.960730		9.654583		10.351417	0'
113°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	65°

24°	Sine.	D. 1″	Cosine.	D. 1″	Tang.	D. 1″	Cotang.	155°
0′	9.609313	4.73	9.960790	.93	9.648583	5.67	10.351417	60′
1	609597	4.72	960674	.93	648923	5.67	351077	59
2	609880	4.73	960618	.95	649263	5.65	350737	58
3	610164	4.72	960561	.93	649602	5.67	350398	57
4	610447	4.70	960505	.95	649942	5.65	350058	56
5	610729	4.72	960448	.93	650281	5.65	349719	55
6	611012	4.70	960392	.95	650620	5.65	349380	54
7	611294	4.70	960335	.93	650959	5.63	349041	53
8	611576	4.70	960279	.95	651297	5.65	348703	52
9	611858	4.70	960222	.95	651636	5.63	348364	51
10	612140	4.68	960165	.93	651974	5.63	348026	50
11	9.612421	4.68	9.960109	.95	9.652312	5.63	10.347688	49
12	612702	4.68	960052	.95	652650	5.63	347350	48
13	612983	4.68	959995	.95	652988	5.63	347012	47
14	613264	4.68	959938	.93	653326	5.62	346674	46
15	613545	4.67	959882	.95	653663	5.62	346337	45
16	613825	4.67	959825	.95	654000	5.62	346000	44
17	614105	4.67	959768	.95	654337	5.62	345663	43
18	614385	4.67	959711	.95	654674	5.62	345326	42
19	614665	4.67	959654	.95	655011	5.62	344989	41
20	614944	4.68	959596	.97	655348	5.62	344652	40
21	9.615223	4.65	9.959539	.95	9.655684	5.60	10.344316	39
22	615502	4.65	959482	.95	656020	5.60	343980	38
23	615781	4.65	959425	.95	656356	5.60	343644	37
24	616060	4.63	959368	.97	656692	5.60	343308	36
25	616338	4.63	959310	.95	657028	5.60	342972	35
26	616616	4.63	959253	.97	657364	5.58	342636	34
27	616894	4.63	959195	.97	657699	5.58	342301	33
28	617172	4.63	959138	.95	658034	5.58	341966	32
29	617450	4.62	959080	.97	658369	5.58	341631	31
30	617727	4.62	959023	.95	658704	5.58	341296	30
31	9.618004	4.62	9.958965	.95	9.659039	5.57	10.340961	29
32	618281	4.62	958908	.97	659373	5.58	340627	28
33	618558	4.62	958850	.97	659708	5.57	340292	27
34	618834	4.60	958792	.97	660042	5.57	339958	26
35	619110	4.60	958734	.97	660376	5.57	339624	25
36	619386	4.60	958677	.95	660710	5.57	339290	24
37	619662	4.60	958619	.97	661043	5.55	338957	23
38	619938	4.60	958561	.97	661377	5.57	338623	22
39	620213	4.58	958503	.97	661710	5.55	338290	21
40	620488	4.58	958445	.97	662043	5.55	337957	20
41	9.620763	4.58	9.958387	.97	9.662376	5.55	10.337624	19
42	621038	4.58	958329	.97	662709	5.55	337291	18
43	621313	4.57	958271	.97	663042	5.55	336958	17
44	621587	4.57	958213	.98	663375	5.53	336625	16
45	621861	4.57	958154	.97	663707	5.53	336293	15
46	622135	4.57	958096	.97	664039	5.53	335961	14
47	622409	4.57	958038	.97	664371	5.53	335629	13
48	622682	4.55	957979	.98	664703	5.53	335297	12
49	622956	4.57	957921	.97	665035	5.53	334965	11
50	623229	4.55	957863	.97	665366	5.53	334634	10
51	9.623502	4.53	9.957804	.97	9.665698	5.52	10.334302	9
52	623774	4.55	957746	.98	666029	5.52	333971	8
53	624047	4.53	957687	.98	666360	5.52	333640	7
54	624319	4.53	957628	.97	666691	5.52	333309	6
55	624591	4.53	957570	.97	667021	5.50	332979	5
56	624863	4.53	957511	.98	667352	5.52	332648	4
57	625135	4.53	957452	.98	667682	5.50	332318	3
58	625406	4.52	957393	.98	668013	5.52	331987	2
59	625677	4.52	957335	.97	668343	5.50	331657	1
60′	9.625948	4.52	9.957276	.98	9.668673	5.50	10.331327	0
114°	Cosine.	D. 1″.	Sine.	D. 1″.	Cotang.	D. 1″.	Tang.	65°

25°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	154°
0′	9.625948		9.957276		9.668673		10.331327	60′
1	.626219	4.53	.957217	.98	.669002	5.48	.330998	59
2	.626490	4.52	.957158	.98	.669332	5.50	.330668	58
3	.626760	4.52	.957099	.98	.669661	5.48	.330339	57
4	.627030	4.50	.957040	.98	.669991	5.50	.330009	56
5	.627300	4.50	.956981	1.00	.670320	5.48	.329680	55
6	.627570	4.50	.956921	.98	.670649	5.48	.329351	54
7	.627840	4.50	.956862	.98	.670977	5.47	.329023	53
8	.628109	4.48	.956803	.98	.671306	5.48	.328694	52
9	.628378	4.48	.956744	1.00	.671635	5.48	.328365	51
10	.628647	4.48	.956684	.98	.671963	5.47	.328037	50
11	9.628916	4.48	9.956625	.98	9.672291	5.47	10.327709	49
12	.629185	4.48	.956566	1.00	.672619	5.47	.327381	48
13	.629453	4.47	.956506	.98	.672947	5.45	.327053	47
14	.629721	4.47	.956447	1.00	.673274	5.47	.326726	46
15	.629989	4.47	.956387	1.00	.673602	5.45	.326398	45
16	.630257	4.47	.956327	.98	.673929	5.47	.326071	44
17	.630524	4.45	.956268	1.00	.674257	5.45	.325743	43
18	.630792	4.47	.956208	1.00	.674584	5.45	.325416	42
19	.631059	4.45	.956148	.98	.674911	5.45	.325089	41
20	.631325	4.45	.956089	1.00	.675237	5.45	.324763	40
21	9.631593	4.43	9.956029	1.00	9.675564	5.43	10.324436	39
22	.631859	4.43	.955969	1.00	.675890	5.45	.324110	38
23	.632125	4.43	.955909	1.00	.676217	5.43	.323783	37
24	.632392	4.45	.955849	1.00	.676543	5.43	.323457	36
25	.632658	4.43	.955789	1.00	.676869	5.42	.323131	35
26	.632923	4.42	.955729	1.00	.677194	5.43	.322806	34
27	.633189	4.43	.955669	1.00	.677520	5.43	.322480	33
28	.633454	4.42	.955609	.98	.677846	5.42	.322154	32
29	.633719	4.42	.955548	1.00	.678171	5.42	.321829	31
30	.633984	4.42	.955488	1.00	.678496	5.42	.321504	30
31	9.634249	4.42	9.955428	1.00	9.678821	5.42	10.321179	29
32	.634514	4.40	.955368	1.02	.679146	5.42	.320854	28
33	.634778	4.40	.955307	1.00	.679471	5.40	.320529	27
34	.635042	4.40	.955247	1.02	.679795	5.42	.320205	26
35	.635306	4.40	.955186	1.00	.680120	5.40	.319880	25
36	.635570	4.40	.955126	1.02	.680444	5.40	.319556	24
37	.635834	4.38	.955065	1.00	.680768	5.40	.319232	23
38	.636097	4.38	.955005	1.02	.681092	5.40	.318908	22
39	.636360	4.38	.954944	1.02	.681416	5.40	.318584	21
40	.636623	4.38	.954883	1.00	.681740	5.38	.318260	20
41	9.636886	4.37	9.954823	1.02	9.682063	5.40	10.317937	19
42	.637149	4.38	.954762	1.02	.682387	5.38	.317613	18
43	.637411	4.37	.954701	1.02	.682710	5.38	.317290	17
44	.637673	4.37	.954640	1.02	.683033	5.38	.316967	16
45	.637935	4.37	.954579	1.02	.683356	5.38	.316644	15
46	.638197	4.35	.954518	1.02	.683679	5.37	.316321	14
47	.638458	4.37	.954457	1.02	.684001	5.38	.315999	13
48	.638720	4.35	.954396	1.02	.684324	5.37	.315676	12
49	.638981	4.35	.954335	1.02	.684646	5.37	.315354	11
50	.639242	4.35	.954274	1.02	.684968	5.37	.315032	10
51	9.639503	4.35	9.954213	1.02	9.685290	5.37	10.314710	9
52	.639764	4.33	.954152	1.03	.685612	5.37	.314388	8
53	.640024	4.33	.954090	1.02	.685934	5.35	.314066	7
54	.640284	4.33	.954029	1.02	.686255	5.37	.313745	6
55	.640544	4.33	.953968	1.03	.686577	5.35	.313423	5
56	.640804	4.33	.953906	1.02	.686898	5.35	.313102	4
57	.641064	4.33	.953845	1.03	.687219	5.35	.312781	3
58	.641324	4.32	.953783	1.02	.687540	5.35	.312460	2
59	.641583	4.32	.953722	1.03	.687861	5.35	.312139	1
60′	9.641842		9.953660		9.688182		10.311818	0′
115°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	64°

26°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	153°
0'	9.641842	4.33	9.953660	1.02	9.688182	5.33	10.311818	60'
1	.642101	4.32	.953599	1.03	.688502	5.33	.311498	59
2	.642360	4.30	.953537	1.03	.688823	5.33	.311177	58
3	.642618	4.32	.953475	1.03	.689143	5.33	.310857	57
4	.642877	4.30	.953413	1.02	.689463	5.33	.310537	56
5	.643135	4.30	.953352	1.03	.689783	5.33	.310217	55
6	.643393	4.28	.953290	1.03	.690103	5.33	.309897	54
7	.643650	4.30	.953228	1.03	.690423	5.32	.309577	53
8	.643908	4.28	.953166	1.03	.690742	5.32	.309258	52
9	.644165	4.30	.953104	1.03	.691062	5.33	.308938	51
10	.644423	4.28	.953042	1.03	.691381	5.32	.308619	50
11	9.644680	4.27	9.952980	1.03	9.691700	5.32	10.308300	49
12	.644936	4.28	.952918	1.05	.692019	5.32	.307981	48
13	.645193	4.28	.952855	1.03	.692338	5.30	.307662	47
14	.645450	4.27	.952793	1.03	.692656	5.32	.307344	46
15	.645706	4.27	.952731	1.03	.692975	5.30	.307025	45
16	.645962	4.27	.952669	1.05	.693293	5.32	.306707	44
17	.646218	4.27	.952606	1.03	.693612	5.30	.306388	43
18	.646474	4.25	.952544	1.05	.693930	5.30	.306070	42
19	.646729	4.25	.952481	1.03	.694248	5.30	.305752	41
20	.646984	4.27	.952419	1.05	.694566	5.28	.305434	40
21	9.647240	4.23	9.952356	1.03	9.694883	5.30	10.305117	39
22	.647494	4.25	.952294	1.05	.695201	5.28	.304799	38
23	.647749	4.25	.952231	1.05	.695518	5.30	.304482	37
24	.648004	4.23	.952168	1.03	.695836	5.28	.304164	36
25	.648258	4.23	.952106	1.05	.696153	5.28	.303847	35
26	.648512	4.23	.952043	1.05	.696470	5.28	.303530	34
27	.648766	4.23	.951980	1.05	.696787	5.28	.303213	33
28	.649020	4.23	.951917	1.05	.697103	5.27	.302897	32
29	.649274	4.22	.951854	1.05	.697420	5.28	.302580	31
30	.649527	4.23	.951791	1.05	.697736	5.27	.302264	30
31	9.649781	4.22	9.951728	1.05	9.698053	5.27	10.301947	29
32	.650034	4.22	.951665	1.05	.698369	5.27	.301631	28
33	.650287	4.20	.951602	1.05	.698685	5.27	.301315	27
34	.650539	4.22	.951539	1.05	.699001	5.25	.300999	26
35	.650792	4.23	.951476	1.07	.699316	5.27	.300684	25
36	.651044	4.22	.951412	1.05	.699632	5.25	.300368	24
37	.651297	4.20	.951349	1.05	.699947	5.27	.300053	23
38	.651549	4.18	.951286	1.07	.700263	5.27	.299737	22
39	.651800	4.20	.951222	1.05	.700578	5.25	.299422	21
40	.652052	4.20	.951159	1.05	.700893	5.25	.299107	20
41	9.652304	4.18	9.951096	1.07	9.701208	5.25	10.298792	19
42	.652555	4.18	.951032	1.07	.701523	5.23	.298477	18
43	.652806	4.18	.950968	1.05	.701837	5.25	.298163	17
44	.653057	4.18	.950905	1.07	.702152	5.23	.297848	16
45	.653308	4.18	.950841	1.05	.702466	5.23	.297534	15
46	.653558	4.17	.950778	1.07	.702781	5.23	.297219	14
47	.653808	4.17	.950714	1.07	.703095	5.23	.296905	13
48	.654059	4.18	.950650	1.07	.703409	5.23	.296591	12
49	.654309	4.17	.950586	1.07	.703722	5.23	.296278	11
50	.654558	4.15	.950522	1.07	.704036	5.23	.295964	10
51	9.654808	4.17	9.950458	1.07	9.704350	5.22	10.295650	9
52	.655058	4.15	.950394	1.07	.704663	5.22	.295337	8
53	.655307	4.15	.950330	1.07	.704976	5.23	.295024	7
54	.655556	4.15	.950265	1.07	.705290	5.22	.294710	6
55	.655805	4.15	.950202	1.07	.705603	5.22	.294397	5
56	.656054	4.15	.950138	1.07	.705916	5.20	.294084	4
57	.656302	4.18	.950074	1.07	.706228	5.22	.293772	3
58	.656551	4.15	.950010	1.07	.706541	5.22	.293459	2
59	.656799	4.18	.949945	1.08	.706854	5.20	.293146	1
60'	9.657047	4.13	9.949881	1.07	9.707166		10.292834	0'
116°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	63°

27°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	152°
0'	9.657047	4.13	9.949881	1.08	9.707166	5.20	10.292834	60'
1	.657295	4.12	.949816	1.07	.707478	5.20	.292522	59
2	.657542	4.13	.949752	1.07	.707790	5.20	.292210	58
3	.657790	4.12	.949688	1.08	.708102	5.20	.291898	57
4	.658037	4.12	.949623	1.08	.708414	5.20	.291586	56
5	.658284	4.12	.949558	1.07	.708726	5.19	.291274	55
6	.658531	4.12	.949494	1.08	.709037	5.20	.290963	54
7	.658778	4.12	.949429	1.08	.709349	5.18	.290651	53
8	.659025	4.10	.949364	1.07	.709660	5.18	.290340	52
9	.659271	4.10	.949300	1.08	.709971	5.18	.290029	51
10	.659517	4.10	.949235	1.08	.710282	5.18	.289718	50
11	9.659763	4.10	9.949170	1.08	9.710593	5.18	10.289407	49
12	.660009	4.10	.949105	1.08	.710904	5.18	.289096	48
13	.660255	4.10	.949040	1.08	.711215	5.17	.288785	47
14	.660501	4.08	.948975	1.08	.711525	5.18	.288475	46
15	.660746	4.08	.948910	1.08	.711836	5.17	.288164	45
16	.660991	4.08	.948845	1.08	.712146	5.17	.287854	44
17	.661236	4.08	.948780	1.08	.712456	5.17	.287544	43
18	.661481	4.08	.948715	1.08	.712765	5.17	.287234	42
19	.661726	4.08	.948650	1.10	.713076	5.17	.286924	41
20	.661970	4.07	.948584	1.08	.713386	5.17	.286614	40
21	9.662214	4.08	9.948519	1.08	9.713696	5.15	10.286304	39
22	.662459	4.07	.948454	1.10	.714005	5.15	.285995	38
23	.662703	4.05	.948388	1.08	.714314	5.17	.285686	37
24	.662946	4.07	.948323	1.10	.714624	5.15	.285376	36
25	.663190	4.07	.948257	1.10	.714933	5.15	.285067	35
26	.663433	4.05	.948192	1.08	.715242	5.15	.284758	34
27	.663677	4.07	.948126	1.10	.715551	5.15	.284449	33
28	.663920	4.05	.948060	1.10	.715860	5.15	.284140	32
29	.664163	4.05	.947995	1.08	.716168	5.15	.283832	31
30	.664406	4.05	.947929	1.10	.716477	5.13	.283523	30
31	9.664648	4.03	9.947863	1.10	9.716785	5.13	10.283215	29
32	.664891	4.03	.947797	1.10	.717093	5.13	.282907	28
33	.665133	4.03	.947731	1.10	.717401	5.13	.282599	27
34	.665375	4.03	.947665	1.08	.717709	5.13	.282291	26
35	.665617	4.03	.947600	1.12	.718017	5.13	.281983	25
36	.665859	4.02	.947533	1.10	.718325	5.13	.281675	24
37	.666100	4.03	.947467	1.10	.718633	5.12	.281367	23
38	.666342	4.02	.947401	1.10	.718940	5.13	.281060	22
39	.666583	4.02	.947335	1.10	.719248	5.12	.280752	21
40	.666824	4.02	.947269	1.10	.719555	5.12	.280445	20
41	9.667065	4.00	9.947203	1.12	9.719862	5.12	10.280138	19
42	.667305	4.02	.947136	1.10	.720169	5.12	.279831	18
43	.667546	4.00	.947070	1.10	.720476	5.13	.279524	17
44	.667786	4.02	.947004	1.12	.720783	5.10	.279217	16
45	.668027	4.00	.946937	1.10	.721089	5.12	.278911	15
46	.668267	3.98	.946871	1.12	.721396	5.10	.278604	14
47	.668506	4.00	.946804	1.10	.721702	5.12	.278298	13
48	.668746	4.00	.946738	1.12	.722009	5.10	.277991	12
49	.668986	3.98	.946671	1.12	.722315	5.10	.277685	11
50	.669225	3.98	.946604	1.10	.722621	5.10	.277379	10
51	9.669464	3.98	9.946538	1.12	9.722927	5.08	10.277073	9
52	.669703	3.98	.946471	1.12	.723233	5.10	.276767	8
53	.669942	3.98	.946404	1.12	.723538	5.10	.276462	7
54	.670181	3.97	.946337	1.12	.723844	5.09	.276156	6
55	.670419	3.98	.946270	1.12	.724149	5.08	.275851	5
56	.670658	3.97	.946203	1.12	.724454	5.10	.275546	4
57	.670896	3.97	.946136	1.12	.724760	5.08	.275240	3
58	.671134	3.97	.946069	1.12	.725065	5.08	.274935	2
59	.671372	3.95	.946002	1.12	.725370	5.07	.274630	1
60	9.671609		9.945935		9.725674		10.274326	0'
117°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	62°

28°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	151°
0′	9.671609	3.97	9.945935	1.12	9.725674	5.08	10.274326	60′
1	.671847	3.95	.945868	1.13	.725979	5.08	.274021	59
2	.672084	3.95	.945800	1.12	.726284	5.07	.273716	58
3	.672321	3.95	.945733	1.12	.726588	5.07	.273412	57
4	.672558	3.95	.945666	1.13	.726892	5.08	.273108	56
5	.672795	3.95	.945598	1.12	.727197	5.07	.272803	55
6	.673032	3.95	.945531	1.12	.727501	5.07	.272499	54
7	.673268	3.93	.945464	1.12	.727805	5.07	.272195	53
8	.673505	3.95	.945396	1.13	.728109	5.07	.271891	52
9	.673741	3.93	.945328	1.13	.728413	5.05	.271588	51
10	.673977	3.93	.945261	1.12	.728716	5.07	.271284	50
11	9.674213	3.93	9.945193	1.13	9.729020	5.07	10.270980	49
12	.674448	3.92	.945125	1.12	.729323	5.05	.270677	48
13	.674684	3.93	.945058	1.13	.729626	5.05	.270374	47
14	.674919	3.92	.944990	1.13	.729929	5.05	.270071	46
15	.675155	3.93	.944922	1.13	.730233	5.07	.269767	45
16	.675390	3.92	.944854	1.13	.730535	5.03	.269465	44
17	.675624	3.90	.944786	1.13	.730838	5.05	.269162	43
18	.675859	3.92	.944718	1.13	.731141	5.05	.268859	42
19	.676094	3.92	.944650	1.13	.731444	5.05	.268556	41
20	.676328	3.90	.944582	1.13	.731746	5.03	.268254	40
21	9.676562	3.90	9.944514	1.13	9.732048	5.03	10.267952	39
22	.676796	3.90	.944446	1.15	.732351	5.03	.267649	38
23	.677030	3.90	.944377	1.13	.732653	5.03	.267347	37
24	.677264	3.90	.944309	1.13	.732955	5.03	.267045	36
25	.677498	3.90	.944241	1.13	.733257	5.03	.266743	35
26	.677731	3.88	.944172	1.15	.733558	5.02	.266442	34
27	.677964	3.88	.944104	1.13	.733860	5.03	.266140	33
28	.678197	3.88	.944036	1.13	.734162	5.03	.265838	32
29	.678430	3.88	.943967	1.15	.734463	5.02	.265537	31
30	.678663	3.88	.943899	1.13	.734764	5.03	.265236	30
31	9.678895	3.87	9.943830	1.15	9.735066	5.02	10.264934	29
32	.679128	3.88	.943761	1.13	.735367	5.02	.264633	28
33	.679360	3.87	.943693	1.15	.735668	5.02	.264332	27
34	.679592	3.87	.943624	1.15	.735969	5.02	.264031	26
35	.679824	3.87	.943555	1.15	.736269	5.00	.263731	25
36	.680056	3.87	.943486	1.15	.736570	5.02	.263430	24
37	.680288	3.87	.943417	1.15	.736870	5.00	.263130	23
38	.680519	3.85	.943348	1.15	.737171	5.02	.262829	22
39	.680750	3.85	.943279	1.15	.737471	5.00	.262529	21
40	.680982	3.87	.943210	1.15	.737771	5.00	.262229	20
41	9.681213	3.85	9.943141	1.15	9.738071	5.00	10.261929	19
42	.681443	3.83	.943072	1.15	.738371	5.00	.261629	18
43	.681674	3.85	.943003	1.15	.738671	5.00	.261329	17
44	.681905	3.85	.942934	1.15	.738971	5.00	.261029	16
45	.682135	3.83	.942864	1.17	.739271	4.98	.260729	15
46	.682365	3.83	.942795	1.15	.739570	5.00	.260430	14
47	.682595	3.83	.942726	1.17	.739870	4.98	.260130	13
48	.682825	3.83	.942656	1.15	.740169	4.98	.259831	12
49	.683055	3.83	.942587	1.15	.740468	4.98	.259532	11
50	.683284	3.82	.942517	1.17	.740767	4.98	.259233	10
51	9.683514	3.83	9.942448	1.17	9.741066	4.98	10.258934	9
52	.683743	3.82	.942378	1.17	.741365	4.98	.258635	8
53	.683972	3.82	.942308	1.15	.741664	4.97	.258336	7
54	.684201	3.82	.942239	1.17	.741962	4.98	.258038	6
55	.684430	3.82	.942169	1.17	.742261	4.97	.257739	5
56	.684658	3.80	.942099	1.17	.742559	4.97	.257441	4
57	.684887	3.82	.942029	1.17	.742858	4.98	.257142	3
58	.685115	3.80	.941959	1.17	.743156	4.97	.256844	2
59	.685343	3.80	.941889	1.17	.743454	4.97	.256546	1
60′	9.685571	3.80	9.941819	1.17	9.743752	4.97	10.256248	0′
118°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	61°

29°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	150°
0'	9.685571	3.80	9.941819	1.17	9.743752	4.97	10.256248	60'
1	.685793	3.80	.941749	1.17	.744060	4.97	.255950	59
2	.686027	3.78	.941679	1.17	.744348	4.95	.255662	58
3	.686254	3.80	.941609	1.17	.744645	4.97	.255355	57
4	.686482	3.78	.941539	1.17	.744943	4.95	.255057	56
5	.686709	3.78	.941469	1.18	.745240	4.97	.254760	55
6	.686936	3.78	.941399	1.17	.745538	4.95	.254462	54
7	.687163	3.77	.941328	1.17	.745835	4.95	.254165	53
8	.687389	3.78	.941258	1.18	.746132	4.95	.253868	52
9	.687616	3.78	.941187	1.17	.746429	4.95	.253571	51
10	.687843	3.77	.941117	1.18	.746726	4.95	.253274	50
11	9.688069	3.77	9.941046	1.18	9.747023	4.93	10.252977	49
12	.688295	3.77	.940975	1.17	.747319	4.95	.252681	48
13	.688521	3.77	.940905	1.18	.747616	4.95	.252384	47
14	.688747	3.75	.940834	1.18	.747913	4.93	.252087	46
15	.688972	3.77	.940763	1.17	.748209	4.93	.251791	45
16	.689198	3.75	.940693	1.18	.748505	4.93	.251495	44
17	.689423	3.75	.940622	1.18	.748801	4.93	.251199	43
18	.689648	3.75	.940551	1.18	.749097	4.93	.250903	42
19	.689873	3.75	.940480	1.18	.749393	4.93	.250607	41
20	.690098	3.75	.940409	1.18	.749689	4.93	.250311	40
21	9.690323	3.75	9.940338	1.18	9.749985	4.93	10.250015	39
22	.690548	3.73	.940267	1.18	.750281	4.92	.249719	38
23	.690772	3.73	.940196	1.18	.750576	4.93	.249424	37
24	.690996	3.73	.940125	1.18	.750872	4.92	.249128	36
25	.691220	3.73	.940054	1.20	.751167	4.92	.248833	35
26	.691444	3.73	.939982	1.18	.751462	4.92	.248538	34
27	.691668	3.73	.939911	1.18	.751757	4.92	.248243	33
28	.691892	3.73	.939840	1.18	.752052	4.92	.247948	32
29	.692115	3.72	.939768	1.20	.752347	4.92	.247653	31
30	.692339	3.73	.939697	1.18	.752642	4.92	.247358	30
31	9.692562	3.72	9.939625	1.18	9.752937	4.90	10.247063	29
32	.692785	3.72	.939554	1.20	.753231	4.92	.246769	28
33	.693008	3.73	.939482	1.20	.753526	4.90	.246474	27
34	.693231	3.70	.939410	1.18	.753820	4.92	.246180	26
35	.693453	3.72	.939339	1.20	.754115	4.90	.245885	25
36	.693676	3.72	.939267	1.20	.754409	4.90	.245591	24
37	.693898	3.70	.939195	1.20	.754703	4.90	.245297	23
38	.694120	3.70	.939123	1.20	.754997	4.90	.245003	22
39	.694342	3.70	.939052	1.18	.755291	4.90	.244709	21
40	.694564	3.70	.938980	1.20	.755585	4.88	.244415	20
41	9.694786	3.68	9.938908	1.20	9.755878	4.90	10.244122	19
42	.695007	3.70	.938836	1.22	.756172	4.88	.243828	18
43	.695229	3.68	.938763	1.20	.756465	4.90	.243535	17
44	.695450	3.68	.938691	1.20	.756759	4.88	.243241	16
45	.695671	3.68	.938619	1.20	.757052	4.88	.242948	15
46	.695892	3.68	.938547	1.20	.757345	4.88	.242655	14
47	.696113	3.68	.938475	1.20	.757638	4.88	.242362	13
48	.696334	3.68	.938402	1.22	.757931	4.88	.242069	12
49	.696554	3.67	.938330	1.20	.758224	4.88	.241776	11
50	.696775	3.68	.938258	1.22	.758517	4.88	.241483	10
51	9.696995	3.67	9.938185	1.20	9.758810	4.87	10.241190	9
52	.697215	3.67	.938113	1.22	.759102	4.88	.240898	8
53	.697435	3.67	.938040	1.22	.759395	4.87	.240605	7
54	.697654	3.67	.937967	1.20	.759687	4.87	.240313	6
55	.697874	3.67	.937895	1.22	.759979	4.88	.240021	5
56	.698094	3.67	.937822	1.22	.760272	4.87	.239728	4
57	.698313	3.65	.937749	1.23	.760564	4.87	.239436	3
58	.698532	3.65	.937676	1.23	.760856	4.87	.239144	2
59	.698751	3.65	.937604	1.20	.761148	4.85	.238852	1
60'	9.698970	3.65	9.937531	1.22	9.761439	4.87	10.238561	0'
119°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	60°

13°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	14°
0'	9.699970	3.65	9.937531	1.22	9.761439	4.87	10.238561	60'
1	.699189	3.63	.937458	1.22	.761731	4.87	.238269	59
2	.699407	3.63	.937385	1.22	.762023	4.85	.237977	58
3	.699626	3.63	.937312	1.23	.762314	4.87	.237686	57
4	.699844	3.63	.937238	1.22	.762606	4.85	.237394	56
5	.700062	3.63	.937165	1.22	.762897	4.85	.237103	55
6	.700280	3.63	.937092	1.22	.763188	4.85	.236812	54
7	.700498	3.63	.937019	1.22	.763479	4.85	.236521	53
8	.700716	3.62	.936946	1.23	.763770	4.85	.236230	52
9	.700933	3.63	.936872	1.22	.764061	4.85	.235939	51
10	.701151	3.62	.936799	1.23	.764352	4.85	.235648	50
11	9.701368	3.62	9.936725	1.22	9.764643	4.83	10.235357	49
12	.701585	3.62	.936652	1.22	.764933	4.85	.235067	48
13	.701802	3.62	.936578	1.22	.765224	4.83	.234776	47
14	.702019	3.62	.936505	1.23	.765514	4.85	.234486	46
15	.702236	3.60	.936431	1.23	.765805	4.83	.234195	45
16	.702452	3.62	.936357	1.23	.766095	4.83	.233905	44
17	.702669	3.60	.936284	1.23	.766385	4.83	.233615	43
18	.702885	3.60	.936210	1.23	.766675	4.83	.233325	42
19	.703101	3.60	.936136	1.23	.766965	4.83	.233035	41
20	.703317	3.60	.936062	1.23	.767255	4.83	.232745	40
21	9.703533	3.60	9.935988	1.23	9.767545	4.82	10.232455	39
22	.703749	3.58	.935914	1.23	.767834	4.83	.232166	38
23	.703964	3.58	.935840	1.23	.768124	4.83	.231876	37
24	.704179	3.60	.935766	1.23	.768414	4.82	.231586	36
25	.704395	3.58	.935692	1.23	.768703	4.82	.231297	35
26	.704610	3.58	.935618	1.23	.768992	4.82	.231008	34
27	.704825	3.58	.935543	1.23	.769281	4.83	.230719	33
28	.705040	3.57	.935469	1.23	.769571	4.82	.230429	32
29	.705254	3.58	.935395	1.23	.769860	4.80	.230140	31
30	.705469	3.57	.935320	1.23	.770148	4.82	.229852	30
31	9.705683	3.58	9.935246	1.23	9.770437	4.82	10.229563	29
32	.705898	3.57	.935171	1.23	.770726	4.82	.229274	28
33	.706112	3.57	.935097	1.23	.771015	4.80	.228985	27
34	.706326	3.55	.935022	1.23	.771303	4.82	.228697	26
35	.706539	3.57	.934948	1.23	.771592	4.80	.228408	25
36	.706753	3.57	.934873	1.23	.771880	4.80	.228120	24
37	.706967	3.55	.934798	1.23	.772168	4.82	.227832	23
38	.707180	3.55	.934723	1.23	.772457	4.80	.227543	22
39	.707393	3.55	.934649	1.23	.772745	4.80	.227255	21
40	.707606	3.55	.934574	1.23	.773033	4.80	.226967	20
41	9.707819	3.55	9.934499	1.23	9.773321	4.78	10.226679	19
42	.708032	3.55	.934424	1.23	.773608	4.80	.226392	18
43	.708245	3.55	.934349	1.23	.773896	4.80	.226104	17
44	.708456	3.53	.934274	1.23	.774184	4.78	.225816	16
45	.708670	3.53	.934199	1.23	.774471	4.80	.225529	15
46	.708882	3.53	.934123	1.23	.774759	4.78	.225241	14
47	.709094	3.53	.934048	1.23	.775046	4.78	.224954	13
48	.709306	3.53	.933973	1.23	.775333	4.80	.224667	12
49	.709518	3.53	.933898	1.23	.775621	4.78	.224379	11
50	.709730	3.52	.933822	1.23	.775908	4.78	.224092	10
51	9.709941	3.53	9.933747	1.23	9.776195	4.78	10.223805	9
52	.710153	3.52	.933671	1.23	.776482	4.77	.223518	8
53	.710364	3.52	.933596	1.23	.776768	4.78	.223232	7
54	.710575	3.52	.933520	1.23	.777055	4.78	.222945	6
55	.710786	3.53	.933445	1.23	.777342	4.77	.222658	5
56	.710997	3.52	.933369	1.23	.777628	4.78	.222372	4
57	.711208	3.52	.933293	1.23	.777915	4.77	.222085	3
58	.711419	3.50	.933217	1.23	.778201	4.78	.221799	2
59	.711629	3.50	.933141	1.23	.778488	4.77	.221512	1
60'	9.711839		9.933066		9.778774		10.221226	0'
120°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	69°

31°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	145°
0'	9.711839	3.52	9.933006	1.27	9.778774	4.77	10.221226	60'
1	.712060	3.50	.932999	1.27	.779060	4.77	.220940	59
2	.712280	3.48	.932914	1.27	.779346	4.77	.220654	58
3	.712499	3.50	.932858	1.27	.779632	4.77	.220368	57
4	.712679	3.50	.932702	1.28	.779918	4.75	.220082	56
5	.712882	3.50	.932695	1.27	.780203	4.77	.219797	55
6	.713098	3.48	.932609	1.27	.780489	4.77	.219511	54
7	.713306	3.50	.932553	1.27	.780775	4.75	.219225	53
8	.713517	3.48	.932437	1.27	.781060	4.77	.218940	52
9	.713726	3.48	.932380	1.28	.781346	4.77	.218654	51
10	.713935	3.48	.932304	1.27	.781631	4.75	.218369	50
11	9.714144	3.47	9.932228	1.28	9.781916	4.75	10.218084	49
12	.714352	3.48	.932151	1.27	.782201	4.75	.217799	48
13	.714561	3.47	.932075	1.28	.782486	4.75	.217514	47
14	.714769	3.48	.931998	1.28	.782771	4.75	.217229	46
15	.714978	3.47	.931921	1.27	.783056	4.75	.216944	45
16	.715186	3.47	.931845	1.28	.783341	4.75	.216659	44
17	.715394	3.47	.931768	1.28	.783626	4.73	.216374	43
18	.715602	3.47	.931691	1.28	.783910	4.75	.216090	42
19	.715809	3.45	.931614	1.28	.784195	4.73	.215805	41
20	.716017	3.47	.931537	1.28	.784479	4.75	.215521	40
21	9.716224	3.47	9.931460	1.28	9.784764	4.73	10.215236	39
22	.716432	3.45	.931383	1.28	.785048	4.73	.214952	38
23	.716639	3.45	.931306	1.28	.785332	4.73	.214668	37
24	.716846	3.45	.931229	1.28	.785616	4.73	.214384	36
25	.717053	3.43	.931152	1.28	.785900	4.73	.214100	35
26	.717259	3.45	.931075	1.28	.786184	4.73	.213816	34
27	.717466	3.45	.930998	1.28	.786468	4.73	.213532	33
28	.717673	3.43	.930921	1.30	.786752	4.73	.213248	32
29	.717879	3.43	.930843	1.28	.787036	4.73	.212964	31
30	.718085	3.43	.930766	1.30	.787319	4.73	.212681	30
31	9.718291	3.43	9.930688	1.28	9.787603	4.72	10.212397	29
32	.718497	3.43	.930611	1.30	.787886	4.73	.212114	28
33	.718703	3.43	.930533	1.28	.788170	4.72	.211830	27
34	.718909	3.42	.930456	1.30	.788453	4.72	.211547	26
35	.719114	3.43	.930378	1.30	.788736	4.72	.211264	25
36	.719320	3.42	.930300	1.28	.789019	4.72	.210981	24
37	.719525	3.42	.930223	1.30	.789302	4.72	.210698	23
38	.719730	3.42	.930145	1.30	.789585	4.72	.210415	22
39	.719935	3.42	.930067	1.30	.789868	4.72	.210132	21
40	.720140	3.42	.929989	1.30	.790151	4.72	.209849	20
41	9.720345	3.40	9.929911	1.30	9.790434	4.70	10.209566	19
42	.720549	3.42	.929833	1.30	.790716	4.72	.209284	18
43	.720754	3.42	.929755	1.32	.790999	4.70	.209001	17
44	.720958	3.40	.929677	1.30	.791281	4.70	.208719	16
45	.721162	3.40	.929599	1.30	.791563	4.72	.208437	15
46	.721366	3.40	.929521	1.32	.791846	4.70	.208154	14
47	.721570	3.40	.929443	1.30	.792128	4.70	.207872	13
48	.721774	3.40	.929364	1.30	.792410	4.70	.207590	12
49	.721978	3.38	.929286	1.32	.792692	4.70	.207308	11
50	.722181	3.40	.929207	1.30	.792974	4.70	.207026	10
51	9.722385	3.38	9.929129	1.32	9.793256	4.70	10.206744	9
52	.722588	3.38	.929050	1.30	.793538	4.68	.206462	8
53	.722791	3.38	.928972	1.32	.793819	4.70	.206181	7
54	.722994	3.38	.928893	1.30	.794101	4.70	.205899	6
55	.723197	3.38	.928815	1.32	.794383	4.68	.205617	5
56	.723400	3.38	.928736	1.32	.794664	4.70	.205336	4
57	.723603	3.37	.928657	1.32	.794946	4.68	.205054	3
58	.723805	3.37	.928578	1.32	.795227	4.68	.204773	2
59	.724007	3.38	.928499	1.32	.795508	4.68	.204492	1
60'	9.724210		9.928420		9.795789		10.204211	0'
111°	Cosine.	D. 1'	Sine.	D. 1".	Cotang.	D. 1".	Tang.	68°

32°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	147°
0'	9.724210	3.37	9.928420	1.30	9.795789	4.68	10.204211	60'
1	.724412	3.37	.928342	1.32	.795900	4.68	.203930	59
2	.724614	3.37	.928263	1.33	.796351	4.68	.203649	58
3	.724816	3.37	.928183	1.33	.796632	4.68	.203368	57
4	.725017	3.35	.928104	1.32	.796913	4.68	.203087	56
5	.725219	3.37	.928025	1.32	.797194	4.67	.202806	55
6	.725420	3.35	.927946	1.32	.797474	4.66	.202526	54
7	.725622	3.37	.927867	1.33	.797755	4.68	.202245	53
8	.725823	3.35	.927787	1.33	.798036	4.67	.201964	52
9	.726024	3.35	.927708	1.32	.798316	4.67	.201684	51
10	.726225	3.35	.927629	1.33	.798596	4.68	.201404	50
11	9.726426	3.33	9.927549	1.33	9.798877	4.67	10.201123	49
12	.726626	3.35	.927470	1.33	.799157	4.67	.200843	48
13	.726827	3.35	.927390	1.33	.799437	4.67	.200563	47
14	.727027	3.33	.927310	1.33	.799717	4.67	.200283	46
15	.727228	3.35	.927231	1.32	.799997	4.67	.200003	45
16	.727428	3.33	.927151	1.33	.800277	4.67	.199723	44
17	.727628	3.33	.927071	1.33	.800557	4.65	.199443	43
18	.727828	3.33	.926991	1.33	.800836	4.67	.199164	42
19	.728027	3.33	.926911	1.33	.801116	4.67	.198884	41
20	.728227	3.33	.926831	1.33	.801396	4.65	.198604	40
21	9.728427	3.33	9.926751	1.33	9.801675	4.67	10.198325	39
22	.728626	3.32	.926671	1.33	.801955	4.65	.198045	38
23	.728825	3.32	.926591	1.33	.802234	4.65	.197766	37
24	.729024	3.32	.926511	1.33	.802513	4.65	.197487	36
25	.729223	3.32	.926431	1.33	.802793	4.67	.197208	35
26	.729422	3.32	.926351	1.33	.803072	4.65	.196928	34
27	.729621	3.32	.926270	1.35	.803351	4.65	.196649	33
28	.729820	3.32	.926190	1.33	.803630	4.65	.196370	32
29	.730018	3.30	.926110	1.33	.803909	4.65	.196091	31
30	.730217	3.30	.926029	1.33	.804187	4.65	.195813	30
31	9.730415	3.30	9.925949	1.35	9.804466	4.65	10.195534	29
32	.730613	3.30	.925868	1.33	.804745	4.63	.195255	28
33	.730811	3.30	.925788	1.33	.805023	4.65	.194977	27
34	.731009	3.30	.925707	1.35	.805302	4.63	.194698	26
35	.731206	3.28	.925626	1.35	.805580	4.65	.194420	25
36	.731404	3.30	.925545	1.33	.805859	4.63	.194141	24
37	.731602	3.30	.925465	1.35	.806137	4.63	.193863	23
38	.731799	3.28	.925384	1.35	.806415	4.63	.193585	22
39	.731996	3.28	.925303	1.35	.806693	4.63	.193307	21
40	.732193	3.28	.925222	1.35	.806971	4.63	.193029	20
41	9.732390	3.28	9.925141	1.35	9.807249	4.63	10.192751	19
42	.732587	3.28	.925060	1.35	.807527	4.63	.192473	18
43	.732784	3.28	.924979	1.35	.807805	4.63	.192195	17
44	.732980	3.27	.924897	1.37	.808083	4.63	.191917	16
45	.733177	3.28	.924816	1.35	.808361	4.63	.191639	15
46	.733373	3.27	.924735	1.35	.808638	4.63	.191362	14
47	.733569	3.27	.924654	1.35	.808916	4.63	.191084	13
48	.733765	3.27	.924572	1.37	.809193	4.63	.190807	12
49	.733961	3.27	.924491	1.37	.809471	4.63	.190529	11
50	.734157	3.27	.924409	1.35	.809748	4.63	.190252	10
51	9.734353	3.27	9.924328	1.37	9.810025	4.63	10.189975	9
52	.734549	3.27	.924246	1.37	.810302	4.63	.189698	8
53	.734744	3.25	.924164	1.35	.810580	4.63	.189420	7
54	.734939	3.27	.924083	1.37	.810857	4.63	.189143	6
55	.735135	3.27	.924001	1.37	.811134	4.63	.188866	5
56	.735330	3.25	.923919	1.37	.811410	4.60	.188590	4
57	.735525	3.25	.923837	1.37	.811687	4.63	.188313	3
58	.735719	3.25	.923755	1.37	.811964	4.63	.188036	2
59	.735914	3.25	.923673	1.37	.812241	4.60	.187759	1
60'	9.736109		9.923591		9.812517		10.187483	0'
122°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	57°

33°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	146°
0'	9.736109	3.23	9.923591	1.37	9.812517	4.62	10.187483	60'
1	.736303	3.25	.923509	1.37	.812794	4.60	.187206	59
2	.736498	3.23	.923427	1.37	.813070	4.62	.186930	58
3	.736692	3.23	.923345	1.37	.813347	4.60	.186653	57
4	.736886	3.23	.923263	1.37	.813623	4.60	.186377	56
5	.737080	3.23	.923181	1.38	.813899	4.62	.186101	55
6	.737274	3.23	.923098	1.37	.814176	4.60	.185824	54
7	.737467	3.22	.923016	1.38	.814452	4.60	.185548	53
8	.737661	3.23	.922933	1.37	.814728	4.60	.185272	52
9	.737855	3.23	.922851	1.37	.815004	4.60	.184996	51
10	.738048	3.22	.922768	1.38	.815280	4.58	.184720	50
11	9.738241	3.22	9.922685	1.38	9.815555	4.60	10.184445	49
12	.738434	3.22	.922603	1.38	.815831	4.60	.184169	48
13	.738627	3.22	.922520	1.37	.816107	4.58	.183893	47
14	.738820	3.22	.922438	1.38	.816382	4.60	.183618	46
15	.739013	3.22	.922355	1.38	.816658	4.58	.183342	45
16	.739206	3.20	.922272	1.38	.816933	4.58	.183067	44
17	.739398	3.20	.922189	1.38	.817209	4.60	.182791	43
18	.739590	3.20	.922106	1.38	.817484	4.58	.182516	42
19	.739783	3.22	.922023	1.38	.817759	4.58	.182241	41
20	.739975	3.20	.921940	1.38	.818035	4.60	.181965	40
21	9.740167	3.20	9.921857	1.38	9.818310	4.58	10.181690	39
22	.740359	3.18	.921774	1.38	.818585	4.58	.181415	38
23	.740550	3.20	.921691	1.40	.818860	4.58	.181140	37
24	.740742	3.20	.921607	1.38	.819135	4.58	.180865	36
25	.740934	3.20	.921524	1.38	.819410	4.58	.180590	35
26	.741125	3.18	.921441	1.38	.819684	4.57	.180316	34
27	.741316	3.18	.921357	1.40	.819959	4.58	.180041	33
28	.741508	3.20	.921274	1.38	.820234	4.58	.179766	32
29	.741699	3.18	.921190	1.40	.820508	4.57	.179492	31
30	.741889	3.17	.921107	1.38	.820783	4.58	.179217	30
31	9.742080	3.18	9.921023	1.40	9.821057	4.57	10.178943	29
32	.742271	3.18	.920939	1.38	.821332	4.58	.178668	28
33	.742463	3.17	.920856	1.40	.821606	4.57	.178394	27
34	.742652	3.17	.920772	1.40	.821880	4.57	.178120	26
35	.742842	3.17	.920688	1.40	.822154	4.57	.177846	25
36	.743033	3.18	.920604	1.40	.822429	4.58	.177571	24
37	.743223	3.17	.920520	1.40	.822703	4.57	.177297	23
38	.743413	3.17	.920436	1.40	.822977	4.57	.177023	22
39	.743602	3.15	.920353	1.40	.823251	4.57	.176749	21
40	.743792	3.17	.920268	1.40	.823524	4.55	.176476	20
41	9.743982	3.15	9.920184	1.42	9.823798	4.57	10.176202	19
42	.744171	3.17	.920099	1.40	.824072	4.57	.175928	18
43	.744361	3.15	.920015	1.40	.824345	4.55	.175655	17
44	.744550	3.15	.919931	1.42	.824619	4.57	.175381	16
45	.744739	3.15	.919846	1.40	.824893	4.57	.175107	15
46	.744928	3.15	.919762	1.40	.825166	4.55	.174834	14
47	.745117	3.15	.919677	1.42	.825439	4.55	.174561	13
48	.745306	3.15	.919593	1.40	.825713	4.57	.174287	12
49	.745494	3.13	.919508	1.42	.825986	4.55	.174014	11
50	.745683	3.15	.919424	1.42	.826259	4.55	.173741	10
51	9.745871	3.15	9.919339	1.42	9.826532	4.55	10.173468	9
52	.746060	3.13	.919254	1.42	.826805	4.55	.173195	8
53	.746248	3.13	.919169	1.40	.827078	4.55	.172922	7
54	.746436	3.13	.919085	1.42	.827351	4.55	.172649	6
55	.746624	3.13	.919000	1.42	.827624	4.55	.172376	5
56	.746812	3.13	.918915	1.42	.827897	4.55	.172103	4
57	.746999	3.12	.918830	1.42	.828170	4.55	.171830	3
58	.747187	3.13	.918745	1.42	.828442	4.53	.171558	2
59	.747374	3.12	.918659	1.42	.828715	4.55	.171285	1
60'	9.747562	3.13	9.918574	1.42	9.828987	4.53	10.171013	0'
123°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	56°

34°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	145°
0′	9.747562	3.12	9.918574	1.42	9.828987	4.53	10.171013	60′
1	.747749	3.12	.918489	1.42	.829260	4.53	.170740	59
2	.747936	3.12	.918404	1.43	.829532	4.53	.170468	58
3	.748123	3.12	.918318	1.43	.829805	4.53	.170195	57
4	.748310	3.12	.918233	1.42	.830077	4.53	.169923	56
5	.748497	3.12	.918147	1.43	.830349	4.53	.169651	55
6	.748683	3.10	.918062	1.42	.830621	4.53	.169379	54
7	.748870	3.12	.917976	1.43	.830893	4.53	.169107	53
8	.749056	3.10	.917891	1.42	.831165	4.53	.168835	52
9	.749243	3.12	.917805	1.43	.831437	4.53	.168563	51
10	.749429	3.10	.917719	1.42	.831709	4.53	.168291	50
11	9.749615	3.10	9.917634	1.43	9.831981	4.53	10.168019	49
12	.749801	3.10	.917548	1.43	.832253	4.53	.167747	48
13	.749987	3.10	.917462	1.43	.832525	4.52	.167475	47
14	.750172	3.08	.917376	1.43	.832796	4.52	.167204	46
15	.750358	3.10	.917290	1.43	.833068	4.53	.166932	45
16	.750543	3.08	.917204	1.43	.833339	4.52	.166661	44
17	.750729	3.10	.917118	1.43	.833611	4.53	.166389	43
18	.750914	3.08	.917032	1.43	.833882	4.52	.166118	42
19	.751099	3.08	.916946	1.43	.834154	4.53	.165846	41
20	.751284	3.08	.916859	1.43	.834425	4.52	.165575	40
21	9.751469	3.08	9.916773	1.43	9.834696	4.52	10.165304	39
22	.751654	3.08	.916687	1.43	.834967	4.52	.165033	38
23	.751839	3.08	.916600	1.43	.835238	4.52	.164762	37
24	.752023	3.07	.916514	1.43	.835509	4.52	.164491	36
25	.752208	3.08	.916427	1.43	.835780	4.52	.164220	35
26	.752392	3.07	.916341	1.43	.836051	4.52	.163949	34
27	.752578	3.07	.916254	1.43	.836322	4.52	.163678	33
28	.752760	3.07	.916167	1.43	.836593	4.52	.163407	32
29	.752944	3.07	.916081	1.43	.836864	4.52	.163136	31
30	.753128	3.07	.915994	1.43	.837134	4.52	.162866	30
31	9.753312	3.05	9.915907	1.45	9.837405	4.50	10.162595	29
32	.753495	3.07	.915820	1.45	.837675	4.52	.162325	28
33	.753679	3.05	.915733	1.45	.837946	4.50	.162054	27
34	.753862	3.05	.915646	1.45	.838216	4.50	.161784	26
35	.754046	3.07	.915559	1.45	.838487	4.52	.161513	25
36	.754229	3.05	.915472	1.45	.838757	4.50	.161243	24
37	.754412	3.05	.915385	1.45	.839027	4.50	.160973	23
38	.754595	3.05	.915297	1.47	.839297	4.50	.160703	22
39	.754778	3.05	.915210	1.45	.839568	4.52	.160432	21
40	.754960	3.05	.915123	1.47	.839838	4.50	.160162	20
41	9.755143	3.05	9.915035	1.45	9.840108	4.50	10.159892	19
42	.755326	3.05	.914948	1.47	.840378	4.50	.159622	18
43	.755508	3.03	.914860	1.45	.840648	4.50	.159352	17
44	.755690	3.03	.914773	1.45	.840917	4.48	.159083	16
45	.755872	3.03	.914685	1.47	.841187	4.50	.158813	15
46	.756054	3.03	.914598	1.45	.841457	4.50	.158543	14
47	.756236	3.03	.914510	1.47	.841727	4.50	.158273	13
48	.756418	3.03	.914422	1.47	.841996	4.48	.158004	12
49	.756600	3.03	.914334	1.47	.842266	4.50	.157734	11
50	.756782	3.02	.914245	1.47	.842535	4.48	.157465	10
51	9.756963	3.02	9.914158	1.47	9.842805	4.50	10.157195	9
52	.757144	3.03	.914070	1.47	.843074	4.48	.156926	8
53	.757326	3.02	.913982	1.47	.843343	4.48	.156657	7
54	.757507	3.02	.913894	1.47	.843612	4.48	.156388	6
55	.757688	3.02	.913806	1.47	.843882	4.50	.156118	5
56	.757869	3.02	.913718	1.47	.844151	4.48	.155849	4
57	.758050	3.00	.913630	1.48	.844420	4.48	.155580	3
58	.758230	3.02	.913541	1.47	.844689	4.48	.155311	2
59	.758411	3.00	.913453	1.47	.844958	4.48	.155042	1
60′	9.758591	3.00	9.913365	1.47	9.845227	4.48	10.154773	0
124°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	55°

55°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	144°
0'	9.758591	3.02	9.913365	1.48	9.845227	4.48	10.154773	60'
1	.758773	3.00	.913216	1.48	.845496	4.47	.154504	59
2	.758953	3.00	.913187	1.47	.845764	4.48	.154236	58
3	.759133	3.00	.913009	1.48	.846033	4.48	.153967	57
4	.759312	3.00	.912930	1.47	.846302	4.47	.153698	56
5	.759492	3.00	.912922	1.48	.846570	4.48	.153430	55
6	.759672	3.00	.912853	1.48	.846839	4.48	.153161	54
7	.759852	3.00	.912744	1.48	.847108	4.47	.152892	53
8	.760031	2.98	.912635	1.48	.847376	4.47	.152624	52
9	.760211	3.00	.912566	1.48	.847644	4.48	.152356	51
10	.760390	2.98	.912477	1.48	.847913	4.47	.152087	50
11	9.760569	2.98	9.912388	1.48	9.848181	4.47	10.151819	49
12	.760748	2.98	.912299	1.48	.848449	4.47	.151551	48
13	.760927	2.98	.912210	1.48	.848717	4.48	.151283	47
14	.761106	2.98	.912121	1.50	.848986	4.47	.151014	46
15	.761285	2.98	.912031	1.48	.849254	4.47	.150746	45
16	.761464	2.98	.911942	1.48	.849522	4.47	.150478	44
17	.761642	2.97	.911853	1.50	.849790	4.45	.150210	43
18	.761821	2.98	.911763	1.48	.850057	4.47	.149943	42
19	.761999	2.97	.911674	1.50	.850325	4.47	.149675	41
20	.762177	2.97	.911584	1.48	.850593	4.47	.149407	40
21	9.762356	2.97	9.911495	1.50	9.850861	4.47	10.149139	39
22	.762534	2.97	.911405	1.50	.851129	4.45	.148871	38
23	.762712	2.97	.911315	1.50	.851396	4.47	.148604	37
24	.762889	2.95	.911226	1.48	.851664	4.47	.148336	36
25	.763067	2.97	.911136	1.50	.851931	4.47	.148069	35
26	.763245	2.97	.911046	1.50	.852199	4.45	.147801	34
27	.763422	2.95	.910956	1.50	.852466	4.45	.147534	33
28	.763600	2.97	.910866	1.50	.852733	4.47	.147267	32
29	.763777	2.95	.910776	1.50	.853001	4.45	.146999	31
30	.763954	2.95	.910686	1.50	.853268	4.45	.146732	30
31	9.764131	2.95	9.910596	1.50	9.853535	4.45	10.146465	29
32	.764308	2.95	.910506	1.52	.853802	4.45	.146198	28
33	.764485	2.95	.910415	1.50	.854069	4.45	.145931	27
34	.764662	2.95	.910325	1.50	.854336	4.45	.145664	26
35	.764838	2.93	.910235	1.52	.854603	4.45	.145397	25
36	.765015	2.95	.910144	1.50	.854870	4.45	.145130	24
37	.765191	2.93	.910054	1.52	.855137	4.45	.144863	23
38	.765367	2.93	.909963	1.52	.855404	4.45	.144596	22
39	.765544	2.95	.909873	1.50	.855671	4.45	.144329	21
40	.765720	2.93	.909782	1.52	.855938	4.43	.144062	20
41	9.765896	2.93	9.909691	1.50	9.856204	4.45	10.143796	19
42	.766072	2.93	.909601	1.52	.856471	4.43	.143529	18
43	.766247	2.93	.909510	1.52	.856737	4.45	.143263	17
44	.766423	2.93	.909419	1.52	.857004	4.43	.142996	16
45	.766598	2.92	.909329	1.52	.857270	4.43	.142730	15
46	.766774	2.93	.909237	1.52	.857537	4.45	.142463	14
47	.766949	2.92	.909146	1.52	.857803	4.43	.142197	13
48	.767124	2.92	.909055	1.52	.858069	4.43	.141931	12
49	.767300	2.93	.908964	1.52	.858336	4.43	.141664	11
50	.767475	2.92	.908873	1.53	.858602	4.43	.141398	10
51	9.767649	2.92	9.908781	1.52	9.858868	4.43	10.141132	9
52	.767824	2.92	.908690	1.52	.859134	4.43	.140866	8
53	.767999	2.92	.908599	1.53	.859400	4.43	.140600	7
54	.768173	2.90	.908507	1.53	.859666	4.43	.140334	6
55	.768348	2.92	.908416	1.52	.859932	4.43	.140068	5
56	.768522	2.90	.908324	1.53	.860198	4.43	.139802	4
57	.768697	2.92	.908233	1.53	.860464	4.43	.139536	3
58	.768871	2.90	.908141	1.53	.860730	4.43	.139270	2
59	.769045	2.90	.908049	1.53	.860995	4.43	.139005	1
60'	9.769219	2.90	9.907958	1.53	9.861261	4.43	10.138739	0'
125°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	54°

36°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	143°
0′	9.769219	2.90	9.907958	1.53	9.861261	4.43	10.138739	60′
1	.769393	2.88	.907906	1.53	.861527	4.42	.138473	59
2	.769566	2.90	.907774	1.53	.861792	4.43	.138208	58
3	.769740	2.88	.907682	1.53	.862058	4.42	.137942	57
4	.769913	2.90	.907590	1.53	.862323	4.43	.137677	56
5	.770087	2.88	.907498	1.53	.862589	4.43	.137411	55
6	.770260	2.88	.907406	1.53	.862854	4.42	.137146	54
7	.770433	2.88	.907314	1.53	.863119	4.42	.136881	53
8	.770606	2.88	.907222	1.53	.863385	4.43	.136615	52
9	.770779	2.88	.907129	1.55	.863650	4.42	.136350	51
10	.770952	2.88	.907037	1.53	.863915	4.42	.136085	50
11	9.771125	2.88	9.906945	1.55	9.864180	4.42	10.135820	49
12	.771298	2.87	.906852	1.53	.864445	4.42	.135555	48
13	.771470	2.88	.906760	1.55	.864710	4.42	.135290	47
14	.771643	2.87	.906667	1.53	.864975	4.42	.135025	46
15	.771815	2.87	.906575	1.53	.865240	4.42	.134760	45
16	.771987	2.87	.906482	1.55	.865505	4.42	.134495	44
17	.772159	2.87	.906389	1.55	.865770	4.42	.134230	43
18	.772331	2.87	.906296	1.53	.866035	4.42	.133965	42
19	.772503	2.87	.906204	1.53	.866300	4.40	.133700	41
20	.772675	2.87	.906111	1.55	.866564	4.42	.133436	40
21	9.772847	2.85	9.906018	1.55	9.866829	4.42	10.133171	39
22	.773018	2.87	.905925	1.55	.867094	4.40	.132906	38
23	.773190	2.85	.905832	1.55	.867358	4.42	.132642	37
24	.773361	2.85	.905739	1.57	.867623	4.40	.132377	36
25	.773533	2.87	.905645	1.57	.867887	4.40	.132113	35
26	.773704	2.85	.905552	1.55	.868152	4.42	.131848	34
27	.773875	2.85	.905459	1.55	.868416	4.40	.131584	33
28	.774046	2.85	.905366	1.53	.868680	4.40	.131320	32
29	.774217	2.85	.905272	1.57	.868945	4.42	.131055	31
30	.774388	2.85	.905179	1.55	.869209	4.40	.130791	30
31	9.774558	2.85	9.905085	1.57	9.869473	4.40	10.130527	29
32	.774729	2.83	.904992	1.55	.869737	4.40	.130263	28
33	.774899	2.85	.904898	1.57	.870001	4.40	.129999	27
34	.775070	2.83	.904804	1.55	.870265	4.40	.129735	26
35	.775240	2.83	.904711	1.57	.870529	4.40	.129471	25
36	.775410	2.83	.904617	1.57	.870793	4.40	.129207	24
37	.775580	2.83	.904523	1.57	.871057	4.40	.128943	23
38	.775750	2.83	.904429	1.57	.871321	4.40	.128679	22
39	.775920	2.83	.904335	1.57	.871585	4.40	.128415	21
40	.776090	2.82	.904241	1.57	.871849	4.38	.128151	20
41	9.776259	2.83	9.904147	1.57	9.872112	4.40	10.127888	19
42	.776429	2.82	.904053	1.57	.872376	4.40	.127624	18
43	.776598	2.83	.903959	1.58	.872640	4.38	.127360	17
44	.776768	2.82	.903864	1.57	.872903	4.40	.127097	16
45	.776937	2.82	.903770	1.57	.873167	4.38	.126833	15
46	.777106	2.82	.903676	1.58	.873430	4.40	.126570	14
47	.777275	2.82	.903581	1.57	.873694	4.38	.126306	13
48	.777444	2.82	.903487	1.58	.873957	4.38	.126043	12
49	.777613	2.80	.903392	1.57	.874220	4.40	.125780	11
50	.777781	2.82	.903298	1.58	.874484	4.38	.125516	10
51	9.777950	2.82	9.903203	1.58	9.874747	4.38	10.125253	9
52	.778119	2.80	.903108	1.57	.875010	4.38	.124990	8
53	.778287	2.80	.903014	1.58	.875273	4.40	.124727	7
54	.778455	2.82	.902919	1.58	.875537	4.38	.124463	6
55	.778624	2.80	.902824	1.58	.875800	4.38	.124200	5
56	.778792	2.80	.902729	1.58	.876063	4.38	.123937	4
57	.778960	2.80	.902634	1.58	.876326	4.38	.123674	3
58	.779128	2.78	.902539	1.58	.876589	4.38	.123411	2
59	.779295	2.80	.902444	1.58	.876852	4.37	.123148	1
60′	9.779463		9.902349		9.877114		10.122886	0′
126°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	53°

37°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	142°
0′	9.779463		9.902349		9.877114		10.122886	60′
1	.779631	2.80	.902253	1.60	.877377	4.38	.122623	59
2	.779798	2.78	.902158	1.58	.877640	4.38	.122360	58
3	.779966	2.80	.902063	1.58	.877903	4.38	.122097	57
4	.780133	2.78	.901967	1.60	.878165	4.37	.121835	56
5	.780300	2.78	.901872	1.58	.878428	4.38	.121572	55
6	.780467	2.78	.901776	1.60	.878691	4.38	.121309	54
7	.780634	2.78	.901681	1.60	.878953	4.38	.121047	53
8	.780801	2.78	.901585	1.58	.879216	4.37	.120784	52
9	.780968	2.77	.901490	1.60	.879478	4.38	.120522	51
10	.781134	2.78	.901394	1.60	.879741	4.37	.120259	50
11	9.781301	2.78	9.901298	1.60	9.880003	4.37	10.119997	49
12	.781468	2.77	.901202	1.60	.880265	4.38	.119735	48
13	.781634	2.77	.901106	1.60	.880528	4.37	.119472	47
14	.781800	2.77	.901010	1.60	.880790	4.37	.119210	46
15	.781966	2.77	.900914	1.60	.881052	4.37	.118948	45
16	.782132	2.77	.900818	1.60	.881314	4.38	.118686	44
17	.782298	2.77	.900722	1.60	.881577	4.37	.118423	43
18	.782464	2.77	.900626	1.62	.881839	4.37	.118161	42
19	.782630	2.77	.900529	1.60	.882101	4.37	.117899	41
20	.782795	2.75	.900433	1.60	.882363	4.37	.117637	40
21	9.782961	2.77	9.900337	1.62	9.882625	4.37	10.117375	39
22	.783127	2.75	.900240	1.60	.882887	4.35	.117113	38
23	.783292	2.77	.900144	1.62	.883148	4.37	.116852	37
24	.783458	2.75	.900047	1.60	.883410	4.37	.116590	36
25	.783623	2.75	.899951	1.62	.883672	4.37	.116328	35
26	.783788	2.75	.899854	1.62	.883934	4.37	.116066	34
27	.783953	2.75	.899757	1.62	.884196	4.35	.115804	33
28	.784118	2.73	.899660	1.60	.884457	4.37	.115543	32
29	.784282	2.75	.899564	1.62	.884719	4.35	.115281	31
30	.784447	2.75	.899467	1.62	.884980	4.37	.115020	30
31	9.784612	2.73	9.899370	1.62	9.885242	4.37	10.114758	29
32	.784776	2.75	.899273	1.62	.885504	4.35	.114496	28
33	.784941	2.73	.899176	1.63	.885765	4.35	.114235	27
34	.785105	2.73	.899078	1.62	.886026	4.37	.113974	26
35	.785269	2.73	.898981	1.63	.886288	4.35	.113712	25
36	.785433	2.73	.898884	1.62	.886549	4.37	.113451	24
37	.785597	2.73	.898787	1.63	.886811	4.35	.113189	23
38	.785761	2.73	.898689	1.62	.887072	4.35	.112928	22
39	.785925	2.73	.898592	1.63	.887333	4.35	.112667	21
40	.786089	2.72	.898494	1.62	.887594	4.35	.112406	20
41	9.786252	2.73	9.898397	1.63	9.887855	4.35	10.112145	19
42	.786416	2.72	.898299	1.62	.888116	4.37	.111884	18
43	.786579	2.72	.898202	1.63	.888378	4.35	.111622	17
44	.786742	2.73	.898104	1.63	.888639	4.35	.111361	16
45	.786906	2.73	.898006	1.63	.888900	4.35	.111100	15
46	.787069	2.72	.897908	1.63	.889161	4.33	.110839	14
47	.787232	2.72	.897810	1.63	.889421	4.35	.110579	13
48	.787395	2.72	.897712	1.63	.889682	4.35	.110318	12
49	.787557	2.72	.897614	1.63	.889943	4.35	.110057	11
50	.787720	2.72	.897516	1.63	.890204	4.35	.109796	10
51	9.787883	2.70	9.897418	1.63	9.890465	4.33	10.109535	9
52	.788045	2.72	.897320	1.63	.890725	4.35	.109275	8
53	.788208	2.72	.897222	1.65	.890986	4.35	.109014	7
54	.788370	2.70	.897123	1.63	.891247	4.35	.108753	6
55	.788532	2.70	.897025	1.63	.891507	4.33	.108493	5
56	.788694	2.70	.896926	1.63	.891768	4.35	.108232	4
57	.788856	2.70	.896828	1.63	.892028	4.33	.107972	3
58	.789018	2.70	.896729	1.65	.892289	4.35	.107711	2
59	.789180		.896631		.892549	4.33	.107451	1
60′	9.789342	2.70	9.896532	1.65	9.892810	4.35	10.107190	0
127°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	52°

38°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	141°
0'	9.789242	2.70	9.896532	1.65	9.892810	4.33	10.107190	60'
1	.789501	2.68	.896433	1.63	.893070	4.35	.106930	59
2	.789665	2.70	.896335	1.65	.893331	4.33	.106669	58
3	.789827	2.68	.896236	1.65	.893591	4.33	.106409	57
4	.789988	2.68	.896137	1.65	.893851	4.33	.106149	56
5	.790149	2.68	.896038	1.65	.894111	4.35	.105889	55
6	.790310	2.68	.895939	1.65	.894372	4.33	.105628	54
7	.790471	2.68	.895840	1.65	.894632	4.33	.105368	53
8	.790632	2.68	.895741	1.67	.894892	4.33	.105108	52
9	.790793	2.68	.895641	1.65	.895152	4.33	.104848	51
10	.790954	2.68	.895542	1.65	.895412	4.33	.104588	50
11	9.791115	2.67	9.895443	1.67	9.895672	4.33	10.104328	49
12	.791275	2.68	.895343	1.65	.895932	4.33	.104068	48
13	.791436	2.67	.895244	1.65	.896192	4.33	.103808	47
14	.791596	2.68	.895145	1.67	.896452	4.33	.103548	46
15	.791757	2.67	.895045	1.67	.896712	4.32	.103288	45
16	.791917	2.67	.894945	1.65	.896971	4.33	.103029	44
17	.792077	2.67	.894846	1.67	.897231	4.33	.102769	43
18	.792237	2.67	.894746	1.67	.897491	4.33	.102509	42
19	.792397	2.67	.894646	1.67	.897751	4.32	.102249	41
20	.792557	2.65	.894546	1.67	.898010	4.33	.101990	40
21	9.792716	2.67	9.894446	1.67	9.898270	4.33	10.101730	39
22	.792876	2.65	.894346	1.67	.898530	4.32	.101470	38
23	.793035	2.67	.894246	1.67	.898789	4.33	.101211	37
24	.793195	2.65	.894146	1.67	.899049	4.32	.100951	36
25	.793354	2.67	.894046	1.67	.899308	4.33	.100692	35
26	.793514	2.65	.893946	1.67	.899568	4.32	.100432	34
27	.793673	2.65	.893846	1.68	.899827	4.33	.100173	33
28	.793832	2.65	.893745	1.67	.900087	4.32	.099913	32
29	.793991	2.65	.893645	1.68	.900346	4.32	.099654	31
30	.794150	2.63	.893544	1.67	.900605	4.32	.099395	30
31	9.794308	2.65	9.893444	1.68	9.900864	4.33	10.099136	29
32	.794467	2.65	.893343	1.67	.901124	4.32	.098876	28
33	.794626	2.63	.893243	1.68	.901383	4.32	.098617	27
34	.794784	2.63	.893142	1.68	.901642	4.32	.098358	26
35	.794942	2.65	.893041	1.68	.901901	4.32	.098099	25
36	.795101	2.63	.892940	1.68	.902160	4.33	.097840	24
37	.795259	2.63	.892839	1.67	.902420	4.32	.097580	23
38	.795417	2.63	.892739	1.68	.902679	4.32	.097321	22
39	.795575	2.63	.892638	1.70	.902938	4.32	.097062	21
40	.795733	2.63	.892537	1.68	.903197	4.32	.096803	20
41	9.795891	2.63	9.892435	1.68	9.903456	4.30	10.096544	19
42	.796049	2.62	.892334	1.68	.903714	4.32	.096286	18
43	.796206	2.63	.892233	1.68	.903973	4.32	.096027	17
44	.796364	2.62	.892132	1.70	.904232	4.32	.095768	16
45	.796521	2.63	.892030	1.68	.904491	4.32	.095509	15
46	.796679	2.62	.891929	1.70	.904750	4.30	.095250	14
47	.796836	2.62	.891827	1.68	.905008	4.32	.094992	13
48	.796993	2.62	.891726	1.70	.905267	4.32	.094733	12
49	.797150	2.62	.891624	1.68	.905526	4.32	.094474	11
50	.797307	2.62	.891523	1.70	.905785	4.30	.094215	10
51	9.797464	2.62	9.891421	1.70	9.906043	4.32	10.093957	9
52	.797621	2.60	.891319	1.70	.906302	4.30	.093698	8
53	.797777	2.62	.891217	1.70	.906560	4.32	.093440	7
54	.797934	2.62	.891115	1.70	.906819	4.30	.093181	6
55	.798091	2.60	.891013	1.70	.907077	4.32	.092923	5
56	.798247	2.60	.890911	1.70	.907336	4.30	.092664	4
57	.798403	2.62	.890809	1.70	.907594	4.32	.092406	3
58	.798560	2.60	.890707	1.70	.907853	4.30	.092147	2
59	.798716	2.60	.890605	1.70	.908111	4.30	.091889	1
60'	9.798872		9.890503		9.908369		10.091631	0'
128°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	51°

39°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang	140°
0'	9.798872	2.60	9.800603	1.72	9.906369	4.32	10.091631	60'
1	.799028	2.60	.800400	1.70	.906628	4.30	.091372	59
2	.799184	2.58	.800298	1.72	.906886	4.30	.091114	58
3	.799339	2.60	.800195	1.72	.909144	4.30	.090856	57
4	.799495	2.60	.800093	1.72	.909402	4.30	.090598	56
5	.799651	2.60	.799990	1.70	.909660	4.30	.090340	55
6	.799806	2.58	.799888	1.72	.909918	4.32	.090082	54
7	.799962	2.60	.799785	1.72	.910177	4.30	.089823	53
8	.800117	2.58	.799682	1.72	.910435	4.30	.089565	52
9	.800272	2.58	.799579	1.70	.910693	4.30	.089307	51
10	.800427	2.58	.799477	1.72	.910951	4.30	.089049	50
11	9.800582	2.58	9.799374	1.72	9.911209	4.30	10.088791	49
12	.800737	2.58	.799271	1.72	.911467	4.30	.088533	48
13	.800892	2.58	.799168	1.72	.911725	4.30	.088275	47
14	.801047	2.58	.799064	1.73	.911982	4.28	.088018	46
15	.801201	2.57	.798961	1.72	.912240	4.30	.087760	45
16	.801356	2.58	.798858	1.72	.912498	4.30	.087502	44
17	.801511	2.58	.798755	1.72	.912756	4.30	.087244	43
18	.801665	2.57	.798651	1.73	.913014	4.28	.086986	42
19	.801819	2.57	.798548	1.73	.913271	4.30	.086729	41
20	.801973	2.58	.798444	1.72	.913529	4.30	.086471	40
21	9.802128	2.57	9.798341	1.73	9.913787	4.28	10.086213	39
22	.802282	2.57	.798237	1.73	.914044	4.28	.085956	38
23	.802436	2.57	.798134	1.72	.914302	4.30	.085698	37
24	.802589	2.55	.798030	1.73	.914560	4.30	.085440	36
25	.802743	2.57	.797926	1.73	.914817	4.28	.085183	35
26	.802897	2.57	.797822	1.73	.915075	4.30	.084925	34
27	.803050	2.55	.797718	1.73	.915332	4.28	.084668	33
28	.803204	2.57	.797614	1.73	.915590	4.30	.084410	32
29	.803357	2.55	.797510	1.73	.915847	4.28	.084153	31
30	.803511	2.57	.797406	1.73	.916104	4.28	.083896	30
31	9.803664	2.55	9.797302	1.73	9.916362	4.28	10.083638	29
32	.803817	2.55	.797198	1.73	.916619	4.28	.083381	28
33	.803970	2.55	.797093	1.75	.916877	4.30	.083123	27
34	.804123	2.55	.796989	1.73	.917134	4.28	.082866	26
35	.804276	2.55	.796885	1.73	.917391	4.28	.082609	25
36	.804428	2.55	.796780	1.75	.917648	4.28	.082352	24
37	.804581	2.55	.796676	1.73	.917906	4.30	.082094	23
38	.804734	2.53	.796571	1.75	.918163	4.28	.081837	22
39	.804886	2.55	.796466	1.75	.918420	4.28	.081580	21
40	.805039	2.53	.796362	1.75	.918677	4.28	.081323	20
41	9.805191	2.53	9.796257	1.75	9.918934	4.28	10.081066	19
42	.805343	2.53	.796152	1.75	.919191	4.28	.080809	18
43	.805495	2.53	.796047	1.75	.919448	4.28	.080552	17
44	.805647	2.53	.795942	1.75	.919705	4.28	.080295	16
45	.805799	2.53	.795837	1.75	.919962	4.28	.080038	15
46	.805951	2.53	.795732	1.75	.920219	4.28	.079781	14
47	.806103	2.53	.795627	1.75	.920476	4.28	.079524	13
48	.806254	2.52	.795522	1.75	.920733	4.28	.079267	12
49	.806406	2.53	.795416	1.77	.920990	4.28	.079010	11
50	.806557	2.53	.795311	1.77	.921247	4.27	.078753	10
51	9.806709	2.52	9.795205	1.75	9.921503	4.28	10.078497	9
52	.806860	2.52	.795100	1.77	.921760	4.28	.078240	8
53	.807011	2.52	.794994	1.75	.922017	4.28	.077983	7
54	.807163	2.53	.794889	1.77	.922274	4.28	.077726	6
55	.807314	2.52	.794783	1.77	.922530	4.27	.077470	5
56	.807465	2.52	.794677	1.77	.922787	4.28	.077213	4
57	.807615	2.50	.794572	1.75	.923044	4.28	.076956	3
58	.807766	2.52	.794466	1.77	.923300	4.27	.076700	2
59	.807917	2.52	.794360	1.77	.923557	4.28	.076443	1
60'	9.808067	2.50	9.794254	1.77	9.923814	4.28	10.076186	0'
129°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	50°

40°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	139°
0'	9.808067	2.53	9.884254	1.77	9.923814	4.27	10.076186	60'
1	.808218	2.53	.884148	1.77	.924070	4.28	.075930	59
2	.808368	2.53	.884042	1.77	.924327	4.27	.075673	58
3	.808519	2.53	.883936	1.78	.924583	4.28	.075417	57
4	.808669	2.50	.883829	1.77	.924840	4.27	.075160	56
5	.808819	2.50	.883723	1.77	.925096	4.27	.074904	55
6	.808969	2.50	.883617	1.77	.925352	4.28	.074648	54
7	.809119	2.50	.883510	1.78	.925609	4.27	.074391	53
8	.809269	2.50	.883404	1.78	.925865	4.28	.074135	52
9	.809419	2.50	.883297	1.77	.926122	4.27	.073878	51
10	.809569	2.48	.883191	1.78	.926378	4.27	.073622	50
11	9.809718	2.50	9.883084	1.78	9.926634	4.27	10.073366	49
12	.809868	2.48	.882977	1.77	.926890	4.28	.073110	48
13	.810017	2.50	.882871	1.78	.927147	4.27	.072853	47
14	.810167	2.48	.882764	1.78	.927403	4.27	.072597	43
15	.810316	2.48	.882657	1.78	.927659	4.27	.072341	45
16	.810465	2.48	.882550	1.78	.927915	4.27	.072085	44
17	.810614	2.48	.882443	1.78	.928171	4.27	.071829	43
18	.810763	2.48	.882336	1.78	.928427	4.28	.071573	42
19	.810912	2.48	.882229	1.80	.928684	4.27	.071316	41
20	.811061	2.48	.882121	1.78	.928940	4.27	.071060	40
21	9.811210	2.47	9.882014	1.78	9.929196	4.27	10.070804	39
22	.811358	2.48	.881907	1.80	.929452	4.27	.070548	38
23	.811507	2.47	.881799	1.78	.929708	4.27	.070292	37
24	.811655	2.48	.881692	1.80	.929964	4.27	.070036	36
25	.811804	2.47	.881584	1.78	.930220	4.25	.069780	35
26	.811952	2.47	.881477	1.78	.930475	4.27	.069525	34
27	.812100	2.47	.881369	1.80	.930731	4.27	.069269	33
28	.812248	2.47	.881261	1.80	.930987	4.27	.069013	32
29	.812396	2.47	.881153	1.78	.931243	4.27	.068757	31
30	.812544	2.47	.881045	1.80	.931499	4.27	.068501	30
31	9.812692	2.47	9.880938	1.80	9.931755	4.25	10.068245	29
32	.812840	2.47	.880830	1.80	.932010	4.27	.067990	28
33	.812988	2.45	.880722	1.82	.932266	4.27	.067734	27
34	.813135	2.47	.880613	1.80	.932522	4.27	.067478	26
35	.813283	2.45	.880505	1.80	.932778	4.27	.067222	25
36	.813430	2.47	.880397	1.80	.933033	4.25	.066967	24
37	.813578	2.45	.880289	1.82	.933289	4.27	.066711	23
38	.813725	2.45	.880180	1.80	.933545	4.25	.066455	22
39	.813872	2.45	.880072	1.82	.933800	4.27	.066200	21
40	.814019	2.45	.879963	1.80	.934056	4.25	.065944	20
41	9.814166	2.45	9.879855	1.82	9.934311	4.27	10.065689	19
42	.814313	2.45	.879746	1.82	.934567	4.27	.065433	18
43	.814460	2.45	.879637	1.82	.934822	4.25	.065178	17
44	.814607	2.45	.879529	1.80	.935078	4.27	.064922	16
45	.814753	2.43	.879420	1.82	.935333	4.25	.064667	15
46	.814900	2.45	.879311	1.82	.935589	4.27	.064411	14
47	.815046	2.43	.879202	1.82	.935844	4.25	.064156	13
48	.815193	2.45	.879093	1.82	.936100	4.27	.063900	12
49	.815339	2.43	.878984	1.82	.936355	4.27	.063645	11
50	.815485	2.45	.878875	1.82	.936611	4.25	.063389	10
51	9.815632	2.43	9.878766	1.83	9.936866	4.25	10.063134	9
52	.815778	2.43	.878656	1.82	.937121	4.27	.062879	8
53	.815924	2.43	.878547	1.82	.937377	4.27	.062623	7
54	.816069	2.42	.878438	1.83	.937632	4.25	.062368	6
55	.816215	2.43	.878328	1.82	.937887	4.25	.062113	5
56	.816361	2.43	.878219	1.83	.938142	4.27	.061858	4
57	.816507	2.42	.878109	1.83	.938398	4.25	.061602	3
58	.816652	2.43	.877999	1.83	.938653	4.25	.061347	2
59	.816798	2.43	.877890	1.82	.938908	4.25	.061092	1
60'	9.816943	2.42	9.877780	1.83	9.939163	4.25	10.060837	0'
139°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	49°

41°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	139°
0	9.816043	2.42	9.877780	1.83	9.939163	4.25	10.060837	60′
1	.816283	2.42	.877670	1.83	.939418	4.25	.060582	59
2	.816523	2.42	.877560	1.83	.939673	4.25	.060327	58
3	.816762	2.43	.877450	1.83	.939928	4.25	.060072	57
4	.817001	2.42	.877340	1.83	.940183	4.27	.059817	56
5	.817241	2.40	.877230	1.83	.940439	4.25	.059561	55
6	.817480	2.42	.877120	1.83	.940694	4.25	.059306	54
7	.817718	2.42	.877010	1.85	.940949	4.25	.059051	53
8	.817958	2.42	.876899	1.83	.941204	4.25	.058796	52
9	.818197	2.40	.876789	1.85	.941459	4.23	.058541	51
10	.818432	2.40	.876678	1.83	.941713	4.25	.058287	50
11	9.818676	2.42	9.876568	1.85	9.941968	4.25	10.058032	49
12	.818915	2.40	.876457	1.83	.942223	4.23	.057777	48
13	.819155	2.40	.876347	1.85	.942478	4.25	.057522	47
14	.819393	2.40	.876236	1.85	.942733	4.25	.057267	46
15	.819113	2.40	.876125	1.85	.942988	4.25	.057013	45
16	.819257	2.40	.876014	1.83	.943243	4.25	.056757	44
17	.819401	2.40	.875901	1.85	.943498	4.23	.056502	43
18	.819545	2.40	.875793	1.85	.943752	4.25	.056248	42
19	.819689	2.38	.875682	1.85	.944007	4.25	.055993	41
20	.819832	2.40	.875571	1.87	.944262	4.25	.055738	40
21	9.819976	2.40	9.875459	1.85	9.944517	4.23	10.055483	39
22	.820120	2.38	.875348	1.85	.944771	4.23	.055229	38
23	.820263	2.38	.875237	1.85	.945026	4.25	.054974	37
24	.820406	2.38	.875126	1.87	.945281	4.23	.054719	36
25	.820550	2.40	.875014	1.85	.945535	4.25	.054465	35
26	.820693	2.38	.874903	1.87	.945790	4.25	.054210	34
27	.820836	2.38	.874791	1.85	.946045	4.23	.053955	33
28	.820979	2.38	.874680	1.87	.946299	4.25	.053701	32
29	.821122	2.38	.874568	1.87	.946554	4.23	.053446	31
30	.821265	2.37	.874456	1.87	.946808	4.25	.053192	30
31	9.821407	2.38	9.874344	1.87	9.947063	4.25	10.052937	29
32	.821550	2.38	.874232	1.85	.947318	4.23	.052682	28
33	.821693	2.38	.874121	1.87	.947572	4.23	.052428	27
34	.821835	2.37	.874009	1.88	.947827	4.23	.052173	26
35	.821977	2.38	.873896	1.87	.948081	4.23	.051919	25
36	.822120	2.37	.873784	1.87	.948335	4.25	.051665	24
37	.822262	2.37	.873672	1.87	.948590	4.23	.051410	23
38	.822404	2.37	.873560	1.87	.948844	4.25	.051156	22
39	.822546	2.37	.873448	1.88	.949099	4.23	.050901	21
40	.822688	2.37	.873335	1.87	.949353	4.25	.050647	20
41	9.822830	2.37	9.873223	1.88	9.949608	4.23	10.050392	19
42	.822972	2.37	.873110	1.87	.949862	4.23	.050138	18
43	.823114	2.37	.872998	1.88	.950116	4.25	.049884	17
44	.823255	2.35	.872885	1.88	.950371	4.23	.049629	16
45	.823397	2.37	.872772	1.88	.950625	4.23	.049375	15
46	.823539	2.37	.872659	1.87	.950879	4.23	.049121	14
47	.823680	2.35	.872547	1.88	.951133	4.25	.048867	13
48	.823821	2.37	.872434	1.88	.951388	4.23	.048612	12
49	.823963	2.35	.872321	1.88	.951642	4.23	.048358	11
50	.824104	2.35	.872208	1.88	.951896	4.23	.048104	10
51	9.824245	2.35	9.872095	1.90	9.952150	4.25	10.047850	9
52	.824386	2.35	.871981	1.88	.952405	4.23	.047595	8
53	.824527	2.33	.871868	1.88	.952659	4.23	.047341	7
54	.824668	2.33	.871755	1.90	.952913	4.23	.047087	6
55	.824808	2.35	.871641	1.88	.953167	4.23	.046833	5
56	.824949	2.35	.871528	1.90	.953421	4.23	.046579	4
57	.825090	2.33	.871414	1.88	.953675	4.23	.046325	3
58	.825230	2.35	.871301	1.90	.953929	4.23	.046071	2
59	.825371	2.33	.871187	1.90	.954183	4.23	.045817	1
60′	9.825511		9.871073		9.954437		10.045563	0′
131°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	48°

42°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	137°
0'	9.825511	2.33	9.871073	1.88	9.954437	4.23	10.045563	60'
1	.825651	2.33	.870960	1.90	.954691	4.23	.045309	59
2	.825791	2.33	.870846	1.90	.954946	4.23	.045054	58
3	.825931	2.33	.870732	1.90	.955200	4.23	.044800	57
4	.826071	2.33	.870618	1.90	.955454	4.23	.044546	56
5	.826211	2.33	.870504	1.90	.955708	4.22	.044292	55
6	.826351	2.33	.870390	1.90	.955961	4.23	.044039	54
7	.826491	2.33	.870276	1.90	.956215	4.23	.043785	53
8	.826631	2.33	.870161	1.92	.956469	4.23	.043531	52
9	.826770	2.32	.870047	1.90	.956723	4.23	.043277	51
10	.826910	2.33	.869933	1.90	.956977	4.23	.043023	50
11	9.827049	2.33	9.869818	1.92	9.957231	4.23	10.042769	49
12	.827189	2.32	.869704	1.92	.957485	4.23	.042515	48
13	.827328	2.32	.869589	1.92	.957739	4.23	.042261	47
14	.827467	2.32	.869474	1.90	.957993	4.23	.042007	46
15	.827606	2.32	.869360	1.92	.958247	4.22	.041753	45
16	.827745	2.32	.869245	1.92	.958500	4.23	.041500	44
17	.827884	2.32	.869130	1.92	.958754	4.23	.041246	43
18	.828023	2.32	.869015	1.92	.959008	4.23	.040992	42
19	.828162	2.32	.868900	1.92	.959262	4.23	.040738	41
20	.828301	2.30	.868785	1.92	.959516	4.22	.040484	40
21	9.828439	2.32	9.868670	1.92	9.959769	4.23	10.040231	39
22	.828578	2.30	.868555	1.92	.960023	4.23	.039977	38
23	.828716	2.32	.868440	1.93	.960277	4.22	.039723	37
24	.828855	2.30	.868324	1.92	.960530	4.23	.039470	36
25	.828993	2.30	.868209	1.92	.960784	4.23	.039216	35
26	.829131	2.30	.868093	1.93	.961038	4.23	.038962	34
27	.829269	2.30	.867978	1.92	.961292	4.23	.038708	33
28	.829407	2.30	.867862	1.93	.961545	4.22	.038455	32
29	.829545	2.30	.867747	1.92	.961799	4.23	.038201	31
30	.829683	2.30	.867631	1.93	.962052	4.23	.037948	30
31	9.829821	2.30	9.867515	1.93	9.962306	4.23	10.037694	29
32	.829959	2.30	.867399	1.93	.962560	4.22	.037440	28
33	.830097	2.28	.867283	1.93	.962813	4.23	.037187	27
34	.830234	2.30	.867167	1.93	.963067	4.22	.036933	26
35	.830372	2.28	.867051	1.93	.963320	4.23	.036680	25
36	.830509	2.28	.866935	1.93	.963574	4.23	.036426	24
37	.830645	2.28	.866819	1.93	.963828	4.23	.036172	23
38	.830784	2.30	.866703	1.93	.964081	4.22	.035919	22
39	.830921	2.28	.866586	1.95	.964335	4.23	.035665	21
40	.831058	2.28	.866470	1.93	.964588	4.23	.035412	20
41	9.831195	2.28	9.866353	1.93	9.964842	4.22	10.035158	19
42	.831332	2.28	.866237	1.95	.965095	4.23	.034905	18
43	.831469	2.28	.866120	1.93	.965349	4.22	.034651	17
44	.831606	2.27	.866004	1.95	.965602	4.22	.034398	16
45	.831742	2.27	.865887	1.95	.965855	4.23	.034145	15
46	.831879	2.28	.865770	1.95	.966109	4.22	.033891	14
47	.832015	2.27	.865653	1.95	.966362	4.23	.033638	13
48	.832152	2.28	.865536	1.95	.966616	4.23	.033384	12
49	.832288	2.27	.865419	1.95	.966869	4.22	.033131	11
50	.832425	2.27	.865302	1.95	.967123	4.22	.032877	10
51	9.832561	2.27	9.865185	1.95	9.967376	4.22	10.032624	9
52	.832697	2.27	.865068	1.97	.967629	4.23	.032371	8
53	.832833	2.27	.864950	1.95	.967883	4.22	.032117	7
54	.832969	2.27	.864833	1.95	.968136	4.22	.031864	6
55	.833105	2.27	.864716	1.95	.968389	4.23	.031611	5
56	.833241	2.27	.864598	1.97	.968643	4.22	.031357	4
57	.833377	2.27	.864481	1.95	.968896	4.22	.031104	3
58	.833512	2.25	.864363	1.97	.969149	4.22	.030851	2
59	.833648	2.27	.864245	1.97	.969403	4.23	.030597	1
60'	9.833783	2.25	9.864127	1.97	9.969656	4.22	10.030344	0'
132°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	47°

43°	Sine.	D. 1".	Cosine.	D. 1".	Tang.	D. 1".	Cotang.	136°
0'	9.833783	2.27	9.864127	1.95	9.969656	4.22	10.030344	60'
1	.833919	2.25	.864010	1.97	.969909	4.22	.030091	59
2	.834054	2.25	.863892	1.97	.970162	4.23	.029838	58
3	.834189	2.27	.863774	1.97	.970416	4.22	.029584	57
4	.834325	2.25	.863656	1.97	.970669	4.22	.029331	56
5	.834460	2.25	.863538	1.98	.970922	4.22	.029078	55
6	.834595	2.25	.863419	1.97	.971175	4.23	.028825	54
7	.834730	2.25	.863301	1.97	.971429	4.22	.028571	53
8	.834865	2.23	.863183	1.98	.971682	4.22	.028318	52
9	.834999	2.25	.863064	1.97	.971935	4.22	.028065	51
10	.835134	2.25	.862946	1.98	.972188	4.22	.027812	50
11	9.835269	2.23	9.862827	1.97	9.972441	4.23	10.027559	49
12	.835403	2.25	.862709	1.98	.972695	4.22	.027305	48
13	.835538	2.23	.862590	1.98	.972948	4.22	.027052	47
14	.835672	2.25	.862471	1.97	.973201	4.22	.026799	46
15	.835807	2.23	.862353	1.98	.973454	4.22	.026546	45
16	.835941	2.23	.862234	1.98	.973707	4.22	.026293	44
17	.836075	2.23	.862115	1.98	.973960	4.22	.026040	43
18	.836209	2.23	.861996	1.98	.974213	4.22	.025787	42
19	.836343	2.23	.861877	1.98	.974466	4.23	.025534	41
20	.836477	2.23	.861758	2.00	.974720	4.22	.025280	40
21	9.836611	2.23	9.861638	1.98	9.974973	4.22	10.025027	39
22	.836745	2.22	.861519	1.98	.975226	4.22	.024774	38
23	.836879	2.23	.861400	2.00	.975479	4.22	.024521	37
24	.837012	2.23	.861280	1.98	.975732	4.22	.024268	36
25	.837146	2.22	.861161	2.00	.975985	4.22	.024015	35
26	.837279	2.22	.861041	1.98	.976238	4.22	.023762	34
27	.837412	2.23	.860922	2.00	.976491	4.22	.023509	33
28	.837546	2.22	.860802	2.00	.976744	4.22	.023256	32
29	.837679	2.22	.860682	2.00	.976997	4.22	.023003	31
30	.837812	2.23	.860562	2.00	.977250	4.22	.022750	30
31	9.837945	2.22	9.860442	2.00	9.977503	4.22	10.022497	29
32	.838078	2.22	.860322	2.00	.977756	4.22	.022244	28
33	.838211	2.22	.860202	2.00	.978009	4.22	.021991	27
34	.838344	2.22	.860082	2.00	.978262	4.22	.021738	26
35	.838477	2.22	.859962	2.00	.978515	4.22	.021485	25
36	.838610	2.20	.859842	2.02	.978768	4.22	.021232	24
37	.838742	2.22	.859721	2.00	.979021	4.22	.020979	23
38	.838875	2.20	.859601	2.02	.979274	4.22	.020726	22
39	.839007	2.22	.859480	2.00	.979527	4.22	.020473	21
40	.839140	2.20	.859360	2.02	.979780	4.22	.020220	20
41	9.839272	2.22	9.859239	2.02	9.980033	4.22	10.019967	19
42	.839404	2.20	.859119	2.02	.980286	4.20	.019714	18
43	.839536	2.20	.858998	2.02	.980538	4.22	.019462	17
44	.839668	2.20	.858877	2.02	.980791	4.22	.019209	16
45	.839800	2.20	.858756	2.02	.981044	4.22	.018956	15
46	.839932	2.20	.858635	2.02	.981297	4.22	.018703	14
47	.840064	2.20	.858514	2.02	.981550	4.22	.018450	13
48	.840195	2.20	.858393	2.02	.981803	4.22	.018197	12
49	.840328	2.18	.858272	2.02	.982055	4.22	.017944	11
50	.840459	2.20	.858151	2.03	.982309	4.22	.017691	10
51	9.840591	2.18	9.858029	2.02	9.982562	4.20	10.017438	9
52	.840722	2.20	.857908	2.03	.982814	4.22	.017186	8
53	.840854	2.18	.857786	2.02	.983067	4.22	.016933	7
54	.840985	2.18	.857665	2.03	.983320	4.22	.016680	6
55	.841116	2.18	.857543	2.02	.983573	4.22	.016427	5
56	.841247	2.18	.857422	2.03	.983826	4.22	.016174	4
57	.841378	2.18	.857300	2.03	.984079	4.22	.015921	3
58	.841509	2.18	.857178	2.03	.984332	4.20	.015668	2
59	.841640	2.18	.857056	2.03	.984584	4.22	.015416	1
60'	9.841771		9.856934		9.984837		10.015163	0'
132°	Cosine.	D. 1".	Sine.	D. 1".	Cotang.	D. 1".	Tang.	46°

44°	Sine.	D. 1'.	Cosine.	D. 1"	Tang.	D. 1'.	Cotang.	135°
0'	9.841771	2.18	9.856334	2.03	9.984837	4.22	10.015163	60
1	.841902	2.18	.856813	2.03	.985090	4.22	.014910	59
2	.842033	2.17	.856630	2.03	.985343	4.22	.014657	58
3	.842163	2.18	.856368	2.03	.985596	4.20	.014404	57
4	.842294	2.17	.856446	2.05	.985848	4.22	.014152	56
5	.842424	2.18	.856323	2.03	.986101	4.22	.013899	55
6	.842555	2.17	.856201	2.05	.986354	4.22	.013646	54
7	.842685	2.17	.856078	2.03	.986607	4.22	.013393	53
8	.842815	2.18	.855956	2.05	.986860	4.20	.013140	52
9	.842946	2.17	.855833	2.05	.987112	4.22	.012888	51
10	.843076	2.17	.855711	2.03	.987365	4.22	.012635	50
11	9.843206	2.17	9.855588	2.05	9.987618	4.22	10.012382	49
12	.843336	2.17	.855465	2.05	.987871	4.20	.012129	48
13	.843466	2.15	.855343	2.05	.988123	4.22	.011877	47
14	.843595	2.17	.855219	2.05	.988376	4.22	.011624	46
15	.843725	2.17	.855096	2.03	.988629	4.22	.011371	45
16	.843855	2.15	.854973	2.05	.988882	4.20	.011118	44
17	.843984	2.17	.854850	2.05	.989134	4.22	.010866	43
18	.844114	2.15	.854727	2.07	.989387	4.22	.010613	42
19	.844243	2.15	.854603	2.05	.989640	4.22	.010360	41
20	.844372	2.17	.854480	2.07	.989893	4.20	.010107	40
21	9.844502	2.15	9.854356	2.05	9.990145	4.22	10.009855	39
22	.844631	2.15	.854233	2.07	.990398	4.22	.009602	38
23	.844760	2.15	.854109	2.05	.990651	4.20	.009349	37
24	.844889	2.15	.853986	2.07	.990903	4.22	.009097	36
25	.845018	2.15	.853862	2.07	.991156	4.22	.008844	35
26	.845147	2.15	.853738	2.07	.991409	4.22	.008591	34
27	.845276	2.15	.853614	2.07	.991662	4.20	.008338	33
28	.845405	2.13	.853490	2.07	.991914	4.22	.008086	32
29	.845533	2.15	.853366	2.07	.992167	4.22	.007833	31
30	.845662	2.13	.853242	2.07	.992420	4.20	.007580	30
31	9.845790	2.15	9.853118	2.07	9.992672	4.22	10.007328	29
32	.845919	2.13	.852994	2.08	.992925	4.22	.007075	28
33	.846047	2.13	.852869	2.07	.993178	4.22	.006822	27
34	.846175	2.15	.852745	2.08	.993431	4.20	.006569	26
35	.846304	2.13	.852620	2.07	.993683	4.22	.006317	25
36	.846432	2.13	.852496	2.08	.993936	4.22	.006064	24
37	.846560	2.13	.852371	2.07	.994189	4.20	.005811	23
38	.846688	2.13	.852247	2.08	.994441	4.22	.005559	22
39	.846816	2.13	.852122	2.08	.994694	4.22	.005306	21
40	.846944	2.13	.851997	2.08	.994947	4.20	.005053	20
41	9.847071	2.13	9.851872	2.08	9.995199	4.22	10.004801	19
42	.847199	2.13	.851747	2.08	.995452	4.22	.004548	18
43	.847327	2.13	.851622	2.08	.995705	4.20	.004295	17
44	.847454	2.13	.851497	2.08	.995957	4.22	.004043	16
45	.847582	2.13	.851373	2.10	.996210	4.22	.003790	15
46	.847709	2.13	.851246	2.08	.996463	4.20	.003537	14
47	.847836	2.13	.851121	2.08	.996715	4.22	.003285	13
48	.847964	2.13	.850996	2.10	.996968	4.22	.003032	12
49	.848091	2.13	.850870	2.08	.997221	4.20	.002779	11
50	.848218	2.13	.850745	2.10	.997473	4.22	.002527	10
51	9.848345	2.13	9.850619	2.10	9.997726	4.22	10.002274	9
52	.848472	2.13	.850493	2.08	.997979	4.20	.002021	8
53	.848599	2.13	.850368	2.10	.998231	4.22	.001769	7
54	.848726	2.13	.850242	2.10	.998484	4.22	.001516	6
55	.848852	2.13	.850116	2.10	.998737	4.20	.001263	5
56	.848979	2.13	.849990	2.10	.998989	4.22	.001011	4
57	.849106	2.13	.849864	2.10	.999242	4.22	.000758	3
58	.849232	2.13	.849738	2.12	.999495	4.20	.000505	2
59	.849359	2.13	.849611	2.10	.999747	4.22	.000253	1
60'	9.849485	2.10	9.849485	2.10	10.000000	4.22	10.000000	0'
124°	Cosine.	D. 1'.	Sine.	D. 1".	Cotang.	D. 1'	Tang.	45°

′	0°		1°		2°		3°		4°		′
	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	
0	.00000	One.	.01745	.99965	.03490	.99939	.05234	.99863	.06976	.99756	60
1	.00029	One.	.01774	.99964	.03519	.99938	.05263	.99861	.07005	.99754	59
2	.00058	One.	.01803	.99964	.03548	.99937	.05292	.99860	.07034	.99752	58
3	.00087	One.	.01832	.99963	.03577	.99936	.05321	.99858	.07063	.99750	57
4	.00116	One.	.01862	.99963	.03606	.99935	.05350	.99857	.07092	.99748	56
5	.00145	One.	.01891	.99962	.03635	.99934	.05379	.99855	.07121	.99746	55
6	.00175	One.	.01920	.99962	.03664	.99933	.05408	.99854	.07150	.99741	54
7	.00204	One.	.01949	.99961	.03693	.99932	.05437	.99852	.07179	.99742	53
8	.00233	One.	.01978	.99960	.03723	.99931	.05466	.99851	.07208	.99740	52
9	.00262	One.	.02007	.99960	.03752	.99930	.05495	.99849	.07237	.99738	51
10	.00291	One.	.02036	.99959	.03781	.99929	.05524	.99847	.07266	.99736	50
11	.00320	.99999	.02065	.99979	.03810	.99927	.05553	.99846	.07295	.99734	49
12	.00349	.99999	.02094	.99978	.03839	.99926	.05582	.99844	.07324	.99731	48
13	.00378	.99999	.02123	.99977	.03868	.99925	.05611	.99842	.07353	.99729	47
14	.00407	.99999	.02152	.99977	.03897	.99924	.05640	.99841	.07382	.99727	46
15	.00436	.99999	.02181	.99976	.03926	.99923	.05669	.99839	.07411	.99725	45
16	.00465	.99999	.02211	.99976	.03955	.99922	.05698	.99838	.07440	.99723	44
17	.00495	.99999	.02240	.99975	.03984	.99921	.05727	.99836	.07469	.99721	43
18	.00524	.99999	.02269	.99974	.04013	.99919	.05756	.99834	.07498	.99719	42
19	.00553	.99998	.02298	.99974	.04042	.99918	.05785	.99833	.07527	.99716	41
20	.00582	.99998	.02327	.99973	.04071	.99917	.05814	.99831	.07556	.99714	40
21	.00611	.99998	.02356	.99972	.04100	.99916	.05844	.99829	.07585	.99712	39
22	.00640	.99998	.02385	.99972	.04129	.99915	.05873	.99827	.07614	.99710	38
23	.00669	.99998	.02414	.99971	.04159	.99913	.05902	.99826	.07643	.99708	37
24	.00698	.99998	.02443	.99970	.04188	.99912	.05931	.99824	.07672	.99705	36
25	.00727	.99997	.02472	.99969	.04217	.99911	.05960	.99822	.07701	.99703	35
26	.00756	.99997	.02501	.99969	.04246	.99910	.05989	.99821	.07730	.99701	34
27	.00785	.99997	.02530	.99968	.04275	.99909	.06018	.99819	.07759	.99699	33
28	.00814	.99997	.02560	.99967	.04304	.99907	.06047	.99817	.07788	.99696	32
29	.00844	.99996	.02589	.99966	.04333	.99906	.06076	.99815	.07817	.99694	31
30	.00873	.99996	.02618	.99966	.04362	.99905	.06105	.99813	.07846	.99692	30
31	.00902	.99996	.02647	.99965	.04391	.99904	.06134	.99812	.07875	.99689	29
32	.00931	.99996	.02676	.99964	.04420	.99902	.06163	.99810	.07904	.99687	28
33	.00960	.99995	.02705	.99963	.04449	.99901	.06192	.99808	.07933	.99685	27
34	.00989	.99995	.02734	.99963	.04478	.99900	.06221	.99806	.07962	.99683	26
35	.01018	.99995	.02763	.99962	.04507	.99898	.06250	.99804	.07991	.99680	25
36	.01047	.99995	.02792	.99961	.04536	.99897	.06279	.99803	.08020	.99678	24
37	.01076	.99994	.02821	.99960	.04565	.99896	.06308	.99801	.08049	.99676	23
38	.01105	.99994	.02850	.99959	.04594	.99894	.06337	.99799	.08078	.99673	22
39	.01134	.99994	.02879	.99959	.04623	.99893	.06366	.99797	.08107	.99671	21
40	.01164	.99993	.02908	.99958	.04653	.99892	.06395	.99795	.08136	.99668	20
41	.01193	.99993	.02938	.99957	.04682	.99890	.06424	.99793	.08165	.99666	19
42	.01222	.99993	.02967	.99956	.04711	.99889	.06453	.99792	.08194	.99664	18
43	.01251	.99992	.02996	.99955	.04740	.99888	.06482	.99790	.08223	.99661	17
44	.01280	.99992	.03025	.99954	.04769	.99886	.06511	.99788	.08252	.99659	16
45	.01309	.99991	.03054	.99953	.04798	.99885	.06540	.99786	.08281	.99657	15
46	.01338	.99991	.03083	.99952	.04827	.99883	.06569	.99784	.08310	.99654	14
47	.01367	.99991	.03112	.99952	.04856	.99882	.06598	.99782	.08339	.99652	13
48	.01396	.99990	.03141	.99951	.04885	.99881	.06627	.99780	.08368	.99649	12
49	.01425	.99990	.03170	.99950	.04914	.99879	.06656	.99778	.08397	.99647	11
50	.01454	.99989	.03199	.99949	.04943	.99878	.06685	.99776	.08426	.99644	10
51	.01483	.99989	.03228	.99948	.04972	.99876	.06714	.99774	.08455	.99642	9
52	.01513	.99989	.03257	.99947	.05001	.99875	.06743	.99772	.08484	.99639	8
53	.01542	.99988	.03286	.99946	.05030	.99873	.06773	.99770	.08513	.99637	7
54	.01571	.99988	.03316	.99945	.05059	.99872	.06802	.99768	.08542	.99635	6
55	.01600	.99987	.03345	.99944	.05088	.99870	.06831	.99766	.08571	.99632	5
56	.01629	.99987	.03374	.99943	.05117	.99869	.06860	.99764	.08600	.99630	4
57	.01658	.99986	.03403	.99942	.05146	.99867	.06889	.99762	.08629	.99627	3
58	.01687	.99986	.03432	.99941	.05175	.99866	.06918	.99760	.08658	.99625	2
59	.01716	.99985	.03461	.99940	.05205	.99864	.06947	.99758	.08687	.99622	1
60	.01745	.99985	.03490	.99939	.05234	.99863	.06976	.99756	.08716	.99619	0
′	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	′
	89°		88°		87°		86°		85°		

′	5°		6°		7°		8°		9°		′
	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	
0	.08716	.99619	.10453	.99452	.12187	.99255	.13917	.99027	.15643	.98769	60
1	.08745	.99617	.10482	.99449	.12216	.99251	.13946	.99023	.15672	.98764	59
2	.08774	.99614	.10511	.99446	.12245	.99248	.13975	.99019	.15701	.98760	58
3	.08803	.99612	.10540	.99443	.12274	.99244	.14004	.99015	.15730	.98755	57
4	.08831	.99609	.10569	.99440	.12302	.99240	.14033	.99011	.15758	.98751	56
5	.08860	.99607	.10597	.99437	.12331	.99237	.14061	.99006	.15787	.98746	55
6	.08889	.99604	.10626	.99434	.12360	.99233	.14090	.99002	.15816	.98741	54
7	.08918	.99602	.10655	.99431	.12389	.99230	.14119	.98998	.15845	.98737	53
8	.08947	.99599	.10684	.99428	.12418	.99226	.14148	.98994	.15873	.98732	52
9	.08976	.99596	.10713	.99424	.12447	.99222	.14177	.98990	.15902	.98728	51
10	.09005	.99594	.10742	.99421	.12476	.99219	.14205	.98986	.15931	.98723	50
11	.09034	.99591	.10771	.99418	.12504	.99215	.14234	.98982	.15959	.98718	49
12	.09063	.99588	.10800	.99415	.12533	.99211	.14263	.98978	.15988	.98714	48
13	.09092	.99586	.10829	.99412	.12562	.99208	.14292	.98973	.16017	.98709	47
14	.09121	.99583	.10858	.99409	.12591	.99204	.14320	.98969	.16046	.98704	46
15	.09150	.99580	.10887	.99406	.12620	.99200	.14349	.98965	.16074	.98700	45
16	.09179	.99578	.10916	.99402	.12649	.99197	.14378	.98961	.16103	.98695	44
17	.09208	.99575	.10945	.99399	.12678	.99193	.14407	.98957	.16132	.98690	43
18	.09237	.99572	.10973	.99396	.12706	.99189	.14436	.98953	.16160	.98686	42
19	.09266	.99570	.11002	.99393	.12735	.99186	.14464	.98948	.16189	.98681	41
20	.09295	.99567	.11031	.99390	.12764	.99182	.14493	.98944	.16218	.98676	40
21	.09324	.99564	.11060	.99386	.12793	.99178	.14522	.98940	.16246	.98671	39
22	.09353	.99562	.11089	.99383	.12822	.99175	.14551	.98936	.16275	.98667	38
23	.09382	.99559	.11118	.99380	.12851	.99171	.14580	.98931	.16304	.98662	37
24	.09411	.99556	.11147	.99377	.12880	.99167	.14608	.98927	.16333	.98657	36
25	.09440	.99553	.11176	.99374	.12908	.99163	.14637	.98923	.16361	.98652	35
26	.09469	.99551	.11205	.99370	.12937	.99160	.14666	.98919	.16390	.98648	34
27	.09498	.99548	.11234	.99367	.12966	.99156	.14695	.98914	.16419	.98643	33
28	.09527	.99545	.11263	.99364	.12995	.99152	.14723	.98910	.16447	.98638	32
29	.09556	.99542	.11291	.99360	.13024	.99148	.14752	.98906	.16476	.98633	31
30	.09585	.99540	.11320	.99357	.13053	.99144	.14781	.98902	.16505	.98629	30
31	.09614	.99537	.11349	.99354	.13081	.99141	.14810	.98897	.16533	.98624	29
32	.09642	.99534	.11378	.99351	.13110	.99137	.14838	.98893	.16562	.98619	28
33	.09671	.99531	.11407	.99347	.13139	.99133	.14867	.98889	.16591	.98614	27
34	.09700	.99528	.11436	.99344	.13168	.99129	.14896	.98884	.16620	.98609	26
35	.09729	.99526	.11465	.99341	.13197	.99125	.14925	.98880	.16648	.98604	25
36	.09758	.99523	.11494	.99337	.13226	.99122	.14954	.98876	.16677	.98600	24
37	.09787	.99520	.11523	.99334	.13254	.99118	.14982	.98871	.16706	.98595	23
38	.09816	.99517	.11552	.99331	.13283	.99114	.15011	.98867	.16734	.98590	22
39	.09845	.99514	.11580	.99327	.13312	.99110	.15040	.98863	.16763	.98585	21
40	.09874	.99511	.11609	.99324	.13341	.99106	.15069	.98858	.16792	.98580	20
41	.09903	.99508	.11638	.99320	.13370	.99102	.15097	.98854	.16820	.98575	19
42	.09932	.99506	.11667	.99317	.13399	.99098	.15126	.98849	.16849	.98570	18
43	.09961	.99503	.11696	.99314	.13427	.99094	.15155	.98845	.16878	.98565	17
44	.09990	.99500	.11725	.99310	.13456	.99091	.15184	.98841	.16906	.98561	16
45	.10019	.99497	.11754	.99307	.13485	.99087	.15212	.98836	.16935	.98556	15
46	.10048	.99494	.11783	.99303	.13514	.99083	.15241	.98832	.16964	.98551	14
47	.10077	.99491	.11812	.99300	.13543	.99079	.15270	.98827	.16992	.98546	13
48	.10106	.99488	.11840	.99297	.13572	.99075	.15299	.98823	.17021	.98541	12
49	.10135	.99485	.11869	.99293	.13600	.99071	.15327	.98818	.17050	.98536	11
50	.10164	.99482	.11898	.99290	.13629	.99067	.15356	.98814	.17078	.98531	10
51	.10192	.99479	.11927	.99286	.13658	.99063	.15385	.98809	.17107	.98526	9
52	.10221	.99476	.11956	.99283	.13687	.99059	.15414	.98805	.17136	.98521	8
53	.10250	.99473	.11985	.99279	.13716	.99055	.15442	.98800	.17164	.98516	7
54	.10279	.99470	.12014	.99276	.13744	.99051	.15471	.98796	.17193	.98511	6
55	.10308	.99467	.12043	.99272	.13773	.99047	.15500	.98791	.17222	.98506	5
56	.10337	.99464	.12071	.99269	.13802	.99043	.15529	.98787	.17250	.98501	4
57	.10366	.99461	.12100	.99265	.13831	.99039	.15557	.98782	.17279	.98496	3
58	.10395	.99458	.12129	.99262	.13860	.99035	.15586	.98778	.17308	.98491	2
59	.10424	.99455	.12158	.99258	.13889	.99031	.15615	.98773	.17336	.98486	1
60	.10453	.99452	.12187	.99255	.13917	.99027	.15643	.98769	.17365	.98481	0
′	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	′
	84°		83°		82°		81°		80°		

′	10°		11°		12°		13°		14°		′
	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	
0	.17365	.98481	.19081	.98163	.20791	.97815	.22495	.97437	.24192	.97030	60
1	.17393	.98476	.19109	.98157	.20820	.97809	.22523	.97430	.24220	.97023	59
2	.17422	.98471	.19138	.98152	.20848	.97803	.22552	.97424	.24249	.97015	58
3	.17451	.98466	.19167	.98146	.20877	.97797	.22580	.97417	.24277	.97008	57
4	.17479	.98461	.19195	.98140	.20905	.97791	.22608	.97411	.24305	.97001	56
5	.17508	.98455	.19224	.98135	.20933	.97784	.22637	.97404	.24333	.96994	55
6	.17537	.98450	.19252	.98129	.20962	.97778	.22665	.97398	.24362	.96987	54
7	.17565	.98445	.19281	.98124	.20990	.97772	.22693	.97391	.24390	.96980	53
8	.17594	.98440	.19309	.98118	.21019	.97766	.22722	.97384	.24418	.96973	52
9	.17623	.98435	.19338	.98112	.21047	.97760	.22750	.97378	.24445	.96966	51
10	.17651	.98430	.19366	.98107	.21076	.97754	.22778	.97371	.24474	.96959	50
11	.17680	.98425	.19395	.98101	.21104	.97748	.22807	.97365	.24503	.96952	49
12	.17708	.98420	.19423	.98096	.21132	.97742	.22835	.97358	.24531	.96945	48
13	.17737	.98414	.19452	.98090	.21161	.97735	.22863	.97351	.24559	.96937	47
14	.17766	.98409	.19481	.98084	.21189	.97729	.22892	.97345	.24587	.96930	46
15	.17794	.98404	.19509	.98079	.21218	.97723	.22920	.97338	.24615	.96923	45
16	.17823	.98399	.19538	.98073	.21246	.97717	.22948	.97331	.24644	.96916	44
17	.17852	.98394	.19566	.98067	.21275	.97711	.22977	.97325	.24672	.96909	43
18	.17880	.98389	.19595	.98061	.21303	.97705	.23005	.97318	.24700	.96902	42
19	.17909	.98383	.19623	.98056	.21331	.97698	.23033	.97311	.24728	.96894	41
20	.17937	.98378	.19652	.98050	.21360	.97692	.23062	.97304	.24756	.96887	40
21	.17966	.98373	.19680	.98044	.21388	.97686	.23090	.97298	.24784	.96880	39
22	.17995	.98368	.19709	.98039	.21417	.97680	.23118	.97291	.24813	.96873	38
23	.18023	.98362	.19737	.98033	.21445	.97673	.23146	.97284	.24841	.96865	37
24	.18052	.98357	.19766	.98027	.21474	.97667	.23175	.97278	.24869	.96858	36
25	.18081	.98352	.19794	.98021	.21502	.97661	.23203	.97271	.24897	.96851	35
26	.18109	.98347	.19823	.98016	.21530	.97655	.23231	.97264	.24925	.96844	34
27	.18138	.98341	.19851	.98010	.21559	.97648	.23260	.97257	.24954	.96837	33
28	.18166	.98336	.19880	.98004	.21587	.97642	.23288	.97251	.24982	.96829	32
29	.18195	.98331	.19908	.97998	.21616	.97636	.23316	.97244	.25010	.96822	31
30	.18224	.98325	.19937	.97992	.21644	.97630	.23345	.97237	.25038	.96815	30
31	.18252	.98320	.19965	.97987	.21672	.97623	.23373	.97230	.25066	.96807	29
32	.18281	.98315	.19994	.97981	.21701	.97617	.23401	.97223	.25094	.96800	28
33	.18309	.98310	.20022	.97975	.21729	.97611	.23429	.97217	.25122	.96793	27
34	.18338	.98304	.20051	.97969	.21758	.97604	.23458	.97210	.25151	.96786	26
35	.18367	.98299	.20079	.97963	.21786	.97598	.23486	.97203	.25179	.96778	25
36	.18395	.98294	.20108	.97958	.21814	.97592	.23514	.97196	.25207	.96771	24
37	.18424	.98288	.20136	.97952	.21843	.97585	.23542	.97189	.25235	.96764	23
38	.18452	.98283	.20165	.97946	.21871	.97579	.23571	.97182	.25263	.96756	22
39	.18481	.98277	.20193	.97940	.21899	.97573	.23599	.97176	.25291	.96749	21
40	.18509	.98272	.20222	.97934	.21928	.97566	.23627	.97169	.25320	.96742	20
41	.18538	.98267	.20250	.97928	.21956	.97560	.23656	.97162	.25348	.96734	19
42	.18567	.98261	.20279	.97922	.21985	.97553	.23684	.97155	.25376	.96727	18
43	.18595	.98256	.20307	.97916	.22013	.97547	.23712	.97148	.25404	.96719	17
44	.18624	.98250	.20336	.97910	.22041	.97541	.23740	.97141	.25432	.96712	16
45	.18652	.98245	.20364	.97905	.22070	.97534	.23769	.97134	.25460	.96705	15
46	.18681	.98240	.20393	.97899	.22098	.97528	.23797	.97127	.25488	.96697	14
47	.18710	.98234	.20421	.97893	.22126	.97521	.23825	.97120	.25516	.96690	13
48	.18738	.98229	.20450	.97887	.22155	.97515	.23853	.97113	.25545	.96682	12
49	.18767	.98223	.20478	.97881	.22183	.97508	.23882	.97106	.25573	.96675	11
50	.18795	.98218	.20507	.97875	.22212	.97502	.23910	.97100	.25601	.96667	10
51	.18824	.98212	.20535	.97869	.22240	.97496	.23938	.97093	.25629	.96660	9
52	.18852	.98207	.20563	.97863	.22268	.97489	.23966	.97086	.25657	.96653	8
53	.18881	.98201	.20592	.97857	.22297	.97483	.23995	.97079	.25685	.96645	7
54	.18910	.98196	.20620	.97851	.22325	.97476	.24023	.97072	.25713	.96638	6
55	.18938	.98190	.20649	.97845	.22353	.97470	.24051	.97065	.25741	.96630	5
56	.18967	.98185	.20677	.97839	.22382	.97463	.24079	.97058	.25769	.96623	4
57	.18995	.98179	.20706	.97833	.22410	.97457	.24108	.97051	.25798	.96615	3
58	.19024	.98174	.20734	.97827	.22438	.97450	.24136	.97044	.25826	.96608	2
59	.19052	.98168	.20763	.97821	.22467	.97444	.24164	.97037	.25854	.96600	1
60	.19081	.98163	.20791	.97815	.22495	.97437	.24192	.97030	.25882	.96593	0
	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	
′	79°		78°		77°		76°		75°		

′	15°		16°		17°		18°		19°		′
	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	
0	.25882	.96593	.27564	.96126	.29237	.95630	.30902	.95106	.32557	.94552	60
1	.25910	.96585	.27592	.96118	.29265	.95622	.30929	.95097	.32584	.94542	59
2	.25938	.96578	.27620	.96110	.29293	.95613	.30957	.95088	.32612	.94533	58
3	.25966	.96570	.27648	.96102	.29321	.95605	.30985	.95079	.32639	.94523	57
4	.25994	.96562	.27676	.96094	.29348	.95596	.31012	.95070	.32667	.94514	56
5	.26022	.96555	.27704	.96086	.29376	.95588	.31040	.95061	.32694	.94504	55
6	.26050	.96547	.27731	.96078	.29404	.95579	.31068	.95052	.32722	.94495	54
7	.26079	.96540	.27759	.96070	.29432	.95571	.31095	.95043	.32749	.94485	53
8	.26107	.96532	.27787	.96062	.29460	.95562	.31123	.95034	.32777	.94476	52
9	.26135	.96524	.27815	.96054	.29487	.95554	.31151	.95024	.32804	.94466	51
10	.26163	.96517	.27843	.96046	.29515	.95545	.31178	.95015	.32832	.94457	50
11	.26191	.96509	.27871	.96037	.29543	.95536	.31206	.95006	.32859	.94447	49
12	.26219	.96502	.27899	.96029	.29571	.95528	.31233	.94997	.32887	.94438	48
13	.26247	.96494	.27927	.96021	.29599	.95519	.31261	.94988	.32914	.94428	47
14	.26275	.96486	.27955	.96013	.29626	.95511	.31289	.94979	.32942	.94418	46
15	.26303	.96479	.27983	.96005	.29654	.95502	.31316	.94970	.32969	.94409	45
16	.26331	.96471	.28011	.95997	.29682	.95493	.31344	.94961	.32997	.94399	44
17	.26359	.96463	.28039	.95989	.29710	.95485	.31372	.94952	.33024	.94390	43
18	.26387	.96456	.28067	.95981	.29737	.95476	.31399	.94943	.33051	.94380	42
19	.26415	.96448	.28095	.95972	.29765	.95467	.31427	.94933	.33079	.94370	41
20	.26443	.96440	.28123	.95964	.29793	.95459	.31454	.94924	.33106	.94361	40
21	.26471	.96433	.28150	.95956	.29821	.95450	.31482	.94915	.33134	.94351	39
22	.26500	.96425	.28178	.95948	.29849	.95441	.31510	.94906	.33161	.94342	38
23	.26528	.96417	.28206	.95940	.29876	.95433	.31537	.94897	.33189	.94332	37
24	.26556	.96410	.28234	.95931	.29904	.95424	.31565	.94888	.33216	.94322	36
25	.26584	.96402	.28262	.95923	.29932	.95415	.31593	.94878	.33244	.94313	35
26	.26612	.96394	.28290	.95915	.29960	.95407	.31620	.94869	.33271	.94303	34
27	.26640	.96386	.28318	.95907	.29987	.95398	.31648	.94860	.33298	.94293	33
28	.26668	.96379	.28346	.95898	.30015	.95389	.31675	.94851	.33326	.94284	32
29	.26696	.96371	.28374	.95890	.30043	.95380	.31703	.94842	.33353	.94274	31
30	.26724	.96363	.28402	.95882	.30071	.95372	.31730	.94832	.33381	.94264	30
31	.26752	.96355	.28429	.95874	.30098	.95363	.31758	.94823	.33408	.94254	29
32	.26780	.96347	.28457	.95865	.30126	.95354	.31786	.94814	.33436	.94245	28
33	.26808	.96340	.28485	.95857	.30154	.95345	.31813	.94805	.33463	.94235	27
34	.26836	.96332	.28513	.95849	.30182	.95337	.31841	.94795	.33490	.94225	26
35	.26864	.96324	.28541	.95841	.30209	.95328	.31868	.94786	.33518	.94215	25
36	.26892	.96316	.28569	.95832	.30237	.95319	.31896	.94777	.33545	.94206	24
37	.26920	.96308	.28597	.95824	.30265	.95310	.31923	.94768	.33573	.94197	23
38	.26948	.96301	.28625	.95816	.30292	.95301	.31951	.94758	.33600	.94188	22
39	.26976	.96293	.28652	.95807	.30320	.95293	.31979	.94749	.33627	.94176	21
40	.27004	.96285	.28680	.95799	.30348	.95284	.32006	.94740	.33655	.94167	20
41	.27032	.96277	.28708	.95791	.30376	.95275	.32034	.94730	.33682	.94157	19
42	.27060	.96269	.28736	.95782	.30403	.95266	.32061	.94721	.33710	.94147	18
43	.27088	.96261	.28764	.95774	.30431	.95257	.32089	.94712	.33737	.94137	17
44	.27116	.96253	.28792	.95766	.30459	.95248	.32116	.94702	.33764	.94127	16
45	.27144	.96246	.28820	.95757	.30486	.95240	.32144	.94693	.33792	.94118	15
46	.27172	.96238	.28847	.95749	.30514	.95231	.32171	.94684	.33819	.94108	14
47	.27200	.96230	.28875	.95740	.30542	.95222	.32199	.94674	.33846	.94098	13
48	.27228	.96222	.28903	.95732	.30570	.95213	.32227	.94665	.33874	.94088	12
49	.27256	.96214	.28931	.95724	.30597	.95204	.32254	.94656	.33901	.94078	11
50	.27284	.96206	.28959	.95715	.30625	.95195	.32282	.94646	.33929	.94068	10
51	.27312	.96198	.28987	.95707	.30653	.95186	.32309	.94637	.33956	.94058	9
52	.27340	.96190	.29015	.95698	.30680	.95177	.32337	.94627	.33983	.94049	8
53	.27368	.96182	.29042	.95690	.30708	.95168	.32364	.94618	.34011	.94039	7
54	.27396	.96174	.29070	.95681	.30736	.95159	.32392	.94609	.34038	.94029	6
55	.27424	.96166	.29098	.95673	.30763	.95150	.32419	.94599	.34065	.94019	5
56	.27452	.96158	.29126	.95664	.30791	.95142	.32447	.94590	.34093	.94009	4
57	.27480	.96150	.29154	.95656	.30819	.95133	.32474	.94580	.34120	.93999	3
58	.27508	.96142	.29182	.95647	.30846	.95124	.32502	.94571	.34147	.93989	2
59	.27536	.96134	.29209	.95639	.30874	.95115	.32529	.94561	.34175	.93979	1
60	.27564	.96126	.29237	.95630	.30902	.95106	.32557	.94552	.34202	.93969	0
′	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	′
	74°		73°		72°		71°		70°		

′	20°		21°		22°		23°		24°		′
	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	
0	.34202	.93969	.35837	.93358	.37461	.92718	.39073	.92050	.40674	.91355	60
1	.34229	.93959	.35864	.93348	.37488	.92707	.39100	.92039	.40700	.91343	59
2	.34257	.93949	.35891	.93337	.37515	.92697	.39127	.92028	.40727	.91331	58
3	.34284	.93939	.35918	.93327	.37542	.92686	.39153	.92016	.40753	.91319	57
4	.34311	.93929	.35945	.93316	.37569	.92675	.39180	.92005	.40780	.91307	56
5	.34339	.93919	.35973	.93306	.37595	.92664	.39207	.91994	.40806	.91295	55
6	.34366	.93909	.36000	.93295	.37622	.92653	.39234	.91982	.40833	.91283	54
7	.34393	.93899	.36027	.93285	.37649	.92642	.39260	.91971	.40860	.91272	53
8	.34421	.93889	.36054	.93274	.37676	.92631	.39287	.91959	.40886	.91260	52
9	.34448	.93879	.36081	.93264	.37703	.92620	.39314	.91948	.40913	.91248	51
10	.34475	.93869	.36108	.93253	.37730	.92609	.39341	.91936	.40939	.91236	50
11	.34503	.93859	.36135	.93243	.37757	.92598	.39367	.91925	.40966	.91224	49
12	.34530	.93849	.36162	.93232	.37784	.92587	.39394	.91914	.40992	.91212	48
13	.34557	.93839	.36190	.93222	.37811	.92576	.39421	.91902	.41019	.91200	47
14	.34584	.93829	.36217	.93211	.37838	.92565	.39448	.91891	.41045	.91188	46
15	.34612	.93819	.36244	.93201	.37865	.92554	.39474	.91879	.41072	.91176	45
16	.34639	.93809	.36271	.93190	.37892	.92543	.39501	.91868	.41098	.91164	44
17	.34666	.93799	.36298	.93180	.37919	.92532	.39528	.91856	.41125	.91152	43
18	.34694	.93789	.36325	.93169	.37946	.92521	.39555	.91845	.41151	.91140	42
19	.34721	.93779	.36352	.93159	.37973	.92510	.39581	.91833	.41178	.91128	41
20	.34748	.93769	.36379	.93148	.37999	.92499	.39608	.91822	.41204	.91116	40
21	.34775	.93759	.36406	.93137	.38026	.92488	.39635	.91810	.41231	.91104	39
22	.34803	.93748	.36434	.93127	.38053	.92477	.39661	.91799	.41257	.91092	38
23	.34830	.93738	.36461	.93116	.38080	.92466	.39688	.91787	.41284	.91080	37
24	.34857	.93728	.36488	.93106	.38107	.92455	.39715	.91775	.41310	.91068	36
25	.34884	.93718	.36515	.93095	.38134	.92444	.39741	.91764	.41337	.91056	35
26	.34912	.93708	.36542	.93084	.38161	.92432	.39768	.91752	.41363	.91044	34
27	.34939	.93698	.36569	.93074	.38189	.92421	.39795	.91741	.41390	.91032	33
28	.34966	.93688	.36596	.93063	.38215	.92410	.39822	.91729	.41416	.91020	32
29	.34993	.93677	.36623	.93052	.38241	.92399	.39848	.91718	.41443	.91008	31
30	.35021	.93667	.36650	.93042	.38268	.92388	.39875	.91706	.41469	.90996	30
31	.35048	.93657	.36677	.93031	.38295	.92377	.39902	.91694	.41496	.90984	29
32	.35075	.93647	.36704	.93020	.38322	.92366	.39928	.91683	.41522	.90972	28
33	.35102	.93637	.36731	.93010	.38349	.92355	.39955	.91671	.41549	.90960	27
34	.35130	.93626	.36758	.92999	.38376	.92343	.39982	.91660	.41575	.90948	26
35	.35157	.93616	.36785	.92988	.38403	.92332	.40008	.91648	.41602	.90936	25
36	.35184	.93606	.36811	.92978	.38430	.92321	.40035	.91636	.41628	.90924	24
37	.35211	.93596	.36839	.92967	.38456	.92310	.40062	.91625	.41655	.90911	23
38	.35239	.93585	.36867	.92956	.38483	.92299	.40088	.91613	.41681	.90899	22
39	.35266	.93575	.36894	.92945	.38510	.92287	.40115	.91601	.41707	.90887	21
40	.35293	.93565	.36921	.92935	.38537	.92276	.40141	.91590	.41734	.90875	20
41	.35320	.93555	.36948	.92924	.38564	.92265	.40168	.91578	.41760	.90863	19
42	.35347	.93544	.36975	.92913	.38591	.92254	.40195	.91566	.41787	.90851	18
43	.35375	.93534	.37002	.92902	.38617	.92243	.40221	.91555	.41813	.90839	17
44	.35402	.93524	.37029	.92892	.38644	.92231	.40248	.91543	.41840	.90826	16
45	.35429	.93514	.37056	.93881	.38671	.92220	.40275	.91531	.41866	.90814	15
46	.35456	.93503	.37083	.92870	.38698	.92209	.40301	.91519	.41892	.90802	14
47	.35484	.93493	.37110	.92859	.38725	.92198	.40328	.91508	.41919	.90790	13
48	.35511	.93483	.37137	.92849	.38752	.92186	.40355	.91496	.41945	.90778	12
49	.35538	.93472	.37164	.92838	.38778	.92175	.40381	.91484	.41972	.90766	11
50	.35565	.93462	.37191	.92827	.38805	.92164	.40408	.91472	.41998	.90753	10
51	.35592	.93452	.37218	.92816	.38832	.92152	.40434	.91461	.42024	.90741	9
52	.35619	.93441	.37245	.92806	.38859	.92141	.40461	.91449	.42051	.90729	8
53	.35647	.93431	.37272	.92794	.38886	.92130	.40488	.91437	.42077	.90717	7
54	.35674	.93420	.37299	.92784	.38912	.92119	.40514	.91425	.42104	.90704	6
55	.35701	.93410	.37326	.92773	.38939	.92107	.40541	.91414	.42130	.90692	5
56	.35728	.93400	.37353	.92762	.38966	.92096	.40567	.91402	.42156	.90680	4
57	.35755	.93389	.37380	.92751	.38993	.92085	.40594	.91390	.42183	.90668	3
58	.35782	.93379	.37407	.92740	.39020	.92073	.40621	.91378	.42209	.90655	2
59	.35810	.93368	.37434	.92729	.39046	.92062	.40647	.91366	.42235	.90643	1
60	.35837	.93358	.37461	.92718	.39073	.92050	.40674	.91355	.42262	.90631	0
′	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	′
	69°		68°		67°		66°		65°		

′	25°		26°		27°		28°		29°		′
	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	
0	.42262	.90631	.43837	.89879	.45399	.89101	.46947	.88295	.48481	.87462	60
1	.42288	.90618	.43863	.89867	.45425	.89087	.46973	.88281	.48506	.87448	59
2	.42315	.90606	.43889	.89854	.45451	.89074	.46999	.88267	.48532	.87434	58
3	.42341	.90591	.43916	.89841	.45477	.89061	.47024	.88254	.48557	.87420	57
4	.42367	.90582	.43942	.89828	.45503	.89048	.47050	.88240	.48583	.87406	56
5	.42394	.90569	.43968	.89816	.45529	.89035	.47076	.88226	.48608	.87391	55
6	.42420	.90557	.43994	.89803	.45554	.89021	.47101	.88213	.48634	.87377	54
7	.42446	.90545	.44020	.89790	.45580	.89008	.47127	.88199	.48659	.87363	53
8	.42473	.90532	.44046	.89777	.45606	.88995	.47153	.88185	.48684	.87349	52
9	.42199	.90520	.44072	.89764	.45632	.88981	.47178	.88172	.48710	.87335	51
10	.42525	.90507	.44098	.89752	.45658	.88968	.47204	.88158	.48735	.87321	50
11	.42552	.90495	.44124	.89739	.45684	.88955	.47229	.88144	.48761	.87306	49
12	.42578	.90483	.44151	.89726	.45710	.88942	.47255	.88130	.48786	.87292	48
13	.42604	.90470	.44177	.89713	.45736	.88928	.47281	.88117	.48811	.87278	47
14	.42631	.90458	.44203	.89700	.45762	.88915	.47306	.88103	.48837	.87264	46
15	.42657	.90446	.44229	.89687	.45787	.88902	.47332	.88089	.48862	.87250	45
16	.42683	.90433	.44255	.89674	.45813	.88888	.47358	.88075	.48888	.87235	44
17	.42709	.90421	.44281	.89662	.45839	.88875	.47383	.88062	.48913	.87221	43
18	.42736	.90408	.44307	.89649	.45865	.88862	.47409	.88048	.48938	.87207	42
19	.42762	.90396	.44333	.89636	.45891	.88848	.47434	.88034	.48964	.87192	41
20	.42788	.90383	.44359	.89623	.45917	.88835	.47460	.88020	.48989	.87178	40
21	.42815	.90371	.44385	.89610	.45942	.88822	.47486	.88006	.49014	.87164	39
22	.42841	.90358	.44411	.89597	.45968	.88808	.47511	.87993	.49040	.87150	38
23	[illegible]										37
24	.42894	.90334	.44464	.89571	.46020	.88782	.47562	.87965	.49090	.87121	36
25	.42920	.90321	.44490	.89558	.46046	.88768	.47588	.87951	.49116	.87107	35
26	.42946	.90309	.44516	.89545	.46072	.88755	.47614	.87937	.49141	.87093	34
27	.42972	.90296	.44542	.89532	.46097	.88741	.47639	.87923	.49166	.87079	33
28	.42999	.90284	.44568	.89519	.46123	.88728	.47665	.87909	.49192	.87064	32
29	.43025	.90271	.44594	.89506	.46149	.88715	.47690	.87896	.49217	.87050	31
30	.43051	.90259	.44620	.89493	.46175	.88701	.47716	.87882	.49242	.87036	30
31	.43077	.90246	.44646	.89480	.46201	.88688	.47741	.87868	.49268	.87021	29
32	.43104	.90233	.44672	.89467	.46226	.88674	.47767	.87854	.49293	.87007	28
33	.43130	.90221	.44698	.89454	.46252	.88661	.47793	.87840	.49318	.86993	27
34	.43156	.90208	.44724	.89441	.46278	.88647	.47818	.87826	.49344	.86978	26
35	.43182	.90196	.44750	.89428	.46304	.88634	.47844	.87812	.49369	.86964	25
36	.43209	.90183	.44776	.89415	.46330	.88620	.47869	.87798	.49394	.86949	24
37	.43235	.90171	.44803	.89402	.46355	.88607	.47895	.87784	.49419	.86935	23
38	.43261	.90158	.44828	.89389	.46381	.88593	.47920	.87770	.49445	.86921	22
39	.43287	.90145	.44854	.89376	.46407	.88580	.47946	.87756	.49470	.86906	21
40	.43313	.90133	.44880	.89363	.46433	.88566	.47971	.87743	.49495	.86892	20
41	.43340	.90120	.44906	.89350	.46458	.88553	.47997	.87729	.49521	.86878	19
42	.43366	.90108	.44932	.89337	.46484	.88539	.48022	.87715	.49546	.86863	18
43	.43392	.90095	.44958	.89324	.46510	.88526	.48048	.87701	.49571	.86849	17
44	.43418	.90082	.44984	.89311	.46535	.88512	.48073	.87687	.49596	.86834	16
45	.43445	.90070	.45010	.89298	.46561	.88499	.48099	.87673	.49622	.86820	15
46	.43471	.90057	.45036	.89285	.46587	.88485	.48124	.87659	.49647	.86805	14
47	.43497	.90045	.45062	.89272	.46613	.88472	.48150	.87645	.49672	.86791	13
48	.43523	.90032	.45088	.89259	.46639	.88458	.48175	.87631	.49697	.86777	12
49	.43549	.90019	.45114	.89245	.46664	.88445	.48201	.87617	.49723	.86762	11
50	.43575	.90007	.45140	.89232	.46690	.88431	.48226	.87603	.49748	.86748	10
51	.43602	.89994	.45166	.89219	.46716	.88417	.48252	.87589	.49773	.86733	9
52	.43628	.89981	.45192	.89206	.46742	.88404	.48277	.87575	.49798	.86719	8
53	.43654	.89968	.45218	.89193	.46767	.88390	.48303	.87561	.49824	.86704	7
54	.43680	.89956	.45243	.89180	.46793	.88377	.48328	.87546	.49849	.86690	6
55	.43706	.89943	.45269	.89167	.46819	.88363	.48354	.87532	.49874	.86675	5
56	.43733	.89930	.45295	.89153	.46844	.88349	.48379	.87518	.49899	.86661	4
57	.43759	.89918	.45321	.89140	.46870	.88336	.48405	.87504	.49924	.86646	3
58	.43785	.89905	.45347	.89127	.46896	.88322	.48430	.87490	.49950	.86632	2
59	.43811	.89892	.45373	.89114	.46921	.88308	.48456	.87476	.49975	.86617	1
60	.43837	.89879	.45399	.89101	.46947	.88295	.48481	.87462	.50000	.86603	0
′	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	′
	64°		63°		62°		61°		60°		

′	30°		31°		32°		33°		34°		′
	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	
0	.50000	.86603	.51504	.85717	.52992	.84805	.54464	.83867	.55919	.82904	60
1	.50025	.86588	.51529	.85702	.53017	.84789	.54488	.83851	.55943	.82887	59
2	.50050	.86573	.51554	.85687	.53041	.84774	.54513	.83835	.55968	.82871	58
3	.50076	.86559	.51579	.85672	.53066	.84759	.54537	.83819	.55992	.82855	57
4	.50101	.86544	.51604	.85657	.53091	.84743	.54561	.83804	.56016	.82839	56
5	.50126	.86530	.51628	.85642	.53115	.84728	.54586	.83788	.56040	.82823	55
6	.50151	.86515	.51653	.85627	.53140	.84712	.54610	.83772	.56064	.82806	54
7	.50176	.86501	.51678	.85612	.53164	.84697	.54635	.83756	.56088	.82790	53
8	.50201	.86486	.51703	.85597	.53189	.84681	.54659	.83740	.56112	.82774	52
9	.50227	.86471	.51728	.85582	.53214	.84666	.54683	.83724	.56136	.82757	51
10	.50252	.86457	.51753	.85567	.53238	.84650	.54708	.83708	.56160	.82741	50
11	.50277	.86442	.51778	.85551	.53263	.84635	.54732	.83692	.56184	.82724	49
12	.50302	.86427	.51803	.85536	.53288	.84619	.54756	.83676	.56208	.82708	48
13	.50327	.86413	.51828	.85521	.53312	.84604	.54781	.83660	.56232	.82692	47
14	.50352	.86398	.51852	.85506	.53337	.84588	.54805	.83645	.56256	.82675	46
15	.50377	.86384	.51877	.85491	.53361	.84573	.54829	.83629	.56280	.82659	45
16	.50403	.86369	.51902	.85476	.53386	.84557	.54854	.83613	.56305	.82643	44
17	.50428	.86354	.51927	.85461	.53411	.84542	.54878	.83597	.56329	.82626	43
18	.50453	.86340	.51952	.85446	.53435	.84526	.54902	.83581	.56353	.82610	42
19	.50478	.86325	.51977	.85431	.53460	.84511	.54927	.83565	.56377	.82593	41
20	.50503	.86310	.52002	.85416	.53484	.84495	.54951	.83549	.56401	.82577	40
21	.50528	.86295	.52026	.85401	.53509	.84480	.54975	.83533	.56425	.82561	39
22	.50553	.86281	.52051	.85385	.53534	.84464	.54999	.83517	.56449	.82544	38
23	.50578	.86266	.52076	.85370	.53558	.84448	.55024	.83501	.56473	.82528	37
24	.50603	.86251	.52101	.85355	.53583	.84433	.55048	.83485	.56497	.82511	36
25	.50628	.86237	.52126	.85340	.53607	.84417	.55072	.83469	.56521	.82495	35
26	.50654	.86222	.52151	.85325	.53632	.84402	.55097	.83453	.56545	.82478	34
27	.50679	.86207	.52175	.85310	.53656	.84386	.55121	.83437	.56569	.82462	33
28	.50704	.86192	.52200	.85294	.53681	.84370	.55145	.83421	.56593	.82446	32
29	.50729	.86178	.52225	.85279	.53705	.84355	.55169	.83405	.56617	.82429	31
30	.50754	.86163	.52250	.85264	.53730	.84339	.55194	.83389	.56641	.82413	30
31	.50779	.86148	.52275	.85249	.53754	.84324	.55218	.83373	.56665	.82396	29
32	.50804	.86133	.52299	.85234	.53779	.84308	.55242	.83356	.56689	.82380	28
33	.50829	.86119	.52324	.85218	.53804	.84292	.55266	.83340	.56713	.82363	27
34	.50854	.86104	.52349	.85203	.53828	.84277	.55291	.83324	.56736	.82347	26
35	.50879	.86089	.52374	.85188	.53853	.84261	.55315	.83308	.56760	.82330	25
36	.50904	.86074	.52399	.85173	.53877	.84245	.55339	.83292	.56784	.82314	24
37	.50929	.86059	.52423	.85157	.53902	.84230	.55363	.83276	.56808	.82297	23
38	.50954	.86045	.52448	.85142	.53926	.84214	.55388	.83260	.56832	.82281	22
39	.50979	.86030	.52473	.85127	.53951	.84198	.55412	.83244	.56856	.82264	21
40	.51004	.86015	.52498	.85112	.53975	.84182	.55436	.83228	.56880	.82248	20
41	.51029	.86000	.52522	.85096	.54000	.84167	.55460	.83212	.56904	.82231	19
42	.51054	.85985	.52547	.85081	.54024	.84151	.55484	.83195	.56928	.82214	18
43	.51079	.85970	.52572	.85066	.54049	.84135	.55509	.83179	.56952	.82198	17
44	.51104	.85956	.52597	.85051	.54073	.84120	.55533	.83163	.56976	.82181	16
45	.51129	.85941	.52621	.85035	.54097	.84104	.55557	.83147	.57000	.82165	15
46	.51154	.85926	.52646	.85020	.54123	.84088	.55581	.83131	.57024	.82148	14
47	.51179	.85911	.52671	.85005	.54146	.84072	.55605	.83115	.57047	.82132	13
48	.51204	.85896	.52696	.84989	.54171	.84057	.55630	.83098	.57071	.82115	12
49	.51229	.85881	.52720	.84974	.54195	.84041	.55654	.83082	.57095	.82098	11
50	.51254	.85866	.52745	.84959	.54220	.84025	.55678	.83066	.57119	.82082	10
51	.51279	.85851	.52770	.84943	.54244	.84009	.55702	.83050	.57143	.82065	9
52	.51304	.85836	.52794	.84928	.54269	.83994	.55726	.83034	.57167	.82048	8
53	.51329	.85821	.52819	.84913	.54293	.83978	.55750	.83017	.57191	.82032	7
54	.51354	.85806	.52844	.84897	.54317	.83962	.55775	.83001	.57215	.82015	6
55	.51379	.85792	.52869	.84882	.54342	.83946	.55799	.82985	.57238	.81999	5
56	.51404	.85777	.52893	.84866	.54366	.83930	.55823	.82969	.57262	.81982	4
57	.51429	.85762	.52918	.84851	.54391	.83915	.55847	.82953	.57286	.81965	3
58	.51454	.85747	.52943	.84835	.54415	.83899	.55871	.82936	.57310	.81949	2
59	.51479	.85732	.52967	.84820	.54440	.83883	.55895	.82920	.57334	.81932	1
60	.51504	.85717	.52992	.84805	.54464	.83867	.55919	.82904	.57358	.81915	0
′	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	′
	59°		58°		57°		56°		55°		

′	35°		36°		37°		38°		39°		′
	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	
0	.57358	.81915	.58779	.80902	.60182	.79864	.61566	.78801	.62932	.77715	60
1	.57381	.81899	.58802	.80885	.60205	.79846	.61589	.78783	.62955	.77696	59
2	.57405	.81882	.58826	.80867	.60228	.79829	.61612	.78765	.62977	.77678	58
3	.57429	.81865	.58849	.80850	.60251	.79811	.61635	.78747	.63000	.77660	57
4	.57453	.81848	.58873	.80833	.60274	.79793	.61658	.78729	.63022	.77641	56
5	.57477	.81832	.58896	.80816	.60298	.79776	.61681	.78711	.63045	.77623	55
6	.57501	.81815	.58920	.80799	.60321	.79758	.61704	.78694	.63068	.77605	54
7	.57524	.81798	.58943	.80782	.60344	.79741	.61726	.78676	.63090	.77586	53
8	.57548	.81782	.58967	.80765	.60367	.79723	.61749	.78658	.63113	.77568	52
9	.57572	.81765	.58990	.80748	.60390	.79706	.61772	.78640	.63135	.77550	51
10	.57596	.81748	.59014	.80730	.60414	.79688	.61795	.78622	.63158	.77531	50
11	.57619	.81731	.59037	.80713	.60437	.79671	.61818	.78604	.63180	.77513	49
12	.57643	.81714	.59061	.80696	.60460	.79653	.61841	.78586	.63203	.77494	48
13	.57667	.81698	.59084	.80679	.60483	.79635	.61864	.78568	.63225	.77476	47
14	.57691	.81681	.59108	.80662	.60506	.79618	.61887	.78550	.63248	.77458	46
15	.57715	.81664	.59131	.80644	.60529	.79600	.61909	.78532	.63271	.77439	45
16	.57738	.81647	.59154	.80627	.60553	.79583	.61932	.78514	.63293	.77421	44
17	.57762	.81631	.59178	.80610	.60576	.79565	.61955	.78496	.63316	.77402	43
18	.57786	.81614	.59201	.80593	.60599	.79547	.61978	.78478	.63338	.77384	42
19	.57810	.81597	.59225	.80576	.60622	.79530	.62001	.78460	.63361	.77366	41
20	.57833	.81580	.59248	.80558	.60645	.79512	.62024	.78442	.63383	.77347	40
21	.57857	.81563	.59272	.80541	.60668	.79494	.62046	.78424	.63406	.77329	39
22	.57881	.81546	.59295	.80524	.60691	.79477	.62069	.78405	.63428	.77310	38
23	.57904	.81530	.59318	.80507	.60714	.79459	.62092	.78387	.63451	.77292	37
24	.57928	.81513	.59342	.80489	.60738	.79441	.62115	.78369	.63473	.77273	36
25	.57952	.81496	.59365	.80472	.60761	.79424	.62138	.78351	.63496	.77255	35
26	.57975	.81479	.59389	.80455	.60784	.79406	.62160	.78333	.63518	.77236	34
27	.57999	.81462	.59412	.80438	.60807	.79388	.62183	.78315	.63540	.77218	33
28	.58023	.81445	.59436	.80420	.60830	.79371	.62206	.78297	.63563	.77199	32
29	.58047	.81428	.59459	.80403	.60853	.79353	.62229	.78279	.63585	.77181	31
30	.58070	.81412	.59482	.80386	.60876	.79335	.62251	.78261	.63608	.77162	30
31	.58094	.81395	.59506	.80368	.60899	.79318	.62274	.78243	.63630	.77144	29
32	.58118	.81378	.59529	.80351	.60922	.79300	.62297	.78225	.63653	.77125	28
33	.58141	.81361	.59553	.80334	.60945	.79282	.62320	.78206	.63675	.77107	27
34	.58165	.81344	.59576	.80316	.60968	.79264	.62342	.78188	.63698	.77088	26
35	.58189	.81327	.59599	.80299	.60991	.79247	.62365	.78170	.63720	.77070	25
36	.58212	.81310	.59622	.80282	.61015	.79229	.62388	.78152	.63742	.77051	24
37	.58236	.81293	.59646	.80264	.61038	.79211	.62411	.78134	.63765	.77033	23
38	.58260	.81276	.59669	.80247	.61061	.79193	.62433	.78116	.63787	.77014	22
39	.58283	.81259	.59693	.80230	.61084	.79176	.62456	.78098	.63810	.76996	21
40	.58307	.81242	.59716	.80212	.61107	.79158	.62479	.78079	.63832	.76977	20
41	.58330	.81225	.59739	.80195	.61130	.79140	.62502	.78061	.63854	.76959	19
42	.58354	.81208	.59763	.80178	.61153	.79122	.62524	.78043	.63877	.76940	18
43	.58378	.81191	.59786	.80160	.61176	.79105	.62547	.78025	.63899	.76921	17
44	.58401	.81174	.59809	.80143	.61199	.79087	.62570	.78007	.63922	.76903	16
45	.58425	.81157	.59832	.80125	.61222	.79069	.62592	.77988	.63944	.76884	15
46	.58449	.81140	.59856	.80108	.61245	.79051	.62615	.77970	.63966	.76866	14
47	.58472	.81123	.59879	.80091	.61268	.79033	.62638	.77952	.63989	.76847	13
48	.58496	.81106	.59902	.80073	.61291	.79016	.62660	.77931	.64011	.76828	12
49	.58519	.81089	.59926	.80056	.61314	.78998	.62683	.77916	.64033	.76810	11
50	.58543	.81072	.59949	.80038	.61337	.78980	.62706	.77897	.64056	.76791	10
51	.58567	.81055	.59972	.80021	.61360	.78962	.62728	.77879	.64078	.76772	9
52	.58590	.81038	.59995	.80003	.61383	.78944	.62751	.77861	.64100	.76754	8
53	.58614	.81021	.60019	.79986	.61406	.78926	.62774	.77843	.64123	.76735	7
54	.58637	.81004	.60042	.79968	.61429	.78908	.62796	.77824	.64145	.76717	6
55	.58661	.80987	.60065	.79951	.61451	.78891	.62819	.77806	.64167	.76698	5
56	.58684	.80970	.60089	.79934	.61474	.78873	.62842	.77788	.64190	.76679	4
57	.58708	.80953	.60112	.79916	.61497	.78855	.62864	.77769	.64212	.76661	3
58	.58731	.80936	.60135	.79899	.61520	.78837	.62887	.77751	.64234	.76642	2
59	.58755	.80919	.60158	.79881	.61543	.78819	.62909	.77733	.64256	.76623	1
60	.58779	.80902	.60182	.79864	.61566	.78801	.62932	.77715	.64279	.76604	0
′	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	′
	54°		53°		52°		51°		50°		

′	40°		41°		42°		43°		44°		′
	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	
0	.64279	.76604	.65600	.75471	.66913	.74314	.68200	.73135	.69466	.71934	60
1	.64301	.76590	.65628	.75453	.66935	.74295	.68221	.73116	.69487	.71914	59
2	.64323	.76567	.65650	.75433	.66956	.74276	.68242	.73096	.69508	.71894	58
3	.64345	.76543	.65672	.75414	.66978	.74256	.68264	.73076	.69529	.71873	57
4	.64368	.76530	.65694	.75395	.66999	.74237	.68285	.73056	.69549	.71853	56
5	.64390	.76511	.65716	.75375	.67021	.74217	.68306	.73036	.69570	.71833	55
6	.64412	.76423	.65738	.75356	.67043	.74198	.68327	.73016	.69591	.71813	54
7	.64435	.76473	.65759	.75337	.67064	.74178	.68349	.72995	.69612	.71792	53
8	.64457	.76455	.65781	.75318	.67086	.74159	.68370	.72976	.69633	.71772	52
9	.64479	.76436	.65803	.75299	.67107	.74139	.68391	.72957	.69654	.71752	51
10	.64501	.76417	.65825	.75280	.67129	.74120	.68412	.72937	.69675	.71732	50
11	.64524	.76398	.65847	.75261	.67151	.74100	.68434	.72917	.69696	.71711	49
12	.64546	.76380	.65869	.75241	.67172	.74080	.68455	.72897	.69717	.71691	48
13	.64568	.76361	.65891	.75222	.67194	.74061	.68476	.72877	.69737	.71671	47
14	.64590	.76342	.65913	.75203	.67215	.74041	.68497	.72857	.69758	.71650	46
15	.64613	.76323	.65935	.75184	.67237	.74022	.68518	.72837	.69779	.71630	45
16	.64635	.76304	.65956	.75165	.67258	.74002	.68539	.72817	.69800	.71610	44
17	.64657	.76286	.65978	.75146	.67280	.73983	.68561	.72797	.69821	.71590	43
18	.64679	.76267	.66000	.75126	.67301	.73963	.68582	.72777	.69842	.71569	42
19	.64701	.76248	.66022	.75107	.67323	.73944	.68603	.72757	.69862	.71549	41
20	.64723	.76229	.66044	.75088	.67344	.73924	.68624	.72737	.69883	.71529	40
21	.64746	.76210	.66066	.75069	.67366	.73904	.68645	.72717	.69904	.71508	39
22	.64768	.76192	.66088	.75050	.67387	.73885	.68666	.72697	.69925	.71488	38
23	.64790	.76173	.66109	.75030	.67409	.73865	.68688	.72677	.69946	.71468	37
24	.64812	.76154	.66131	.75011	.67430	.73846	.68709	.72657	.69966	.71447	36
25	.64834	.76135	.66153	.74992	.67452	.73826	.68730	.72637	.69987	.71427	35
26	.64856	.76116	.66175	.74973	.67473	.73806	.68751	.72617	.70008	.71407	34
27	.64878	.76097	.66197	.74953	.67495	.73787	.68772	.72597	.70029	.71386	33
28	.64901	.76078	.66218	.74934	.67516	.73767	.68793	.72577	.70049	.71366	32
29	.64923	.76059	.66240	.74915	.67538	.73747	.68814	.72557	.70070	.71345	31
30	.64945	.76041	.66262	.74896	.67559	.73728	.68835	.72537	.70091	.71325	30
31	.64967	.76022	.66284	.74876	.67580	.73708	.68857	.72517	.70112	.71305	29
32	.64989	.76003	.66306	.74857	.67602	.73688	.68878	.72497	.70132	.71284	28
33	.65011	.75984	.66327	.74838	.67623	.73669	.68899	.72477	.70153	.71264	27
34	.65033	.75965	.66349	.74818	.67645	.73649	.68920	.72457	.70174	.71243	26
35	.65055	.75946	.66371	.74799	.67666	.73629	.68941	.72437	.70195	.71223	25
36	.65077	.75927	.66393	.74780	.67688	.73610	.68962	.72417	.70215	.71203	24
37	.65100	.75908	.66414	.74760	.67709	.73590	.68983	.72397	.70236	.71182	23
38	.65122	.75889	.66436	.74741	.67730	.73570	.69004	.72377	.70257	.71162	22
39	.65144	.75870	.66458	.74722	.67752	.73551	.69025	.72357	.70277	.71141	21
40	.65166	.75851	.66480	.74703	.67773	.73531	.69046	.72337	.70298	.71121	20
41	.65188	.75832	.66501	.74683	.67795	.73511	.69067	.72317	.70319	.71100	19
42	.65210	.75813	.66523	.74664	.67816	.73491	.69088	.72297	.70339	.71080	18
43	.65232	.75794	.66545	.74644	.67837	.73472	.69109	.72277	.70360	.71059	17
44	.65254	.75775	.66566	.74625	.67859	.73452	.69130	.72257	.70381	.71039	16
45	.65276	.75756	.66588	.74606	.67880	.73432	.69151	.72236	.70401	.71019	15
46	.65298	.75738	.66610	.74586	.67901	.73413	.69172	.72216	.70422	.70998	14
47	.65320	.75719	.66632	.74567	.67923	.73393	.69193	.72196	.70443	.70978	13
48	.65342	.75700	.66653	.74548	.67944	.73373	.69214	.72176	.70463	.70957	12
49	.65364	.75680	.66675	.74528	.67965	.73353	.69235	.72156	.70484	.70937	11
50	.65386	.75661	.66697	.74509	.67987	.73333	.69256	.72136	.70505	.70916	10
51	.65408	.75642	.66718	.74489	.68008	.73314	.69277	.72116	.70525	.70696	9
52	.65430	.75623	.66740	.74470	.68029	.73294	.69298	.72095	.70546	.70875	8
53	.65452	.75604	.66762	.74451	.68051	.73274	.69319	.72075	.70567	.70855	7
54	.65474	.75585	.66783	.74431	.68072	.73254	.69340	.72055	.70587	.70834	6
55	.65496	.75566	.66805	.74412	.68093	.73234	.69361	.72035	.70608	.70813	5
56	.65518	.75547	.66827	.74392	.68115	.73215	.69382	.72015	.70628	.70793	4
57	.65540	.75528	.66848	.74373	.68136	.73195	.69403	.71995	.70649	.70772	3
58	.65562	.75509	.66870	.74352	.68157	.73175	.69424	.71974	.70670	.70752	2
59	.65584	.75490	.66891	.74334	.68179	.73155	.69445	.71954	.70690	.70731	1
60	.65606	.75471	.66913	.74314	.68200	.73155	.69466	.71934	.70711	.70711	0
′	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	Cosin	Sine	′
	49°		48°		47°		46°		45°		

′	0°		1°		2°		3°		′
	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	
0	.00000	Infinite.	.01746	57.2900	.03492	28.6363	.05241	19 0811	60
1	.00029	3437.75	.01775	56.3506	.03521	28.3994	.05270	18 9755	59
2	.00058	1718.87	.01804	55.4415	.03550	28.1664	.05299	18 8711	58
3	.00087	1145.92	.01833	54.5613	.03579	27.9372	.05328	18.7678	57
4	.00116	859.436	.01862	53.7086	.03609	27.7117	.05357	18 6656	56
5	.00145	687.549	.01891	52.8821	.03638	27.4899	.05387	18.5645	55
6	.00175	572.957	.01920	52.0807	.03667	27.2715	.05416	18 4645	54
7	.00204	491.106	.01949	51.3032	.03696	27 0566	.05445	18.3655	53
8	.00233	429 718	.01978	50.5485	.03725	26.8450	.05474	18.2677	52
9	.00262	381 971	.02007	49 8157	.03754	26.6367	.05503	18.1708	51
10	.00291	343.774	.02036	49.1039	.03783	26.4316	.05533	18.0750	50
11	.00320	312.521	.02066	48.4121	03812	26.2296	.05562	17.9802	49
12	.00349	286 478	.02095	47.7395	03842	26 0307	.05591	17.8863	48
13	.00378	264.441	.02124	47.0853	.03871	25.8348	.05620	17.7934	47
14	.00407	245.552	.02153	46.4489	.03900	25.6418	.05649	17.7015	46
15	.00436	229 182	.02182	45.8294	.03929	25 4517	.05678	17.6106	45
16	.00465	214.858	.02211	45.2261	.03958	25.2644	.05708	17.5205	44
17	.00495	202.219	.02240	44.6386	.03987	25.0798	.05737	17.4314	43
18	.00524	190.984	.02269	44.0661	.04016	24.8978	.05766	17.3432	42
19	.00553	180 932	.02298	43.5081	.04046	24.7185	.05795	17.2558	41
20	.00582	171.885	.02328	42 9641	.04075	24.5418	.05824	17.1693	40
21	.00611	163.700	.02357	42 4335	.04104	24.3675	.05854	17 0837	39
22	.00640	156.259	.02386	41 9158	.04133	24.1957	.05883	16 9990	38
23	.00669	149.455	.02415	41 4108	.04162	24 0263	.05912	16.9150	37
24	.00698	143.237	.02444	40.9174	.04191	23.8593	.05941	16.8319	36
25	.00727	137.507	.02473	40 4358	.04220	23.6945	.05970	16.7496	35
26	.00756	132.219	.02502	39 9655	.04250	23.5321	.05999	16.6681	34
27	.00785	127.321	.02531	39 5059	.04279	23.3718	.06029	16 5874	33
28	.00815	122.774	.02560	39 0568	.04308	23 2137	.06058	16 5075	32
29	.00844	118.540	.02589	38 6177	.04337	23.0577	.06087	16.4283	31
30	.00873	114.589	.02619	38.1885	.04366	22.9038	.06116	16.3499	30
31	.00902	110.892	.02648	37.7686	.04395	22.7519	.06145	16.2722	29
32	.00931	107.426	.02677	37 3579	.04424	22.6020	.06175	16.1952	28
33	.00960	104.171	.02706	36 9560	.04454	22.4541	.06204	16.1190	27
34	.00989	101.107	.02735	36 5627	.04483	22.3081	.06233	16.0435	26
35	.01018	98.2179	.02764	36 1776	.04512	22.1640	.06262	15.9687	25
36	.01047	95.4895	.02793	35.8005	.04541	22.0217	.06291	15.8945	24
37	.01076	92.9055	.02822	35.4313	.04570	21.8813	.06321	15.8211	23
38	.01105	90.4633	.02851	35.0695	.04599	21.7426	.06350	15.7483	22
39	.01135	88.1436	.02881	34.7151	.04628	21.6056	.06379	15.6762	21
40	.01164	85.9398	.02910	34.3678	.04658	21.4704	.06408	15.6048	20
41	.01193	83.8435	.02939	34 0273	.04687	21.3369	.06437	15.5340	19
42	.01222	81 8470	.02968	33.6935	.04716	21.2049	.06467	15.4638	18
43	.01251	79.9434	.02997	33.3662	.04745	21.0747	.06496	15.3943	17
44	.01280	78.1263	.03026	33.0452	.04774	20.9460	.06525	15.3254	16
45	.01309	76.3900	.03055	32 7303	.04803	20.8188	.06554	15.2571	15
46	.01338	74.7292	.03084	32 4213	.04833	20.6932	.06584	15.1893	14
47	.01367	73.1390	.03114	32 1181	.04862	20.5691	.06613	15.1222	13
48	.01396	71.6151	.03143	31 8205	.04891	20.4465	.06642	15.0557	12
49	.01425	70.1533	.03172	31 5284	.04920	20.3253	.06671	14.9898	11
50	.01455	68.7501	.03201	31 2416	.04949	20.2056	.06700	14.9244	10
51	.01484	67.4019	.03230	30.9599	.04978	20.0872	.06730	14.8596	9
52	.01513	66.1055	.03259	30 6833	.05007	19.9702	.06759	14.7954	8
53	.01542	64.8580	.03288	30 4116	.05037	19.8545	.06788	14.7317	7
54	.01571	63.6567	.03317	30 1445	.05066	19.7403	.06817	14.6685	6
55	.01600	62.4992	.03346	29.8823	.05095	19.6273	.06847	14.6059	5
56	.01629	61.3829	.03376	29.6245	.05124	19.5156	.06876	14.5438	4
57	.01658	60.3058	.03405	29 3711	.05153	19.4051	.06905	14 4823	3
58	.01687	59.2659	.03434	29.1220	.05182	19.2959	.06934	14.4212	2
59	.01716	58.2612	.03463	28.8771	.05212	19.1879	.06963	14 3607	1
60	.01746	57.2900	.03492	28.6363	.05241	19.0811	.06993	14.3007	0
′	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	′
	89°		88°		87°		86°		

′	4°		5°		6°		7°		′
	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	
0	.06993	14 3007	08749	11 4301	.10510	9.51436	.12278	8.14435	60
1	.07022	14.2411	08778	11 3919	.10540	9.48781	.12308	8.12481	59
2	.07051	14.1821	08807	11.3540	.10569	9.46141	.12338	8.10536	58
3	.07080	14.1235	08837	11 3163	.10599	9.43515	.12367	8.08600	57
4	.07110	14 0655	08866	11.2789	.10628	9.40904	.12397	8.06674	56
5	.07139	14 0079	08895	11.2417	.10657	9.38307	.12426	8.04756	55
6	.07168	13 9507	08925	11.2048	.10687	9.35724	.12456	8.02848	54
7	.07197	13 6940	08954	11.1681	.10716	9.33155	.12485	8.00948	53
8	.07227	13 8378	08983	11.1316	.10746	9 30599	.12515	7.99058	52
9	.07256	13 7821	09013	11.0954	.10775	9 28058	.12544	7.97176	51
10	.07285	13 7267	09042	11.0594	.10905	9.25530	.12574	7.95302	50
11	.07314	13 6719	09071	11.0237	.10834	9 23016	.12603	7.93438	49
12	.07344	13 6174	09101	10.9882	.10863	9.20516	.12633	7.91582	48
13	.07373	13 5634	09130	10.9529	.10893	9.18029	.12662	7.89734	47
14	.07402	13 5098	09159	10.9178	.10922	9 15554	.12692	7.87895	46
15	.07431	13 4566	09189	10.8829	.10952	9.13093	.12722	7.86064	45
16	.07461	13 4039	09218	10.8483	.10981	9.10646	.12751	7.84242	44
17	.07490	13 3515	09247	10.8139	.11011	9.08211	.12781	7.82428	43
18	.07519	13 2996	09277	10.7797	.11040	9.05789	.12810	7.80622	42
19	.07548	13 2480	09306	10.7457	.11070	9.03379	.12840	7.78825	41
20	.07578	13 1969	09335	10.7119	.11099	9.00983	.12869	7.77035	40
21	.07607	13 1461	09365	10 6783	.11128	8.98598	.12899	7.75254	39
22	.07636	13.0958	.09394	10 6450	.11158	8.96227	.12929	7.73480	38
23	.07665	13.0458	.09423	10 6118	.11187	8.93867	.12958	7.71715	37
24	.07695	12.9962	.09453	10.5789	.11217	8.91520	.12988	7.69957	36
25	.07724	12.9469	.09482	10.5462	.11246	8.89185	.13017	7.68208	35
26	.07753	12.8981	.09511	10.5136	.11276	8.86862	.13047	7.66466	34
27	.07782	12.8496	.09541	10.4813	.11305	8.84551	.13076	7.64732	33
28	.07812	12.8014	.09570	10.4491	.11335	8.82252	.13106	7.63005	32
29	.07841	12 7536	.09600	10.4172	.11364	8.79964	.13135	7.61287	31
30	.07870	12.7062	.09629	10.3854	.11394	8.77689	.13165	7.59575	30
31	.07899	12.6591	.09658	10.3538	.11423	8.75425	.13195	7.57872	29
32	.07929	12.6124	.09688	10 3224	.11452	8.73172	.13224	7.56176	28
33	.07958	12.5660	.09717	10.2913	.11482	8.70931	.13254	7.54487	27
34	.07987	12.5199	.09746	10.2602	.11511	8.68701	.13284	7.52806	26
35	.08017	12.4742	.09776	10.2294	.11541	8.66482	.13313	7.51132	25
36	.08046	12.4288	.09805	10.1988	.11570	8.64275	.13343	7.49465	24
37	.08075	12.3838	.09834	10.1683	.11600	8.62078	.13372	7.47806	23
38	.08104	12.3390	.09864	10.1381	.11629	8.59893	.13402	7.46154	22
39	.08134	12.2946	.09893	10.1080	.11659	8.57718	.13432	7.44509	21
40	.08163	12.2505	.09923	10.0780	.11688	8.55555	.13461	7.42871	20
41	.08192	12.2067	.09952	10.0483	.11718	8.53402	.13491	7.41240	19
42	.08221	12.1632	.09981	10.0187	.11747	8.51259	.13521	7.39616	18
43	.08251	12.1201	.10011	9.98981	.11777	8.49128	.13550	7.37999	17
44	.08280	12.0772	.10040	9.96007	.11806	8.47007	.13580	7.36389	16
45	.08309	12.0346	.10069	9.93101	.11836	8.44896	.13609	7.34788	15
46	.08339	11.9923	.10099	9.90211	.11865	8.42795	.13639	7.33190	14
47	.08368	11.9504	.10128	9.87338	.11895	8.40705	.13669	7.31600	13
48	.08397	11.9087	.10158	9.84482	.11924	8.38625	.13698	7.30018	12
49	.08427	11.8673	.10187	9.81641	.11954	8.36555	.13728	7.28442	11
50	.08456	11.8262	.10216	9.78817	.11983	8.34496	.13758	7.26873	10
51	.08485	11.7853	.10246	9 76009	.12013	8.32446	.13787	7.25310	9
52	.08514	11.7448	.10275	9.73217	.12042	8 30406	.13817	7.23754	8
53	.08544	11.7045	.10305	9.70441	.12072	8.28376	.13846	7.22204	7
54	.08573	11.6645	.10334	9.67680	.12101	8.26355	.13876	7.20661	6
55	.08602	11.6248	.10363	9.64935	.12131	8.24345	.13906	7.19125	5
56	.08632	11.5853	.10393	9.62205	.12160	8.22344	.13935	7.17594	4
57	.08661	11.5461	.10422	9.59490	.12190	8.20352	.13965	7.16071	3
58	.08690	11 5072	.10452	9.56791	.12219	8.18370	.13995	7.14553	2
59	.08720	11.4685	.10481	9.54106	.12249	8.16398	.14024	7.13042	1
60	.08749	11.4301	.10510	9.51436	.12278	8.14435	.14054	7.11537	0
′	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	′
	85°		84°		83°		82°		

′	8°		9°		10°		11°		′
	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	
0	.14054	7.11537	.15838	6.31375	.17633	5.67128	.19436	5.14455	60
1	.14084	7.10038	.15868	6.30189	.17663	5.66165	.19468	5.13658	59
2	.14113	7.08546	.15898	6.29007	.17693	5.65205	.19498	5.12862	58
3	.14143	7.07059	.15928	6.27829	.17723	5.64248	.19529	5.12069	57
4	.14173	7.05579	.15958	6.26655	.17753	5.63295	.19559	5.11279	56
5	.14202	7.04105	.15988	6.25486	.17783	5.62344	.19589	5.10490	55
6	.14232	7.02637	.16017	6.24321	.17813	5.61397	.19619	5.09704	54
7	.14262	7.01174	.16047	6.23160	.17843	5.60452	.19649	5.08921	53
8	.14291	6.99718	.16077	6.22003	.17873	5.59511	.19680	5.08139	52
9	.14321	6.98268	.16107	6.20851	.17903	5.58573	.19710	5.07360	51
10	.14351	6.96823	.16137	6.19703	.17933	5.57638	.19740	5.06584	50
11	.14381	6.95385	.16167	6.18559	.17963	5.56706	.19770	5.05809	49
12	.14410	6.93952	.16196	6.17419	.17993	5.55777	.19801	5.05037	48
13	.14440	6.92525	.16226	6.16283	.18023	5.54851	.19831	5.04267	47
14	.14470	6.91104	.16256	6.15151	.18053	5.53927	.19861	5.03499	46
15	.14499	6.89688	.16286	6.14023	.18083	5.53007	.19891	5.02734	45
16	.14529	6.88278	.16316	6.12899	.18113	5.52090	.19921	5.01971	44
17	.14559	6.86874	.16346	6.11779	.18143	5.51176	.19952	5.01210	43
18	.14588	6.85475	.16376	6.10664	.18173	5.50264	.19982	5.00451	42
19	.14618	6.84082	.16405	6.09552	.18203	5.49356	.20012	4.99695	41
20	.14648	6.82694	.16435	6.08444	.18233	5.48451	.20042	4.98940	40
21	.14678	6.81312	.16465	6.07340	.18263	5.47548	.20073	4.98188	39
22	.14707	6.79936	.16495	6.06240	.18293	5.46648	.20103	4.97438	38
23	.14737	6.78564	.16525	6.05143	.18323	5.45751	.20133	4.96690	37
24	.14767	6.77199	.16555	6.04051	.18353	5.44857	.20164	4.95945	36
25	.14796	6.75838	.16585	6.02962	.18384	5.43966	.20194	4.95201	35
26	.14826	6.74483	.16615	6.01878	.18114	5.43077	.20224	4.94460	34
27	.14856	6.73133	.16645	6.00797	.18444	5.42193	.20254	4.93721	33
28	.14886	6.71789	.15674	5.99720	.18474	5.41309	.20285	4.92984	32
29	.14915	6.70450	.16704	5.99646	.18504	5.40429	.20315	4.92249	31
30	.14945	6.69116	.16734	5.97576	.18534	5.39552	.20345	4.91516	30
31	.14975	6.67787	.16764	5.96510	.18564	5.38677	.20376	4.90785	29
32	.15005	6.66463	.16794	5.96448	.18594	5.37805	.20406	4.90056	28
33	.15034	6.65144	.16824	5.94390	.18624	5.36936	.20436	4.89330	27
34	.15064	6.63831	.16854	5.93335	.18654	5.36070	.20466	4.88606	26
35	.15094	6.62523	.16884	5.92283	.18684	5.35206	.20497	4.87882	25
36	.15124	6.61219	.16914	5.91236	.18714	5.34345	.20527	4.87162	24
37	.15153	6.59921	.16944	5.90191	.18745	5.33487	.20557	4.86444	23
38	.15183	6.58627	.16974	5.89151	.18775	5.32631	.20588	4.85727	22
39	.15213	6.57339	.17004	5.88114	.18805	5.31778	.20618	4.85013	21
40	.15243	6.56055	.17033	5.87080	.18835	5.30928	.20648	4.84300	20
41	.15272	6.54777	.17063	5.86051	.18865	5.30080	.20679	4.83590	19
42	.15302	6.53503	.17093	5.85024	.18895	5.29235	.20709	4.82882	18
43	.15332	6.52234	.17123	5.84001	.18925	5.28393	.20739	4.82175	17
44	.15362	6.50970	.17153	5.82982	.18955	5.27553	.20770	4.81471	16
45	.15391	6.49710	.17183	5.81966	.18986	5.26715	.20800	4.80769	15
46	.15421	6.48456	.17213	5.80953	.19016	5.25880	.20830	4.80068	14
47	.15451	6.47206	.17243	5.79944	.19046	5.25048	.20861	4.79370	13
48	.15481	6.45961	.17273	5.78938	.19076	5.24218	.20891	4.78673	12
49	.15511	6.44720	.17303	5.77935	.19106	5.23391	.20921	4.77978	11
50	.15540	6.43484	.17333	5.76937	.19136	5.22566	.20952	4.77286	10
51	.15570	6.42253	.17363	5.75941	.19166	5.21744	.20982	4.76595	9
52	.15600	6.41026	.17393	5.74949	.19197	5.20925	.21013	4.75906	8
53	.15630	6.39804	.17423	5.73960	.19227	5.20107	.21043	4.75219	7
54	.15660	6.38587	.17453	5.72974	.19257	5.19293	.21073	4.74534	6
55	.15689	6.37374	.17483	5.71992	.19287	5.18480	.21104	4.73851	5
56	.15719	6.36165	.17513	5.71013	.19317	5.17671	.21134	4.73170	4
57	.15749	6.34961	.17543	5.70037	.19347	5.16863	.21164	4.72490	3
58	.15779	6.33761	.17573	5.69064	.19378	5.16058	.21195	4.71813	2
59	.15809	6.32566	.17603	5.68094	.19408	5.15256	.21225	4.71137	1
60	.15838	6.31375	.17633	5.67128	.19438	5.14455	.21256	4.70463	0
′	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	′
	81°		80°		79°		78°		

′	12°		13°		14°		15°		′
	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	
0	.21256	4.70463	.23087	4.33148	.24933	4.01078	.26795	3.73205	60
1	.21286	4.69791	.23117	4.32573	.24964	4.00682	.26826	3.72771	59
2	.21316	4.69121	.23148	4.32001	.24995	4.00286	.26857	3.72338	58
3	.21347	4.68452	.23179	4.31430	.25026	3.99892	.26888	3.71907	57
4	.21377	4.67786	.23209	4.30860	.25056	3.99499	.26920	3.71476	56
5	.21406	4.67121	.23240	4.30291	.25087	3.99107	.26951	3.71046	55
6	.21438	4.66458	.23271	4.29724	.25118	3.98717	.26982	3.70616	54
7	.21469	4.65797	.23301	4.29159	.25149	3.98327	.27013	3.70188	53
8	.21499	4.65138	.23332	4.28595	.25180	3.97939	.27044	3.69761	52
9	.21529	4.64480	.23363	4.28032	.25211	3.97551	.27076	3.69335	51
10	.21560	4.63825	.23393	4.27471	.25242	3.97165	.27107	3.68909	50
11	.21590	4.63171	.23424	4.26911	.25273	3.96780	.27138	3.68485	49
12	.21621	4.62518	.23455	4.26352	.25304	3.96396	.27169	3.68061	48
13	.21651	4.61868	.23485	4.25795	.25335	3.96013	.27201	3.67638	47
14	.21682	4.61219	.23516	4.25239	.25366	3.95632	.27232	3.67217	46
15	.21712	4.60572	.23547	4.24685	.25397	3.95251	.27263	3.66796	45
16	.21743	4.59927	.23578	4.24132	.25428	3.94871	.27294	3.66376	44
17	.21773	4.59283	.23608	4.23580	.25459	3.94493	.27326	3.65957	43
18	.21804	4.58641	.23639	4.23030	.25490	3.94116	.27357	3.65538	42
19	.21834	4.58001	.23670	4.22481	.25521	3.93739	.27388	3.65121	41
20	.21864	4.57363	.23700	4.21933	.25553	3.93364	.27419	3.64705	40
21	.21895	4.56726	.23731	4.21387	.25583	3.92990	.27451	3.64289	39
22	.21925	4.56091	.23762	4.20842	.25614	3.90417	.27482	3.63874	38
23	.21956	4.55458	.23793	4.20298	.25645	3.89945	.27513	3.63461	37
24	.21986	4.54826	.23823	4.19755	.25676	3.89474	.27545	3.63048	36
25	.22017	4.54196	.23854	4.19215	.25707	3.89004	.27576	3.62636	35
26	.22047	4.53568	.23885	4.18675	.25738	3.88536	.27607	3.62224	34
27	.22078	4.52941	.23916	4.18137	.25769	3.88068	.27638	3.61814	33
28	.22108	4.52316	.23946	4.17600	.25800	3.87601	.27670	3.61406	32
29	.22139	4.51693	.23977	4.17064	.25831	3.87136	.27701	3.60996	31
30	.22169	4.51071	.24008	4.16530	.25862	3.86671	.27732	3.60588	30
31	.22200	4.50451	.24039	4.15997	.25893	3.86208	.27764	3.60181	29
32	.22231	4.49832	.24069	4.15465	.25924	3.85745	.27795	3.59775	28
33	.22261	4.49215	.24100	4.14934	.25955	3.85284	.27826	3.59370	27
34	.22292	4.48600	.24131	4.14405	.25986	3.84824	.27858	3.58966	26
35	.22322	4.47986	.24162	4.13877	.26017	3.84364	.27889	3.58563	25
36	.22353	4.47374	.24193	4.13350	.26048	3.83906	.27921	3.58160	24
37	.22383	4.46764	.24223	4.12825	.26079	3.83449	.27952	3.57758	23
38	.22414	4.46155	.24254	4.12301	.26110	3.82992	.27983	3.57357	22
39	.22444	4.45548	.24285	4.11778	.26141	3.82537	.28015	3.56957	21
40	.22475	4.44942	.24316	4.11256	.26172	3.82083	.28046	3.56557	20
41	.22505	4.44338	.24347	4.10736	.26203	3.81630	.28077	3.56159	19
42	.22536	4.43735	.24377	4.10216	.26235	3.81177	.28109	3.55761	18
43	.22567	4.43134	.24408	4.09699	.26266	3.80726	.28140	3.55364	17
44	.22597	4.42534	.24439	4.09182	.26297	3.80276	.28172	3.54968	16
45	.22628	4.41936	.24470	4.08666	.26328	3.79827	.28203	3.54573	15
46	.22658	4.41340	.24501	4.08152	.26359	3.79378	.28234	3.54179	14
47	.22689	4.40745	.24532	4.07639	.26390	3.78931	.28266	3.53785	13
48	.22719	4.40152	.24562	4.07127	.26421	3.78485	.28297	3.53393	12
49	.22750	4.39560	.24593	4.06616	.26452	3.78040	.28329	3.53001	11
50	.22781	4.38969	.24624	4.06107	.26483	3.77595	.28360	3.52609	10
51	.22811	4.38381	.24655	4.05599	.26515	3.77152	.28391	3.52219	9
52	.22842	4.37793	.24686	4.05092	.26546	3.76709	.28423	3.51829	8
53	.22872	4.37207	.24717	4.04586	.26577	3.76268	.28454	3.51441	7
54	.22903	4.36623	.24747	4.04081	.26608	3.75828	.28485	3.51053	6
55	.22934	4.36040	.24778	4.03578	.26639	3.75388	.28517	3.50666	5
56	.22964	4.35459	.24809	4.03076	.26670	3.74950	.28549	3.50279	4
57	.22995	4.34879	.24840	4.02574	.26701	3.74512	.28580	3.49894	3
58	.23026	4.34300	.24871	4.02074	.26732	3.74075	.28612	3.49509	2
59	.23056	4.33723	.24902	4.01576	.26764	3.73640	.28643	3.49125	1
60	.23087	4.33148	.24933	4.01078	.26795	3.73205	.28675	3.48741	0
′	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	′
	77°		76°		75°		74°		

′	16°		17°		18°		19°		′
	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	
0	.28675	3.48741	.30573	3.27085	.32492	3.07768	.34433	2.90421	60
1	.28704	3.48359	.30605	3.26745	.32524	3.07464	.34465	2.90147	59
2	.28733	3.47977	.30637	3.26406	.32556	3.07160	.34498	2.89873	58
3	.28763	3.47596	.30669	3.26067	.32588	3.06857	.34530	2.89600	57
4	.28800	3.47216	.30700	3.25729	.32621	3.06554	.34563	2.89327	56
5	.28832	3.46837	.30732	3.25392	.32653	3.06252	.34596	2.89055	55
6	.28864	3.46458	.30764	3.25055	.32685	3.05950	.34628	2.88783	54
7	.28895	3.46080	.30796	3.24719	.32717	3.05649	.34661	2.88511	53
8	.28927	3.45703	.30828	3.24383	.32749	3.05349	.34693	2.88240	52
9	.28958	3.45327	.30860	3.24049	.32782	3.05049	.34726	2.87970	51
10	.28990	3.44951	.30891	3.23714	.32814	3.04749	.34758	2.87700	50
11	.29021	3.44576	.30923	3.23381	.32846	3.04450	.34791	2.87430	49
12	.29053	3.44202	.30955	3.23048	.32878	3.04152	.34824	2.87161	48
13	.29084	3.43829	.30987	3.22715	.32911	3.03854	.34856	2.86892	47
14	.29116	3.43456	.31019	3.22384	.32943	3.03556	.34889	2.86624	46
15	.29147	3.43084	.31051	3.22053	.32975	3.03260	.34922	2.86356	45
16	.29179	3.42713	.31083	3.21722	.33007	3.02963	.34954	2.86089	44
17	.29210	3.42343	.31115	3.21392	.33040	3.02667	.34987	2.85822	43
18	.29242	3.41973	.31147	3.21063	.33072	3.02372	.35020	2.85555	42
19	.29274	3.41604	.31178	3.20734	.33104	3.02077	.35052	2.85289	41
20	.29305	3.41236	.31210	3.20406	.33136	3.01783	.35085	2.85023	40
21	.29337	3.40869	.31242	3.20079	.33169	3.01489	.35118	2.84758	39
22	.29368	3.40502	.31274	3.19752	.33201	3.01196	.35150	2.84494	38
23	.29400	3.40136	.31306	3.19426	.33233	3.00903	.35183	2.84229	37
24	.29432	3.39771	.31338	3.19100	.33266	3.00611	.35216	2.83965	36
25	.29463	3.39406	.31370	3.18775	.33298	3.00319	.35248	2.83702	35
26	.29495	3.39042	.31402	3.18451	.33330	3.00028	.35281	2.83439	34
27	.29526	3.38679	.31434	3.18127	.33363	2.99738	.35314	2.83176	33
28	.29558	3.38317	.31466	3.17804	.33395	2.99447	.35346	2.82914	32
29	.29590	3.37955	.31498	3.17481	.33427	2.99158	.35379	2.82653	31
30	.29621	3.37594	.31530	3.17159	.33460	2.98868	.35412	2.82391	30
31	.29653	3.37234	.31562	3.16838	.33492	2.98580	.35445	2.82130	29
32	.29685	3.36875	.31594	3.16517	.33524	2.98292	.35477	2.81870	28
33	.29716	3.36516	.31626	3.16197	.33557	2.98004	.35510	2.81610	27
34	.29748	3.36158	.31658	3.15877	.33589	2.97717	.35543	2.81350	26
35	.29780	3.35800	.31690	3.15558	.33621	2.97430	.35576	2.81091	25
36	.29811	3.35443	.31722	3.15240	.33654	2.97144	.35608	2.80833	24
37	.29843	3.35087	.31754	3.14922	.33686	2.96858	.35641	2.80574	23
38	.29875	3.34732	.31786	3.14605	.33718	2.96573	.35674	2.80316	22
39	.29906	3.34377	.31818	3.14288	.33751	2.96288	.35707	2.80059	21
40	.29938	3.34023	.31850	3.13972	.33783	2.96004	.35740	2.79802	20
41	.29970	3.33670	.31882	3.13656	.33816	2.95721	.35772	2.79545	19
42	.30001	3.33317	.31914	3.13341	.33848	2.95437	.35805	2.79289	18
43	.30033	3.32965	.31946	3.13027	.33881	2.95155	.35838	2.79033	17
44	.30065	3.32614	.31978	3.12713	.33913	2.94872	.35871	2.78778	16
45	.30097	3.32264	.32010	3.12400	.33945	2.94591	.35904	2.78523	15
46	.30128	3.31914	.32042	3.12087	.33978	2.94309	.35937	2.78269	14
47	.30160	3.31565	.32074	3.11775	.34010	2.94028	.35969	2.78014	13
48	.30192	3.31216	.32106	3.11464	.34043	2.93748	.36002	2.77761	12
49	.30224	3.30868	.32139	3.11153	.34075	2.93468	.36035	2.77507	11
50	.30255	3.30521	.32171	3.10842	.34108	2.93189	.36068	2.77254	10
51	.30287	3.30174	.32203	3.10532	.34140	2.92910	.36101	2.77002	9
52	.30319	3.29829	.32235	3.10223	.34173	2.92632	.36134	2.76750	8
53	.30351	3.29483	.32267	3.09914	.34205	2.92354	.36167	2.76498	7
54	.30382	3.29139	.32299	3.09606	.34238	2.92076	.36199	2.76247	6
55	.30414	3.28795	.32331	3.09298	.34270	2.91799	.36232	2.75996	5
56	.30446	3.28452	.32363	3.08991	.34303	2.91523	.36265	2.75746	4
57	.30478	3.28109	.32396	3.08685	.34335	2.91246	.36298	2.75496	3
58	.30509	3.27767	.32428	3.08379	.34368	2.90971	.36331	2.75246	2
59	.30541	3.27426	.32460	3.08073	.34400	2.90696	.36364	2.74997	1
60	.30573	3.27085	.32492	3.07768	.34433	2.90421	.36397	2.74748	0
′	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	′
	73°		72°		71°		70°		

′	20°		21°		22°		23°		′
	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	
0	.36397	2.74748	.38386	2.60509	.40403	2.47509	.42447	2.35585	60
1	.36430	2.74499	.38420	2.60283	.40436	2.47302	.42482	2.35395	59
2	.36462	2.74251	.38453	2.60057	.40470	2.47095	.42516	2.35205	58
3	.36495	2.74004	.38487	2.59831	.40504	2.46888	.42551	2.35015	57
4	.36529	2.73756	.38520	2.59606	.40538	2.46682	.42585	2.34825	56
5	.36562	2.73509	.38553	2.59381	.40572	2.46476	.42619	2.34636	55
6	.36595	2.73263	.38587	2.59156	.40606	2.46270	.42654	2.34447	54
7	.36628	2.73017	.38620	2.58932	.40640	2.46065	.42688	2.34258	53
8	.36661	2.72771	.38654	2.58708	.40674	2.45860	.42722	2.34069	52
9	.36694	2.72526	.38687	2.58484	.40707	2.45655	.42757	2.33881	51
10	.36727	2.72281	.38721	2.58261	.40741	2.45451	.42791	2.33693	50
11	.36760	2.72036	.38754	2.58038	.40775	2.45246	.42826	2.33505	49
12	.36793	2.71792	.38787	2.57815	.40809	2.45043	.42860	2.33317	48
13	.36826	2.71548	.38821	2.57593	.40843	2.44839	.42894	2.33130	47
14	.36859	2.71305	.38854	2.57371	.40877	2.44636	.42929	2.32943	46
15	.36892	2.71063	.38888	2.57150	.40911	2.44433	.42963	2.32756	45
16	.36925	2.70819	.38921	2.56928	.40945	2.44230	.42998	2.32570	44
17	.36958	2.70577	.38955	2.56707	.40979	2.44027	.43032	2.32383	43
18	.36991	2.70335	.38988	2.56487	.41013	2.43825	.43067	2.32197	42
19	.37024	2.70094	.39022	2.56266	.41047	2.43623	.43101	2.32012	41
20	.37057	2.69853	.39055	2.56046	.41081	2.43422	.43136	2.31826	40
21	.37090	2.69612	.39089	2.55827	.41115	2.43220	.43170	2.31641	39
22	.37123	2.69371	.39122	2.55608	.41149	2.43019	.43205	2.31456	38
23	.37157	2.69131	.39156	2.55389	.41183	2.42819	.43239	2.31271	37
24	.37190	2.68892	.39190	2.55170	.41217	2.42618	.43274	2.31086	36
25	.37223	2.68653	.39223	2.54952	.41251	2.42418	.43308	2.30902	35
26	.37256	2.68414	.39257	2.54734	.41285	2.42218	.43343	2.30718	34
27	.37289	2.68175	.39290	2.54516	.41319	2.42019	.43378	2.30534	33
28	.37322	2.67937	.39324	2.54299	.41353	2.41819	.43412	2.30351	32
29	.37355	2.67700	.39357	2.54082	.41387	2.41620	.43447	2.30167	31
30	.37388	2.67462	.39391	2.53865	.41421	2.41421	.43481	2.29984	30
31	.37422	2.67225	.39425	2.53648	.41455	2.41223	.43516	2.29801	29
32	.37455	2.66989	.39458	2.53432	.41490	2.41025	.43550	2.29619	28
33	.37488	2.66752	.39492	2.53217	.41524	2.40827	.43585	2.29437	27
34	.37521	2.66516	.39526	2.53001	.41558	2.40629	.43620	2.29254	26
35	.37554	2.66281	.39559	2.52786	.41592	2.40432	.43654	2.29073	25
36	.37588	2.66046	.39593	2.52571	.41626	2.40235	.43689	2.28891	24
37	.37621	2.65811	.39626	2.52357	.41660	2.40038	.43724	2.28710	23
38	.37654	2.65576	.39660	2.52142	.41694	2.39841	.43758	2.28528	22
39	.37687	2.65342	.39694	2.51929	.41728	2.39645	.43793	2.28348	21
40	.37720	2.65109	.39727	2.51715	.41763	2.39449	.43828	2.28167	20
41	.37754	2.64875	.39761	2.51502	.41797	2.39253	.43862	2.27987	19
42	.37787	2.64642	.39795	2.51289	.41831	2.39058	.43897	2.27806	18
43	.37820	2.64410	.39829	2.51076	.41865	2.38863	.43932	2.27626	17
44	.37853	2.64177	.39862	2.50864	.41899	2.38668	.43966	2.27447	16
45	.37887	2.63945	.39896	2.50652	.41933	2.38473	.44001	2.27267	15
46	.37920	2.63714	.39930	2.50440	.41968	2.38279	.44036	2.27088	14
47	.37953	2.63483	.39963	2.50229	.42002	2.38084	.44071	2.26909	13
48	.37986	2.63252	.39997	2.50018	.42036	2.37891	.44105	2.26730	12
49	.38020	2.63021	.40031	2.49807	.42070	2.37697	.44140	2.26552	11
50	.38053	2.62791	.40065	2.49597	.42105	2.37504	.44175	2.26374	10
51	.38086	2.62561	.40098	2.49386	.42139	2.37311	.44210	2.26196	9
52	.38120	2.62332	.40132	2.49177	.42173	2.37118	.44244	2.26018	8
53	.38153	2.62103	.40166	2.48967	.42207	2.36925	.44279	2.25840	7
54	.38186	2.61874	.40200	2.48758	.42242	2.36733	.44314	2.25663	6
55	.38220	2.61646	.40234	2.48549	.42276	2.36541	.44349	2.25486	5
56	.38253	2.61418	.40267	2.48340	.42310	2.36349	.44384	2.25309	4
57	.38286	2.61190	.40301	2.48132	.42345	2.36158	.44418	2.25132	3
58	.38320	2.60963	.40335	2.47924	.42379	2.35967	.44453	2.24956	2
59	.38353	2.60736	.40369	2.47716	.42413	2.35776	.44488	2.24780	1
60	.38386	2.60509	.40403	2.47509	.42447	2.35585	.44523	2.24604	0
′	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	′
	69°		68°		67°		66°		

′	24°		25°		26°		27°		′
	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	
0	.44523	2.24604	.46631	2.14451	.48773	2.05030	.50953	1.96261	60
1	.44553	2.24428	.46666	2.14288	.48809	2.04879	.50989	1.96120	59
2	.44583	2.24252	.46702	2.14125	.48845	2.04728	.51026	1.95979	58
3	.44627	2.24077	.46737	2.13963	.48881	2.04577	.51063	1.95838	57
4	.44668	2.23902	.46772	2.13801	.48917	2.04426	.51099	1.95698	56
5	.44697	2.23727	.46808	2.13639	.48953	2.04276	.51136	1.95557	55
6	.44738	2.23553	.46843	2.13477	.48989	2.04125	.51173	1.95417	54
7	.44767	2.23378	.46879	2.13316	.49026	2.03975	.51209	1.95277	53
8	.44802	2.23204	.46914	2.13154	.49062	2.03825	.51246	1.95137	52
9	.44837	2.23030	.46950	2.12993	.49098	2.03675	.51283	1.94997	51
10	.44872	2.22857	.46985	2.12832	.49134	2.03526	.51319	1.94858	50
11	.44907	2.22683	.47021	2.12671	.49170	2.03376	.51356	1.94718	49
12	.44942	2.22510	.47056	2.12511	.49206	2.03227	.51393	1.94579	48
13	.44977	2.22337	.47092	2.12350	.49242	2.03078	.51430	1.94440	47
14	.45012	2.22164	.47128	2.12190	.49278	2.02929	.51467	1.94301	46
15	.45047	2.21992	.47163	2.12030	.49315	2.02780	.51503	1.94162	45
16	.45082	2.21819	.47199	2.11871	.49351	2.02631	.51540	1.94023	44
17	.45117	2.21647	.47234	2.11711	.49387	2.02483	.51577	1.93885	43
18	.45153	2.21475	.47270	2.11552	.49423	2.02335	.51614	1.93746	42
19	.45187	2.21304	.47305	2.11393	.49459	2.02187	.51651	1.93608	41
20	.45222	2.21132	.47341	2.11233	.49495	2.02039	.51688	1.93470	40
21	.45257	2.20961	.47377	2.11075	.49532	2.01891	.51724	1.93332	39
22	.45292	2.20790	.47412	2.10916	.49568	2.01743	.51761	1.93195	38
23	.45327	2.20619	.47448	2.10758	.49604	2.01595	.51798	1.93057	37
24	.45362	2.20449	.47483	2.10600	.49640	2.01449	.51835	1.92920	36
25	.45397	2.20278	.47519	2.10442	.49677	2.01302	.51872	1.92782	35
26	.45432	2.20108	.47555	2.10284	.49713	2.01155	.51909	1.92645	34
27	.45467	2.19938	.47590	2.10126	.49749	2.01008	.51946	1.92508	33
28	.45502	2.19769	.47626	2.09969	.49786	2.00862	.51983	1.92371	32
29	.45538	2.19599	.47662	2.09811	.49822	2.00715	.52020	1.92235	31
30	.45573	2.19430	.47698	2.09654	.49858	2.00569	.52057	1.92098	30
31	.45608	2.19261	.47733	2.09498	.49894	2.00423	.52094	1.91962	29
32	.45643	2.19092	.47769	2.09341	.49931	2.00277	.52131	1.91826	28
33	.45678	2.18923	.47805	2.09184	.49967	2.00131	.52168	1.91690	27
34	.45713	2.18755	.47840	2.09028	.50004	1.99986	.52205	1.91554	26
35	.45748	2.18587	.47876	2.08872	.50040	1.99841	.52242	1.91418	25
36	.45784	2.18419	.47912	2.08716	.50076	1.99695	.52279	1.91282	24
37	.45819	2.18251	.47948	2.08560	.50113	1.99550	.52316	1.91147	23
38	.45854	2.18084	.47981	2.08405	.50149	1.99406	.52353	1.91012	22
39	.45889	2.17916	.48019	2.08250	.50185	1.99261	.52390	1.90876	21
40	.45924	2.17749	.48055	2.08094	.50222	1.99116	.52427	1.90741	20
41	.45960	2.17582	.48091	2.07939	.50258	1.98972	.52464	1.90607	19
42	.45995	2.17416	.48127	2.07785	.50295	1.98828	.52501	1.90472	18
43	.46030	2.17249	.48163	2.07630	.50331	1.98684	.52538	1.90337	17
44	.46065	2.17083	.48198	2.07476	.50368	1.98540	.52575	1.90203	16
45	.46101	2.16917	.48234	2.07321	.50404	1.98396	.52613	1.90069	15
46	.46136	2.16751	.48270	2.07167	.50441	1.98253	.52650	1.89935	14
47	.46171	2.16585	.48306	2.07014	.50477	1.98110	.52687	1.89801	13
48	.46206	2.16420	.48342	2.06860	.50514	1.97966	.52724	1.89667	12
49	.46242	2.16255	.48378	2.06706	.50550	1.97823	.52761	1.89533	11
50	.46277	2.16090	.48414	2.06553	.50587	1.97681	.52798	1.89400	10
51	.46312	2.15925	.48450	2.06400	.50623	1.97538	.52836	1.89266	9
52	.46348	2.15760	.48486	2.06247	.50660	1.97395	.52873	1.89133	8
53	.46383	2.15596	.48521	2.06094	.50696	1.97253	.52910	1.89000	7
54	.46418	2.15432	.48557	2.05942	.50733	1.97111	.52947	1.88867	6
55	.46454	2.15268	.48593	2.05790	.50769	1.96969	.52985	1.88734	5
56	.46489	2.15104	.48629	2.05637	.50806	1.96827	.53022	1.88602	4
57	.46525	2.14940	.48665	2.05485	.50843	1.96685	.53059	1.88469	3
58	.46560	2.14777	.48701	2.05333	.50879	1.96544	.53096	1.88337	2
59	.46595	2.14614	.48737	2.05182	.50916	1.96402	.53134	1.88205	1
60	.46631	2.14451	.48773	2.05030	.50953	1.96261	.53171	1.88073	0
′	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	′
	65°		64°		63°		62°		

′	28°		29°		30°		31°		′
	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	
0	.53171	1.88073	.55431	1.80405	.57735	1.73205	.60086	1.66428	60
1	.53208	1.87941	.55469	1.80281	.57774	1.73069	.60126	1.66318	59
2	.53246	1.87809	.55507	1.80158	.57813	1.72973	.60165	1.66209	58
3	.53283	1.87677	.55545	1.80034	.57851	1.72857	.60205	1.66099	57
4	.53320	1.87546	.55583	1.79911	.57890	1.72741	.60245	1.65990	56
5	.53358	1.87415	.55621	1.79788	.57929	1.72625	.60284	1.65881	55
6	.53395	1.87283	.55659	1.79665	.57968	1.72509	.60324	1.65772	54
7	.53432	1.87152	.55697	1.79542	.58007	1.72393	.60364	1.65663	53
8	.53470	1.87021	.55736	1.79419	.58046	1.72278	.60403	1.65554	52
9	.53507	1.86891	.55774	1.79296	.58085	1.72163	.60443	1.65445	51
10	.53545	1.86760	.55812	1.79174	.58124	1.72047	.60483	1.65337	50
11	.53582	1.86630	.55850	1.79051	.58162	1.71932	.60522	1.65228	49
12	.53620	1.86499	.55888	1.78929	.58201	1.71817	.60562	1.65120	48
13	.53657	1.86369	.55926	1.78807	.58240	1.71702	.60602	1.65011	47
14	.53694	1.86239	.55964	1.78685	.58279	1.71588	.60642	1.64903	46
15	.53732	1.86109	.56003	1.78563	.58318	1.71473	.60681	1.64795	45
16	.53769	1.85979	.56041	1.78441	.58357	1.71358	.60721	1.64687	44
17	.53807	1.85850	.56079	1.78319	.58396	1.71244	.60761	1.64579	43
18	.53844	1.85720	.56117	1.78198	.58435	1.71129	.60801	1.64471	42
19	.53882	1.85591	.56156	1.78077	.58474	1.71015	.60841	1.64363	41
20	.53920	1.85462	.56194	1.77955	.58513	1.70901	.60881	1.64256	40
21	.53957	1.85333	.56232	1.77834	.58552	1.70787	.60921	1.64148	39
22	.53995	1.85204	.56270	1.77713	.58591	1.70673	.60960	1.64041	38
23	.54032	1.85075	.56309	1.77592	.58631	1.70560	.61000	1.63934	37
24	.54070	1.84946	.56347	1.77471	.58670	1.70446	.61040	1.63826	36
25	.54107	1.84818	.56385	1.77351	.58709	1.70332	.61080	1.63719	35
26	.54145	1.84689	.56424	1.77230	.58748	1.70219	.61120	1.63612	34
27	.54183	1.84561	.56462	1.77110	.58787	1.70105	.61160	1.63505	33
28	.54220	1.84433	.56501	1.76990	.58826	1.69992	.61200	1.63398	32
29	.54258	1.84305	.56539	1.76869	.58865	1.69879	.61240	1.63292	31
30	.54296	1.84177	.56577	1.76749	.58905	1.69766	.61280	1.63185	30
31	.54333	1.84049	.56616	1.76629	.58944	1.69653	.61320	1.63079	29
32	.54371	1.83922	.56654	1.76510	.58983	1.69541	.61360	1.62972	28
33	.54409	1.83794	.56693	1.76390	.59022	1.69428	.61400	1.62866	27
34	.54446	1.83667	.56731	1.76271	.59061	1.69316	.61440	1.62760	26
35	.54484	1.83540	.56769	1.76151	.59101	1.69203	.61480	1.62654	25
36	.54522	1.83413	.56808	1.76032	.59140	1.69091	.61520	1.62548	24
37	.54560	1.83286	.56846	1.75913	.59179	1.68979	.61561	1.62442	23
38	.54597	1.83159	.56885	1.75794	.59218	1.68866	.61601	1.62336	22
39	.54635	1.83033	.56923	1.75675	.59258	1.68754	.61641	1.62230	21
40	.54673	1.82906	.56962	1.75556	.59297	1.68643	.61681	1.62125	20
41	.54711	1.82780	.57000	1.75437	.59336	1.68531	.61721	1.62019	19
42	.54748	1.82654	.57039	1.75319	.59376	1.68419	.61761	1.61914	18
43	.54786	1.82528	.57078	1.75200	.59415	1.68308	.61801	1.61808	17
44	.54824	1.82402	.57116	1.75082	.59454	1.68196	.61842	1.61703	16
45	.54862	1.82276	.57155	1.74964	.59494	1.68085	.61882	1.61598	15
46	.54900	1.82150	.57193	1.74846	.59533	1.67974	.61922	1.61493	14
47	.54938	1.82025	.57232	1.74728	.59573	1.67863	.61962	1.61388	13
48	.54975	1.81899	.57271	1.74610	.59612	1.67752	.62003	1.61283	12
49	.55013	1.81774	.57309	1.74492	.59651	1.67641	.62043	1.61179	11
50	.55051	1.81649	.57348	1.74375	.59691	1.67530	.62083	1.61074	10
51	.55089	1.81524	.57386	1.74257	.59730	1.67419	.62124	1.60970	9
52	.55127	1.81399	.57425	1.74140	.59770	1.67309	.62164	1.60865	8
53	.55165	1.81274	.57464	1.74022	.59809	1.67198	.62204	1.60761	7
54	.55203	1.81150	.57503	1.73905	.59849	1.67088	.62245	1.60657	6
55	.55241	1.81025	.57541	1.73788	.59888	1.66978	.62285	1.60553	5
56	.55279	1.80901	.57580	1.73671	.59928	1.66867	.62325	1.60449	4
57	.55317	1.80777	.57619	1.73555	.59967	1.66757	.62366	1.60345	3
58	.55355	1.80653	.57657	1.73438	.60007	1.66647	.62406	1.60241	2
59	.55393	1.80529	.57696	1.73321	.60046	1.66538	.62446	1.60137	1
60	.55431	1.80405	.57735	1.73205	.60086	1.66428	.62487	1.60033	0
	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	
′	61°		60°		59°		58°		

′	32° Tang	32° Cotang	33° Tang	33° Cotang	34° Tang	34° Cotang	35° Tang	35° Cotang	′
0	.62487	1.60033	.64941	1.53986	.67451	1.48256	.70021	1.42815	60
1	.62527	1.59930	.64982	1.53888	.67493	1.48163	.70064	1.42726	59
2	.62568	1.59826	.65024	1.53791	.67536	1.48070	.70107	1.42638	58
3	.62608	1.59723	.65065	1.53693	.67578	1.47977	.70151	1.42550	57
4	.62649	1.59620	.65106	1.53595	.67620	1.47885	.70194	1.42462	56
5	.62689	1.59517	.65148	1.53497	.67663	1.47792	.70238	1.42374	55
6	.62730	1.59414	.65189	1.53400	.67705	1.47699	.70281	1.42286	54
7	.62770	1.59311	.65231	1.53302	.67748	1.47607	.70325	1.42198	53
8	.62811	1.59208	.65272	1.53205	.67790	1.47514	.70368	1.42110	52
9	.62852	1.59105	.65314	1.53107	.67832	1.47422	.70412	1.42022	51
10	.62892	1.59002	.65355	1.53010	.67875	1.47330	.70455	1.41934	50
11	.62933	1.58900	.65397	1.52913	.67917	1.47238	.70499	1.41847	49
12	.62973	1.58797	.65438	1.52816	.67960	1.47146	.70542	1.41759	48
13	.63014	1.58695	.65480	1.52719	.68002	1.47053	.70586	1.41672	47
14	.63055	1.58593	.65521	1.52622	.68045	1.46962	.70629	1.41584	46
15	.63095	1.58490	.65563	1.52525	.68088	1.46870	.70673	1.41497	45
16	.63136	1.58388	.65604	1.52429	.68130	1.46778	.70717	1.41409	44
17	.63177	1.58286	.65646	1.52332	.68173	1.46686	.70760	1.41322	43
18	.63217	1.58184	.65688	1.52235	.68215	1.46595	.70804	1.41235	42
19	.63258	1.58083	.65729	1.52139	.68258	1.46503	.70848	1.41148	41
20	.63299	1.57981	.65771	1.52043	.68301	1.46411	.70891	1.41061	40
21	.63340	1.57879	.65813	1.51946	.68343	1.46320	.70935	1.40974	39
22	.63380	1.57778	.65854	1.51850	.68386	1.46229	.70979	1.40887	38
23	.63421	1.57676	.65896	1.51754	.68429	1.46137	.71023	1.40800	37
24	.63462	1.57575	.65938	1.51658	.68471	1.46046	.71066	1.40714	36
25	.63503	1.57474	.65980	1.51562	.68514	1.45955	.71110	1.40627	35
26	.63544	1.57372	.66021	1.51466	.68557	1.45864	.71154	1.40540	34
27	.63584	1.57271	.66063	1.51370	.68600	1.45773	.71198	1.40454	33
28	.63625	1.57170	.66105	1.51275	.68642	1.45682	.71242	1.40367	32
29	.63666	1.57069	.66147	1.51179	.68685	1.45592	.71285	1.40281	31
30	.63707	1.56969	.66189	1.51084	.68728	1.45501	.71329	1.40195	30
31	.63748	1.56868	.66230	1.50988	.68771	1.45410	.71373	1.40109	29
32	.63789	1.56767	.66272	1.50893	.68814	1.45320	.71417	1.40022	28
33	.63830	1.56667	.66314	1.50797	.68857	1.45229	.71461	1.39936	27
34	.63871	1.56566	.66356	1.50702	.68900	1.45139	.71505	1.39850	26
35	.63912	1.56466	.66398	1.50607	.68942	1.45049	.71549	1.39764	25
36	.63953	1.56366	.66440	1.50512	.68985	1.44958	.71593	1.39679	24
37	.63994	1.56265	.66482	1.50417	.69028	1.44868	.71637	1.39593	23
38	.64035	1.56165	.66524	1.50322	.69071	1.44778	.71681	1.39507	22
39	.64076	1.56065	.66566	1.50228	.69114	1.44688	.71725	1.39421	21
40	.64117	1.55966	.66608	1.50133	.69157	1.44598	.71769	1.39336	20
41	.64158	1.55866	.66650	1.50038	.69200	1.44508	.71813	1.39250	19
42	.64199	1.55766	.66692	1.49944	.69243	1.44418	.71857	1.39165	18
43	.64240	1.55666	.66734	1.49849	.69286	1.44329	.71901	1.39079	17
44	.64281	1.55567	.66776	1.49755	.69329	1.44239	.71946	1.38994	16
45	.64322	1.55467	.66818	1.49661	.69372	1.44149	.71990	1.38909	15
46	.64363	1.55368	.66860	1.49566	.69416	1.44060	.72034	1.38824	14
47	.64404	1.55269	.66902	1.49472	.69459	1.43970	.72078	1.38738	13
48	.64446	1.55170	.66944	1.49378	.69502	1.43881	.72122	1.38653	12
49	.64487	1.55071	.66986	1.49284	.69545	1.43792	.72167	1.38568	11
50	.64528	1.54972	.67028	1.49190	.69588	1.43703	.72211	1.38484	10
51	.64569	1.54873	.67071	1.49097	.69631	1.43614	.72255	1.38399	9
52	.64610	1.54774	.67113	1.49003	.69675	1.43525	.72299	1.38314	8
53	.64652	1.54675	.67155	1.48909	.69718	1.43436	.72344	1.38229	7
54	.64693	1.54576	.67197	1.48816	.69761	1.43347	.72388	1.38145	6
55	.64734	1.54478	.67239	1.48722	.69804	1.43258	.72432	1.38060	5
56	.64775	1.54379	.67282	1.48629	.69847	1.43169	.72477	1.37976	4
57	.64817	1.54281	.67324	1.48536	.69891	1.43080	.72521	1.37891	3
58	.64858	1.54183	.67366	1.48442	.69934	1.42992	.72565	1.37807	2
59	.64899	1.54085	.67409	1.48349	.69977	1.42903	.72610	1.37722	1
60	.64941	1.53986	.67451	1.48256	.70021	1.42815	.72654	1.37638	0
′	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	′
	57°		56°		55°		54°		

′	36°		37°		38°		39°		′
	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	
0	.72654	1.37638	.75355	1.32704	.78129	1.27994	.80978	1.23490	60
1	.72699	1.37554	.75401	1.32624	.78175	1.27917	.81027	1.23416	59
2	.72743	1.37470	.75447	1.32544	.78222	1.27841	.81075	1.23343	58
3	.72788	1.37386	.75492	1.32464	.78269	1.27764	.81123	1.23270	57
4	.72832	1.37302	.75538	1.32384	.78316	1.27688	.81171	1.23196	56
5	.72877	1.37218	.75581	1.32304	.78363	1.27611	.81220	1.23123	55
6	.72921	1.37134	.75622	1.32224	.78410	1.27535	.81268	1.23050	54
7	.72966	1.37050	.75675	1.32144	.78457	1.27458	.81316	1.22977	53
8	.73010	1.36967	.75721	1.32064	.78504	1.27382	.81364	1.22904	52
9	.73055	1.36883	.75767	1.31984	.78551	1.27306	.81413	1.22831	51
10	.73100	1.36800	.75812	1.31904	.78598	1.27230	.81461	1.22758	50
11	.73144	1.36716	.75858	1.31825	.78645	1.27153	.81510	1.22685	49
12	.73189	1.36633	.75904	1.31745	.78692	1.27077	.81558	1.22612	48
13	.73234	1.36549	.75950	1.31666	.78739	1.27001	.81606	1.22539	47
14	.73278	1.36466	.75996	1.31586	.78786	1.26925	.81655	1.22467	46
15	.73323	1.36383	.76042	1.31507	.78834	1.26849	.81703	1.22394	45
16	.73368	1.36300	.76088	1.31427	.78881	1.26774	.81752	1.22321	44
17	.73413	1.36217	.76134	1.31348	.78928	1.26698	.81800	1.22249	43
18	.73457	1.36134	.76180	1.31269	.78975	1.26622	.81849	1.22176	42
19	.73502	1.36051	.76226	1.31190	.79022	1.26549	.81898	1.22104	41
20	.73547	1.35968	.76272	1.31110	.79070	1.26471	.81946	1.22031	40
21	.73592	1.35885	.76318	1.31031	.79117	1.26395	.81995	1.21959	39
22	.73637	1.35802	.76364	1.30952	.79164	1.26319	.82044	1.21886	38
23	.73681	1.35719	.76410	1.30873	.79212	1.26244	.82092	1.21814	37
24	.73726	1.35637	.76456	1.30795	.79259	1.26169	.82141	1.21742	36
25	.73771	1.35554	.76502	1.30716	.79306	1.26093	.82190	1.21670	35
26	.73816	1.35472	.76548	1.30637	.79354	1.26018	.82238	1.21598	34
27	.73861	1.35389	.76594	1.30558	.79401	1.25943	.82287	1.21526	33
28	.73906	1.35307	.76640	1.30480	.79449	1.25867	.82336	1.21454	32
29	.73951	1.35224	.76686	1.30401	.79496	1.25792	.82385	1.21382	31
30	.73996	1.35142	.76733	1.30323	.79544	1.25717	.82434	1.21310	30
31	.74041	1.35060	.76779	1.30244	.79591	1.25642	.82483	1.21238	29
32	.74086	1.34978	.76825	1.30166	.79639	1.25567	.82531	1.21166	28
33	.74131	1.34896	.76871	1.30087	.79686	1.25492	.82580	1.21094	27
34	.74176	1.34814	.76918	1.30009	.79734	1.25417	.82629	1.21023	26
35	.74221	1.34732	.76964	1.29931	.79781	1.25343	.82678	1.20951	25
36	.74267	1.34650	.77010	1.29853	.79829	1.25268	.82727	1.20879	24
37	.74312	1.34568	.77057	1.29775	.79877	1.25193	.82776	1.20808	23
38	.74357	1.34487	.77103	1.29696	.79924	1.25118	.82825	1.20736	22
39	.74402	1.34405	.77149	1.29618	.79972	1.25044	.82874	1.20665	21
40	.74447	1.34323	.77196	1.29541	.80020	1.24969	.82923	1.20593	20
41	.74492	1.34242	.77242	1.29463	.80067	1.24895	.82972	1.20522	19
42	.74538	1.34160	.77289	1.29385	.80115	1.24820	.83022	1.20451	18
43	.74583	1.34079	.77335	1.29307	.80163	1.24746	.83071	1.20379	17
44	.74628	1.33998	.77382	1.29229	.80211	1.24672	.83120	1.20308	16
45	.74674	1.33916	.77428	1.29152	.80258	1.24597	.83169	1.20237	15
46	.74719	1.33835	.77475	1.29074	.80306	1.24523	.83218	1.20166	14
47	.74764	1.33754	.77521	1.28997	.80354	1.24449	.83268	1.20095	13
48	.74810	1.33673	.77568	1.28919	.80402	1.24375	.83317	1.20024	12
49	.74855	1.33592	.77615	1.28842	.80450	1.24301	.83366	1.19953	11
50	.74900	1.33511	.77661	1.28764	.80498	1.24227	.83415	1.19882	10
51	.74946	1.33430	.77708	1.28687	.80546	1.24153	.83465	1.19811	9
52	.74991	1.33349	.77754	1.28610	.80594	1.24079	.83514	1.19740	8
53	.75037	1.33268	.77801	1.28533	.80642	1.24005	.83564	1.19669	7
54	.75082	1.33187	.77848	1.28456	.80690	1.23931	.83613	1.19599	6
55	.75128	1.33107	.77895	1.28379	.80738	1.23858	.83663	1.19528	5
56	.75173	1.33026	.77941	1.28302	.80786	1.23784	.83712	1.19457	4
57	.75219	1.32946	.77988	1.28225	.80834	1.23710	.83761	1.19387	3
58	.75264	1.32865	.78035	1.28148	.80882	1.23637	.83811	1.19316	2
59	.75310	1.32785	.78082	1.28071	.80930	1.23563	.83860	1.19246	1
60	.75355	1.32704	.78129	1.27994	.80978	1.23490	.83910	1.19175	0
′	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	′
	53°		52°		51°		50°		

′	40°		41°		42°		43°		′
	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	
0	.83910	1.19175	.86929	1.15037	.90040	1.11061	.93252	1.07237	60
1	.83960	1.19105	.86980	1.14969	.90093	1.10996	.93306	1.07174	59
2	.84009	1.19035	.87031	1.14902	.90146	1.10931	.93360	1.07112	58
3	.84059	1.18964	.87082	1.14834	.90199	1.10867	.93415	1.07049	57
4	.84108	1.18894	.87133	1.14767	.90251	1.10802	.93469	1.06987	56
5	.84158	1.18824	.87184	1.14699	.90304	1.10737	.93524	1.06925	55
6	.84208	1.18754	.87236	1.14632	.90357	1.10672	.93578	1.06862	54
7	.84258	1.18684	.87287	1.14565	.90410	1.10607	.93633	1.06800	53
8	.84307	1.18614	.87338	1.14498	.90463	1.10543	.93688	1.06738	52
9	.84357	1.18544	.87389	1.14430	.90516	1.10478	.93742	1.06676	51
10	.84407	1.18474	.87441	1.14363	.90569	1.10414	.93797	1.06613	50
11	.84457	1.18404	.87492	1.14296	.90621	1.10349	.93852	1.06551	49
12	.84507	1.18334	.87543	1.14229	.90674	1.10285	.93906	1.06489	48
13	.84556	1.18264	.87595	1.14162	.90727	1.10220	.93961	1.06427	47
14	.84606	1.18194	.87646	1.14095	.90781	1.10156	.94016	1.06365	46
15	.84656	1.18125	.87698	1.14028	.90834	1.10091	.94071	1.06303	45
16	.84705	1.18055	.87749	1.13961	.90887	1.10027	.94125	1.06241	44
17	.84756	1.17986	.87801	1.13894	.90940	1.09963	.94180	1.06179	43
18	.84806	1.17916	.87852	1.13828	.90993	1.09899	.94235	1.06117	42
19	.84856	1.17846	.87904	1.13761	.91046	1.09834	.94290	1.06056	41
20	.84906	1.17777	.87955	1.13694	.91099	1.09770	.94345	1.05994	40
21	.84956	1.17708	.88007	1.13627	.91153	1.09706	.94400	1.05932	39
22	.85006	1.17638	.88059	1.13561	.91206	1.09642	.94455	1.05870	38
23	.85057	1.17569	.88110	1.13494	.91259	1.09578	.94510	1.05809	37
24	.85107	1.17500	.88162	1.13428	.91313	1.09514	.94565	1.05747	36
25	.85157	1.17430	.88214	1.13361	.91366	1.09450	.94620	1.05685	35
26	.85207	1.17361	.88265	1.13295	.91419	1.09386	.94676	1.05624	34
27	.85257	1.17292	.88317	1.13228	.91473	1.09322	.94731	1.05562	33
28	.85308	1.17223	.88369	1.13162	.91526	1.09258	.94786	1.05501	32
29	.85358	1.17154	.88421	1.13096	.91580	1.09195	.94841	1.05439	31
30	.85408	1.17085	.88473	1.13029	.91633	1.09131	.94896	1.05378	30
31	.85458	1.17016	.88524	1.12963	.91687	1.09067	.94952	1.05317	29
32	.85509	1.16947	.88576	1.12897	.91740	1.09003	.95007	1.05255	28
33	.85559	1.16878	.88628	1.12831	.91794	1.08940	.95062	1.05194	27
34	.85609	1.16809	.88680	1.12765	.91847	1.08876	.95118	1.05133	26
35	.85660	1.16741	.88732	1.12699	.91901	1.08813	.95173	1.05072	25
36	.85710	1.16672	.88784	1.12633	.91955	1.08749	.95229	1.05010	24
37	.85761	1.16603	.88836	1.12567	.92008	1.08686	.95284	1.04949	23
38	.85811	1.16535	.88888	1.12501	.92062	1.08622	.95340	1.04888	22
39	.85862	1.16466	.88940	1.12435	.92116	1.08559	.95395	1.04827	21
40	.85912	1.16398	.88992	1.12369	.92170	1.08496	.95451	1.04766	20
41	.85963	1.16329	.89045	1.12303	.92224	1.08432	.95506	1.04705	19
42	.86014	1.16261	.89097	1.12238	.92277	1.08369	.95562	1.04644	18
43	.86064	1.16192	.89149	1.12172	.92331	1.08306	.95618	1.04583	17
44	.86115	1.16124	.89201	1.12106	.92385	1.08243	.95673	1.04522	16
45	.86166	1.16055	.89253	1.12041	.92439	1.08179	.95729	1.04461	15
46	.86216	1.15987	.89306	1.11975	.92493	1.08116	.95785	1.04401	14
47	.86267	1.15919	.89358	1.11909	.92547	1.08053	.95841	1.04340	13
48	.86318	1.15851	.89410	1.11844	.92601	1.07990	.95897	1.04279	12
49	.86368	1.15783	.89463	1.11778	.92655	1.07927	.95952	1.04218	11
50	.86419	1.15715	.89515	1.11713	.92709	1.07864	.96008	1.04158	10
51	.86470	1.15647	.89567	1.11648	.92763	1.07801	.96064	1.04097	9
52	.86521	1.15579	.89620	1.11582	.92817	1.07738	.96120	1.04036	8
53	.86572	1.15511	.89672	1.11517	.92872	1.07676	.96176	1.03976	7
54	.86623	1.15443	.89725	1.11452	.92926	1.07613	.96232	1.03915	6
55	.86674	1.15375	.89777	1.11387	.92980	1.07550	.96288	1.03855	5
56	.86725	1.15308	.89830	1.11321	.93034	1.07487	.96344	1.03794	4
57	.86776	1.15240	.89883	1.11256	.93088	1.07425	.96400	1.03734	3
58	.86827	1.15172	.89935	1.11191	.93143	1.07362	.96457	1.03674	2
59	.86878	1.15104	.89988	1.11126	.93197	1.07299	.96513	1.03613	1
60	.86929	1.15037	.90040	1.11061	.93252	1.07237	.96569	1.03553	0
′	Cotang	Tang	Cotang	Tang	Cotang	Tang	Cotang	Tang	′
	49°		48°		47°		46°		

′	44° Tang	44° Cotang	′	′	44° Tang	44° Cotang	′	′	44° Tang	44° Cotang	′
0	.96569	1.03553	60	20	.97700	1.02355	40	40	.98843	1.01170	20
1	.96625	1.03493	59	21	.97756	1.02295	39	41	.98901	1.01112	19
2	.96681	1.03433	58	22	.97813	1.02236	38	42	.98958	1.01053	18
3	.96738	1.03372	57	23	.97870	1.02176	37	43	.99016	1.00994	17
4	.96794	1.03312	56	24	.97927	1.02117	36	44	.99073	1.00935	16
5	.96850	1.03252	55	25	.97984	1.02057	35	45	.99131	1.00876	15
6	.96907	1.03192	54	26	.98041	1.01998	34	46	.99189	1.00818	14
7	.96963	1.03132	53	27	.98098	1.01939	33	47	.99247	1.00759	13
8	.97020	1.03072	52	28	.98155	1.01879	32	48	.99304	1.00701	12
9	.97076	1.03012	51	29	.98213	1.01820	31	49	.99362	1.00642	11
10	.97133	1.02952	50	30	.98270	1.01761	30	50	.99420	1.00583	10
11	.97189	1.02892	49	31	.98327	1.01702	29	51	.99478	1.00525	9
12	.97246	1.02832	48	32	.98384	1.01642	28	52	.99536	1.00467	8
13	.97302	1.02772	47	33	.98441	1.01583	27	53	.99594	1.00408	7
14	.97359	1.02713	46	34	.98499	1.01524	26	54	.99652	1.00350	6
15	.97416	1.02653	45	35	.98556	1.01465	25	55	.99710	1.00291	5
16	.97472	1.02593	44	36	.98613	1.01406	24	56	.99768	1.00233	4
17	.97529	1.02533	43	37	.98671	1.01347	23	57	.99826	1.00175	3
18	.97586	1.02474	42	38	.98728	1.01288	22	58	.99884	1.00116	2
19	.97643	1.02414	41	39	.98786	1.01229	21	59	.99942	1.00058	1
20	.97700	1.02355	40	40	.98843	1.01170	20	60	1.00000	1.00000	0
′	Cotang	Tang	′	′	Cotang	Tang	′	′	Cotang	Tang	′
	45°				45°				45°		

英漢術語對照表

A

Aberration of sphericity, 曲差
Abridged division, 縮除法
Abridged multiplication, 縮乘法
Abscissa, 橫線
Accessories, 附屬品
Accidental error, 偶差
Accuracy, 精度
Accurate measurement, 精測法
Achromatic lens 般色透鏡
Acre, 英畝
Addition constant, 加常數
Adjusting pin, 訂正針
Adjusting screw, 訂正螺絲
Adjustment, 訂正
Agonic line, 無偏線
A-level, A 形準器
Alidade, 照準規
Alignment, 定向
Allowable error, 許容誤差
Altitude screw, 縱螺絲
Amplifying lens, 擴大透鏡
Amsler, 安姆斯勒
Analytical solution, 解析的解法
Angle method, 角度法
Angle mirror, 角鏡
Angle of deflection, 偏角
Angular distance, 角距
Annual variation, 年差
Aperture, 孔徑
Architect's level, 建築水準儀
Arm, 臂
Area, 面積
Assumed meridian, 假定子午線
Astronomical transit, 天文經緯儀
Auxiliary line, 補助線
Averaging end areas, 兩端面平均法
Axeman and flagman, 斧旗手
Axis, 軸
Axis of figure, 相軸
Azimuth, 方位角, 全圓方位
Azimuth method, 全圓方位法
Azimuth screw, 橫螺絲

B

Back azimuth, 後方位 (全圓)
Back bearing, 後方位 (象限)
Back sight, 後望
Balancing a survey, 測量之調整
Ball and socket joint, 球窩連結
Ball spindle, 球軸
Bar magnet, 棒磁石
Barometric leveling, 氣壓準測
Batter board, 標板
Bearing, 象限方位或方位
Bearing method, 象限方位法
Bench, 平準標
Bench mark, 平準標
Bessel's method, 栢塞爾法
Binocular hand level, 雙眼手準器
Block level, 塊準器
Blue printing, 藍圖工
Boston rod, 波頓桿桿
Box sextant, 筒中六分儀
Box staff, 盒尺
Brass head, 黃銅頭
Bubble reading, 氣泡指度
Bubble tube, 泡管
Builder's transit, 建築經緯儀
Burnt sienna, 代赭
Burnt umber, 焦茶

C

Calipers, 測徑器
Capstan headed screw, 鼓盤頭螺絲
Cautionary curve, 注意曲線
Celestial sphere, 天球

Center beam, 心桿
Center peg, 中心樁
Chain, 鏈, 測鏈
Chaining, 鏈測
Chain line, 鏈線
Chain-man, 測鏈者
Chain surveying, 測鏈測量術
Change point, 轉換點
Check, 核對
Check level, 檢驗準測
Chromatic aberration, 色差
Circular level, 球準器
City surveying, 市街測量術
Clamp screw, 止動螺絲
Clinometer, 斜準器
Clip, 箝器
Closed curve, 閉曲線
Closed traverse, 閉折線
Closing line, 閉線
Closing the horizon, 地平之閉合
Column method, 縱標式
Compass, 羅盤儀
Compass box, 羅盤盒
Compass circle, 羅盤圈
Compass plate, 羅盤板
Compass surveying, 羅盤儀測量術
Compass vernier, 羅盤儀遊標
Compensating error, 殺差
Compensating planimeter, 補正面積計
Compound lens, 複合透鏡
Computation, 計算
Concavo-convex lens, 凹凸透鏡
Conjugate foci, 共軛焦點
Constant error, 定差
Contour, 等高線
Contour line, 等高線
Converging lens, 收斂透鏡
Copying glass, 謄圖玻璃
Copying instrument, 謄圖器械
Copying point, 謄點
Correction, 更正
Correction due to cuevature, 曲率更正
Correlate, 不定常數
Crimson lake, 深紅
Cross hairs, 十字線
Cross sectional leveling, 橫斷面準測
Cross staff, 十字桿
Crown glass, 冕玻璃
Cugnot's joint, 雙枕連結
Cumulative error, 累差
Cursor, 滑標
Curvature, 曲率

D

Damping, 温結法
Dancing of air, 空氣之顫躍
Datum, 平準基面
Datum plane, 平準基面
Declination (of needle), (磁針之) 偏差
Declinator, 偏角器
Definition, 明晰度
Deflection angle, 偏角
Deflection angle method, 偏角法
Departure, 經距
Deviation of plumb line, 垂線之偏向
Diagonal offseting, 斜枝法
Diagonal prism, 斜棱鏡
Diagram, 表圖
Dial, 日規
Differential leveling, 高低準測
Direct leveling, 直接準測
Direct method, 直接法
Direct vernier, 順遊標
Directrix, 準線
Discrepancy, 差異
Diurnal variation, 日差
Diverging lens, 發大透鏡
Double compass circle, 二重羅盤圈
Double convex lens, 兩凸透鏡
Double meridian distance, 倍子午線距離
Double vernier, 複遊標
Drawing, 製圖
Drop arrow, 落針或落下測針
Dumpy level, 短壓水準儀
Dust guard, 護塵蓋

E

Earth surface, 地面
Earthwork, 土工

Eastern elongation, 東離隔
Eccentricity, 偏心, 偏心距離
Eidograph, 等動轉圖器
Elevation, 高度
Emerald green, 碧綠
Engineer's chain, 工程鎖
Engineer's level, 工程水準儀
Engineer's transit, 工程經緯儀
Equivalent mean depth, 等均高
Erasing, 擦拭工
Erecting eye-piece, 正像對眼鏡
Erecting piece, 正像鏡
Error, 誤差
Error of closure, 閉差
Expansion tripod, 伸縮三脚架
Explanatory note, 說明
Eye lens, 接眼透鏡
Eye piece, 對眼鏡

F

False station, 假測點
Field lens, 視野透鏡
Field note, 野簿
Field of view, 視野
Field work, 外業
Final reading, 終指數
Finishing the map, 地圖之完成
Finite and continuous function, 有限連續函數
Flint glass, 鉛玻璃
Flying level, 簡捷準測
Focal distance, 焦點距離
Focussing, 焦點調和
Folded vernier, 重疊遊標
Follower, 後鎖者
Foot plate, 脚板
Foot screw, 整準螺絲
Fore chainman, 前鎖者
Fore sight, 前望
Formation level, 路工基面
Forward azimuth, 前方位(全圓)
Forward bearing, 前方位(象限)
Fucus green, 黃綠

G

Gamboge, 藤黃
Generatrix, 母線
Geodesy, 大地測量術或測地術
Geodetic surveying, ,,
Give-and-take line, 取捨線
Gothic type, 哥式式
Grade, 坡度
Grade line, 坡度線
Grade rod, 坡度桿高
Grade stake, 坡度樁
Gradienter screw, 測斜螺絲
Grading, 坪地
Graduation, 刻度
Graphical solution, 圖解的解法
Grund line, (投影圖之) 基線
Guard stake, 保護樁
Gunter's chain, 剛德鎖

H

Hairs reading, 絲指數
Hand level, 手準器
Head (of tripod), (三脚架之) 架頭
Horizon, 地平面
Horizon glass, 水平鏡
Horizontal axis, 橫軸
Horizontal circle, 橫圈
Horizontal line, 地平線
Horizontal plane, 地平面
Huygen's negative eye piece, 海根斯虛像對眼鏡
Hydrographical surveying, 河海測量術

I

Illumination, 光度
Image, 像
Indeterminate constant, 不定常數
Index arm, 指臂
Index error, 指差
Index glass, 指鏡
Indigo, 紺藍
Indirect leveling, 間接準測

Indirect method, 間接法
Initial reading, 始指數
Inking, 上墨工
Inspection, 檢查
Instrument height, 器高
Instrument height system, 器高式
Instrument error, 器械誤差
Intermediate point, 中間點
Intermediate sight, 間望
Interpolation, 間插法
Intersection, 交切法
Interval factor, 綫距係數
Inverted, 反位
Inverting eye piece, 倒像對物鏡
Isogonic line, 等偏綫

J

Jacob's staff, 獨脚
Joint, 連結

K

Kerna, 客爾納
Key, 符號凡例

L

Land surveying, 陸地測量術
Latitude, 緯距
Leader, 前鎖者
Least Square, 最小二乘法
Leg, 脚
Legend, 符號凡例
Lens, 透鏡
Lettering, 題字
Level, 水準儀
Level bar, 水平棍
Level line, 水平綫
Level-man, 水準儀者
Level party, 水準儀班
Level surface, 水平面
Level tester, 驗準器
Level trier, 驗準器
Leveling, 平準測量或準測
Leveling head, 整準裝置
Leveling rod, 水準桿或水準尺
Leveling screw, 整準螺絲
Leveling staff, 水準桿或水準尺
Limit of precision, 精限
Line of collimation, 照準綫
Line of sight, 透望綫
Line ranger, 定綫器
Line surveying, 路綫測量術
Linen tape, 麻布卷尺或皮尺
Link, 節
Link motion, 連桿運動
Llano's method, 拉諾法
Local attraction, 局部引力
Logarithmic scale, 計算尺
Lower clamp, 下止動
Lower culmination, 下正中
Lower plate, 下板
Lunar enequality, 月不等

M

Magnetic axis, 磁軸
Magnetic meridian, 磁氣子午綫
Magnetic needle, 磁針
Magnetic north-and-south line, 磁北綫
Magnetize, 加磁
Magnification, 放大度
Main scale, 主尺
Main ruler, 主尺
Marine surveying, 海洋測量術
Marking arrow, 測針
Marking pin, 測針
Measurement, 量測
Measuring by repetition, 複測法
Measuring wheel, 測輪
Mechanical solution, 機械的解法
Meridian, 子午綫
Meridian distance, 子午綫距離
Meridian needle, 指北針
Meridian plane, 子午面
Metallic tape, 鐵綫卷尺
Method of middle area, 中央斷面法
Method of reversion, 反轉法
Method of squares, 方格法
Metric chain, 米鎖
Micrometer screw, 測微螺絲
Mill headed screw, 刻度頭螺絲
Mining surveying, 礦山測量術

Mining transit, 礦山經緯儀
Minus, 負
Minus sight, 負望
Mississippi, 密西西必河
Mistake, 錯誤
Monocular hand level, 單眼手準器
Most probable error, 最常差
Most probable value, 最當值
Multiplication constant, 乘常數

N

Natural error, 天然誤差
Nautical Almanac, 天文曆
Needle lifter, 舉針器
Neutral tint, 蔭景
New York rod, 紐約桿
Normal, 正位
Normal equation, 正規式
North pole, 北極
Note keeper, 記簿者
Numerical value, 數字
Nut, 螺絲帽

O

Object glass, 對物鏡
Object lens, 接物透鏡
Objective, 對物鏡
Observation, 觀測
Observational error, 觀測誤差
Odometer, 輪轉計
Office work, 內業
Offset, 枝距
Offset, 枝距
Offset scale, 枝距尺
Optical center, 光心
Optical square, 垂直鏡
Ordinate, 縱線
Orientation, 定位
Orienting the transit, 經緯儀之定位
Outer spindle, 外軸
Out-keeper, 記算器
Outline shading, 線影法

P

Pantograph, 桿動描圖器
Paper fastening, 結紙法
Paraffin, 石蠟
Parallax, 視差
Passometer, 步測計
Pedometer, 步程計
Peg adjustment, 樁正法
Penciling, 鉛筆工
Pendulum level, 鍾準器
Perambulator, 輪程計
Personal error, 個人誤差
Philadelphia rod, 斐拉德爾斐亞桿
Pin, 小針
Pitch, 螺絲距
Pivot, 尖軸
Plain circle, 普通圈
Plain compass, 普通羅盤儀
Plain tripod, 普通三脚架
Plane of sight, 透望面
Plane surveying, 平面測量術
Plane table, 平板儀
Plane table surveying, 平板儀測量術
Planimeter, 面積計
Plano-convex lens, 平凹透鏡
Plate level, 板準器
Plotting the map, 地圖之描畫
Plumb bob, 垂錘
Plumbing bar, 垂錘桿
Plumb line, 垂絲
Plumb line level, 錘準器
Plummet, 垂錘
Plunging, 轉鏡
Plus, 正
Plus sight, 正望
Pocket compass, 懷中羅盤儀
Point, 點
Polar arm, 極桿
Polar distance, 極距
Polar planimeter, 定極面積計
Polaris, 北極星
Pole, 極, 測桿
Pole star, 北極星
Precise level, 精密水準儀
Principal axis, 主軸
Principal focus, 主焦點
Principal point, 主點
Principal ray, 主光線
Prismatic compass, 稜鏡羅盤儀

Prismatic dumpy level, 棱鏡短肥水準儀
Prismoid, 擬壔
Prismoidal formula, 擬壔公式
Probable error, 當差
Profile, 縱斷面圖
Profile leveling, 縱斷面準測
Profile paper, 縱斷面圖紙
Progression, 進測法
Proof line, 檢線
Proportional divider, 比例兩脚規
Prussian blue, 普藍
Pumice powder, 輕石粉
Puppus's theorem, 拉普斯定理

R

Radiation, 放射法
Radio-progression, 放射進測法
Railway compass, 鐵路羅盤儀
Ramsden's positive eye piece, 那謨斯登實像對眼鏡
Ranging, 定向
Ranging pole, 測桿
Ratio of closure, 閉比
Real image, 實像
Rear chainman, 後鎖者
Record disc, 記盤
Rectangular coördinate axes, 直角縱橫軸
Red ochre, 紅丹
Reduction of stadia reading, 絲測指數之改算
Reference line, 根據線
Reference stake, 參考樁
Reflecting level, 反射準器
Reflector, 反射器
Refractional coefficient, 屈折係數
Resection, 截斷法
Residual, 殘餘
Retrograde vernier, 逆遊標
Reversing in altitude and azimuth, 縱橫倒轉
Ring of telescope tube, 鏡筒環
Rise and fall system, 昇降式
River surveying, 河川測量術
Road bed, 路基
Rod, 桿
Rod error, 準桿誤差
Rod intercept, 桿距
Rod level, 桿準器
Rod-man, 桿夫
Rod reading, 桿指數
Rolling ball planimeter, 旋球面積計
Rolling disc planimeter, 旋盤面積計
Roman type, 羅馬式
Route surveying, 路線測量術
Running transit-line, 設置經緯線

S

Secondary axis, 副軸
Secular variation, 遷差
Self-reading rod, 自讀桿
Sensitiveness, 銳敏度
Sepia, 墨灰
Setting up of instrument, 器械之安置
Sextant, 六分儀
Shell joint, 殼連結
Shifting center, 移心
Shoulder, 坡首
Shrinkage of earthwork, 土工之收縮
Side ditch, 側溝
Side slope, 側坡
Sight, 透望板
Sight vane, 透望板
Signal, 透望標
Simple measurement, 單測法
Simpson's first rule, 新蒲遜第一公式
Simpson's second rule, 新蒲遜第二公式
Single vernier, 單遊標
Size of field of view, 視野廣度
Sketch, 描圖
Sketch method, 描圖式
Slide, 滑器, 滑尺
Slide rule, 計算尺
Slide ruler, 滑尺
Sliding box, 滑盒
Slope, 斜坡, 坡度
Slope stake, 坡樁
Solar compass, 測日羅盤儀

Speaking rod, 自讀桿
Spherical aberration, 球差
Spirit leveling, 酒精準測
Split-leg tripod, 裂脚三脚架
Spring catch, 彈鈎
Squaring-off, 方邊法
Source of error, 誤差之起因
Stadia hairs, 測距絲
Stadia interval, 絲距
Stadia reading, 絲測指數
Stadia rod, 測距桿
Stadia station, 距絲點
Stadia surveying, 距絲測量術
Staff station, 距桿點
Stake-out, 定樁
Standard, 支架
Station, 測點
Station pointer, 三臂分度規
Steel axis, 鋼軸
Steel tape, 鋼卷尺
Steinheil, 斯泰因赫兒
Stop, 止針器
Suffix, 附尾字
Surveying, 測量
Surveying, 測量術
Surveyor's compass, 測量羅盤儀
Surveyor's transit, 測量經緯儀
Suspended planimeter, 懸盤面積計

T

Tachymeter, 迅測儀
Tachymetry, 迅測法
Tail, 坡尾
Tally resister, 記數計
Tangent scale, 切線尺
Tangent screw, 微動螺絲
Tape, 卷尺
Target, 望標
Target rod, 望標桿
Telescope, 望遠鏡
Telescope level, 鏡準器
Telescope tube, 鏡筒
Test, 檢驗
Test level, 檢驗準測
Theodolite, 定鏡經緯儀
Three-armed protractor, 三臂分度規
Three-level section, 三準面
Three point method, 三點法
Three point problem, 三點問題
Tie line, 繫線
Tinting, 設色工
Title, 標題
Topographical surveying, 地形測量術
Topographic map, 地形圖
Trachameter, 輪轉計
Tracing, 透描工
Tracing arm, 象臂
Tracing cloth, 蠟布
Tracing paper, 蠟紙
Tracing point, 象點
Transit, 經緯儀
Transit circle, 經緯圈
Transit-line, 經緯線
Transit-line angle, 經緯線角
Transit-man, 經緯儀者
Transit party, 經緯儀班
Transit station, 經緯點
Transit surveying, 經緯儀測量術
Transiting, 轉鏡
Trapezoidal rule, 梯形公式
Trautwine, 托遜托雷因
Traverse, 折線
Traverse plane table, 折測平板儀
Traversing, 折測法
Trembling of air, 空氣之顫盪
Trial level, 試驗準測
Triangulation, 三角測量
Trigonomical leveling, 三角準測
Tripod, 三脚架
Troy rod, 托雷桿
True error, 眞差
True north-and-south line, 眞北線
Tunnel surveying, 隧道測量術
Turning point, 轉換點
Two circle problem, 二圓法
Two point problem, 二點問題

U

Upper clamp, 上止動
Upper culmination, 上正中

Upper plate, 上板
Ursa major, 大熊星或北斗星
Ursa minor, 小熊星

V

Variation of declination, 偏差之變化
Vernier, 遊標
Vernier compass, 遊標羅盤儀
Vertical axis, 縱軸
Vertical circle, 縱圈
Vertical clamp, 縱止動
Virtual image, 虛像
Volume, 體積

W

Water level, 水準器
Water-proof ink, 耐水墨
Weddel's rule, 威得爾公式
Weight, 輕重率
Western elonation, 西離隔
Worm gearing, 螺絲連動
Wraped surface, 渦面
Wye, Y 形支架

Y

Y, Y 形支架
Yellow ochre, 赭黃
Y-level, Y 形水準儀

Z

Zero circle, 基圈

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