

ภาคผนวก

- I ค่าของ e^x และ e^{-x} (0.00-3.00)
- II ลอการิทึมสามัญ
- III ลอการิทึมธรรมชาติ
- IV ลอการิทึมของแฟกทอเรียล n
- V ฟังก์ชันตรีโกณมิติ - เรเดียนหรือจำนวนจริง
- VI ฟังก์ชันตรีโกณมิติ - องศา และลิปดา

TABLE I Values of e^x and e^{-x} (0.00 to 3.00)

x	e^x	e^{-x}	x	e^x	e^{-x}	x	e^x	e^{-x}
0.00	1.0000	1.000 00	0.50	1.6487	0.606 53	1.00	2.7183	0.367 88
0.01	1.0101	0.990 05	0.51	1.6653	0.600 50	1.01	2.7456	0.364 22
0.02	1.0202	0.980 20	0.52	1.6820	0.594 52	1.02	2.7732	0.360 59
0.03	1.0305	0.970 45	0.53	1.6989	0.588 60	1.03	2.8011	0.357 01
0.04	1.0408	0.960 79	0.54	1.7160	0.582 75	1.04	2.8292	0.353 45
0.05	1.0513	0.951 23	0.55	1.7333	0.576 95	1.05	2.8577	0.349 94
0.06	1.0618	0.941 76	0.56	1.7507	0.571 21	1.06	2.8864	0.346 46
0.07	1.0725	0.932 39	0.57	1.7683	0.565 53	1.07	2.9154	0.343 01
0.08	1.0833	0.923 12	0.58	1.7860	0.559 90	1.08	2.9447	0.339 60
0.09	1.0942	0.913 93	0.59	1.8040	0.554 33	1.09	2.9743	0.336 22
0.10	1.1052	0.904 84	0.60	1.8221	0.548 81	1.10	3.0042	0.332 87
0.11	1.1163	0.895 83	0.61	1.8404	0.543 35	1.11	3.0344	0.329 56
0.12	1.1275	0.886 92	0.62	1.8589	0.537 94	1.12	3.0649	0.326 28
0.13	1.1388	0.878 10	0.63	1.8776	0.532 59	1.13	3.0957	0.323 03
0.14	1.1503	0.869 36	0.64	1.8965	0.527 29	1.14	3.1268	0.319 82
0.15	1.1618	0.860 71	0.65	1.9155	0.522 05	1.15	3.1582	0.316 64
0.16	1.1735	0.852 14	0.66	1.9348	0.516 85	1.16	3.1899	0.313 49
0.17	1.1853	0.843 66	0.67	1.9542	0.511 71	1.17	3.2220	0.310 37
0.18	1.1972	0.835 27	0.68	1.9739	0.506 62	1.18	3.2544	0.307 28
0.19	1.2092	0.826 96	0.69	1.9937	0.501 58	1.19	3.2871	0.304 22
0.20	1.2214	0.818 73	0.70	2.0138	0.496 59	1.20	3.3201	0.301 19
0.21	1.2337	0.810 58	0.71	2.0340	0.491 64	1.21	3.3535	0.298 20
0.22	1.2461	0.802 52	0.72	2.0544	0.486 75	1.22	3.3872	0.295 23
0.23	1.2586	0.794 53	0.73	2.0751	0.481 91	1.23	3.4212	0.292 29
0.24	1.2712	0.786 63	0.74	2.0959	0.477 11	1.24	3.4556	0.289 38
0.25	1.2840	0.778 80	0.75	2.1170	0.472 37	1.25	3.4903	0.286 50
0.26	1.2969	0.771 05	0.76	2.1383	0.467 67	1.26	3.5254	0.283 65
0.27	1.3100	0.763 38	0.77	2.1598	0.463 01	1.27	3.5609	0.280 83
0.28	1.3231	0.755 78	0.78	2.1815	0.458 41	1.28	3.5966	0.278 04
0.29	1.3364	0.748 26	0.79	2.2034	0.453 84	1.29	3.6328	0.275 27
0.30	1.3499	0.740 82	0.80	2.2255	0.449 33	1.30	3.6693	0.272 53
0.31	1.3634	0.733 45	0.81	2.2479	0.444 86	1.31	3.7062	0.269 82
0.32	1.3771	0.726 15	0.82	2.2705	0.440 43	1.32	3.7434	0.267 14
0.33	1.3910	0.718 92	0.83	2.2933	0.436 05	1.33	3.7810	0.264 48
0.34	1.4049	0.711 77	0.84	2.3164	0.431 71	1.34	3.8190	0.261 85
0.35	1.4191	0.704 69	0.85	2.3396	0.427 41	1.35	3.8574	0.259 24
0.36	1.4333	0.697 68	0.86	2.3632	0.423 16	1.36	3.8962	0.256 66
0.37	1.4477	0.690 73	0.87	2.3869	0.418 95	1.37	3.9354	0.254 11
0.38	1.4623	0.683 86	0.88	2.4109	0.414 78	1.38	3.9749	0.251 58
0.39	1.4770	0.677 06	0.89	2.4351	0.410 66	1.39	4.0149	0.249 08
0.40	1.4918	0.670 32	0.90	2.4596	0.406 57	1.40	4.0552	0.246 60
0.41	1.5068	0.663 65	0.91	2.4843	0.402 52	1.41	4.0960	0.244 14
0.42	1.5220	0.657 05	0.92	2.5093	0.398 52	1.42	4.1371	0.241 71
0.43	1.5373	0.650 51	0.93	2.5345	0.394 55	1.43	4.1787	0.239 31
0.44	1.5527	0.644 04	0.94	2.5600	0.390 63	1.44	4.2207	0.236 93
0.45	1.5683	0.637 63	0.95	2.5857	0.386 74	1.45	4.2631	0.234 57
0.46	1.5841	0.631 28	0.96	2.6117	0.382 89	1.46	4.3060	0.232 24
0.47	1.6000	0.625 00	0.97	2.6379	0.379 08	1.47	4.3492	0.229 93
0.48	1.6161	0.618 78	0.98	2.6645	0.375 31	1.48	4.3939	0.227 64
0.49	1.6323	0.612 63	0.99	2.6912	0.371 58	1.49	4.4371	0.225 37
0.50	1.6487	0.606 53	1.00	2.7183	0.367 88	1.50	4.4817	0.223 13

TABLE I (continued)

x	e ^x	e ^{-x}	x	e ^x	e ^{-x}	x	e ^x	e ^{-x}
1.50	4.4817	0.223 13	2.00	7.3891	0.135 34	2.50	12.182	0.082 085
1.51	4.5267	0.220 91	2.01	7.4633	0.133 99	2.51	12.305	0.081 268
1.52	4.5722	0.218 71	2.02	7.5383	0.132 66	2.52	12.429	0.080 460
1.53	4.6182	0.216 54	2.03	7.6141	0.131 34	2.53	12.554	0.079 659
1.54	4.6646	0.214 38	2.04	7.6906	0.130 03	2.54	12.680	0.078 866
1.55	4.7115	0.212 25	2.05	7.7678	0.128 73	2.55	12.807	0.078 082
1.56	4.7588	0.210 14	2.06	7.8460	0.127 45	2.56	12.936	0.077 305
1.57	4.8066	0.208 05	2.07	7.9248	0.126 19	2.57	13.066	0.076 536
1.58	4.8550	0.205 98	2.08	8.0045	0.124 93	2.58	13.197	0.075 774
1.59	4.9037	0.203 93	2.09	8.0849	0.123 59	2.59	13.330	0.075 020
1.60	4.9530	0.201 90	2.10	8.1662	0.122 46	2.60	13.464	0.074 274
1.61	5.0028	0.199 89	2.11	8.2482	0.121 24	2.61	13.599	0.073 535
1.62	5.0531	0.197 90	2.12	8.3311	0.120 03	2.62	13.736	0.072 803
1.63	5.1039	0.195 93	2.13	8.4149	0.118 84	2.63	13.874	0.072 078
1.64	5.1552	0.193 98	2.14	8.4994	0.117 65	2.64	14.013	0.071 361
1.65	5.2070	0.192 05	2.15	8.5849	0.116 48	2.65	14.154	0.070 651
1.66	5.2593	0.190 14	2.16	8.6711	0.115 33	2.66	14.296	0.069 948
1.67	5.3122	0.188 25	2.17	8.7583	0.114 18	2.67	14.440	0.069 252
1.68	5.3656	0.186 37	2.18	8.8463	0.113 04	2.68	14.585	0.068 563
1.69	5.4195	0.184 52	2.19	8.9352	0.111 92	2.69	14.732	0.067 881
1.70	5.4739	0.182 68	2.20	9.0250	0.110 80	2.70	14.880	0.067 206
1.71	5.5290	0.180 87	2.21	9.1157	0.109 70	2.71	15.029	0.066 537
1.72	5.5845	0.179 07	2.22	9.2073	0.108 61	2.72	15.180	0.065 875
1.73	5.6407	0.177 28	2.23	9.2999	0.107 53	2.73	15.333	0.065 219
1.74	5.6973	0.175 52	2.24	9.3933	0.106 46	2.74	15.487	0.064 570
1.75	5.7546	0.173 77	2.25	9.4877	0.105 40	2.75	15.643	0.063 928
1.76	5.8124	0.172 04	2.26	9.5831	0.104 35	2.76	15.800	0.063 292
1.77	5.8709	0.170 33	2.27	9.6794	0.103 31	2.77	15.959	0.062 662
1.78	5.9299	0.168 64	2.28	9.7767	0.102 28	2.78	16.119	0.062 039
1.79	5.9895	0.166 96	2.29	9.8749	0.101 27	2.79	16.281	0.061 421
1.80	6.0496	0.165 30	2.30	9.9742	0.100 26	2.80	16.445	0.060 810
1.81	6.1104	0.163 65	2.31	10.074	0.099 261	2.81	16.610	0.060 205
1.82	6.1719	0.162 03	2.32	10.176	0.098 274	2.82	16.777	0.059 606
1.83	6.2339	0.160 41	2.33	10.278	0.097 296	2.83	16.945	0.059 013
1.84	6.2965	0.158 82	2.34	10.381	0.096 328	2.84	17.116	0.058 426
1.85	6.3598	0.157 24	2.35	10.486	0.095 369	2.85	17.288	0.057 844
1.86	6.4237	0.155 67	2.36	10.591	0.094 420	2.86	17.462	0.057 269
1.87	6.4883	0.154 12	2.37	10.697	0.093 481	2.87	17.637	0.056 699
1.88	6.5535	0.152 59	2.38	10.805	0.092 551	2.88	17.814	0.056 135
1.89	6.6194	0.151 07	2.39	10.913	0.091 630	2.89	17.993	0.055 576
1.90	6.6859	0.149 57	2.40	11.023	0.090 718	2.90	18.174	0.055 023
1.91	6.7531	0.148 08	2.41	11.134	0.089 815	2.91	18.357	0.054 476
1.92	6.8210	0.146 61	2.42	11.246	0.088 922	2.92	18.541	0.053 934
1.93	6.8895	0.145 15	2.43	11.359	0.088 037	2.93	18.728	0.053 397
1.94	6.9588	0.143 70	2.44	11.473	0.087 161	2.94	18.916	0.052 866
1.95	7.0287	0.142 27	2.45	11.588	0.086 294	2.95	19.106	0.052 340
1.96	7.0993	0.140 86	2.46	11.705	0.085 435	2.96	19.298	0.051 819
1.97	7.1707	0.139 46	2.47	11.822	0.084 585	2.97	19.492	0.051 303
1.98	7.2427	0.138 07	2.48	11.941	0.083 743	2.98	19.688	0.050 793
1.99	7.3155	0.136 70	2.49	12.061	0.082 910	2.99	19.886	0.050 287
2.00	7.3891	0.135 34	2.50	12.182	0.082 085	3.00	20.086	0.049 787

TABLE II Common Logarithms

x	0	1	2	3	4	5	6	7	8	9
1.0	0.0000	0.004321	0.008600	0.01284	0.01703	0.02119	0.02531	0.02938	0.03342	0.03743
1.1	0.04139	0.04532	0.04922	0.05308	0.05690	0.06070	0.06446	0.06819	0.07188	0.07555
1.2	0.07918	0.08279	0.08636	0.08991	0.09342	0.09691	0.1004	0.1038	0.1072	0.1106
1.3	0.1139	0.1173	0.1206	0.1239	0.1271	0.1303	0.1335	0.1367	0.1399	0.1430
1.4	0.1461	0.1492	0.1523	0.1553	0.1584	0.1614	0.1644	0.1673	0.1703	0.1732
1.5	0.1761	0.1790	0.1818	0.1847	0.1875	0.1903	0.1931	0.1959	0.1987	0.2014
1.6	0.2041	0.2068	0.2095	0.2122	0.2148	0.2175	0.2201	0.2227	0.2253	0.2279
1.7	0.2304	0.2330	0.2355	0.2380	0.2405	0.2430	0.2455	0.2480	0.2504	0.2529
1.8	0.2553	0.2577	0.2601	0.2625	0.2648	0.2673	0.2695	0.2718	0.2742	0.2765
1.9	0.2788	0.2810	0.2833	0.2856	0.2878	0.2900	0.2923	0.2945	0.2967	0.2989
2.0	0.3010	0.3032	0.3054	0.3075	0.3096	0.3118	0.3139	0.3160	0.3181	0.3201
2.1	0.3222	0.3243	0.3263	0.3284	0.3304	0.3324	0.3345	0.3365	0.3385	0.3404
2.2	0.3424	0.3444	0.3464	0.3483	0.3502	0.3522	0.3541	0.3560	0.3579	0.3598
2.3	0.3617	0.3636	0.3655	0.3674	0.3692	0.3711	0.3729	0.3747	0.3766	0.3784
2.4	0.3802	0.3820	0.3838	0.3856	0.3874	0.3892	0.3909	0.3927	0.3945	0.3962
2.5	0.3979	0.3997	0.4014	0.4031	0.4048	0.4065	0.4082	0.4099	0.4116	0.4133
2.6	0.4150	0.4166	0.4183	0.4200	0.4216	0.4232	0.4249	0.4265	0.4281	0.4298
2.7	0.4314	0.4330	0.4346	0.4362	0.4378	0.4393	0.4409	0.4425	0.4440	0.4456
2.8	0.4472	0.4487	0.4502	0.4518	0.4533	0.4548	0.4564	0.4579	0.4594	0.4609
2.9	0.4624	0.4639	0.4654	0.4669	0.4683	0.4698	0.4713	0.4728	0.4742	0.4757
3.0	0.4771	0.4786	0.4800	0.4814	0.4829	0.4843	0.4857	0.4871	0.4886	0.4900
3.1	0.4914	0.4928	0.4942	0.4955	0.4969	0.4983	0.4997	0.5011	0.5024	0.5038
3.2	0.5051	0.5065	0.5079	0.5092	0.5105	0.5119	0.5132	0.5145	0.5159	0.5172
3.3	0.5185	0.5198	0.5211	0.5224	0.5237	0.5250	0.5263	0.5276	0.5289	0.5302
3.4	0.5315	0.5328	0.5340	0.5353	0.5366	0.5378	0.5391	0.5403	0.5416	0.5428
3.5	0.5441	0.5453	0.5465	0.5478	0.5490	0.5502	0.5514	0.5527	0.5539	0.5551
3.6	0.5563	0.5575	0.5587	0.5599	0.5611	0.5623	0.5635	0.5647	0.5658	0.5670
3.7	0.5682	0.5694	0.5705	0.5717	0.5729	0.5740	0.5752	0.5763	0.5775	0.5786
3.8	0.5798	0.5809	0.5821	0.5832	0.5843	0.5855	0.5866	0.5877	0.5888	0.5899
3.9	0.5911	0.5922	0.5933	0.5944	0.5955	0.5966	0.5977	0.5988	0.5999	0.6010
4.0	0.6021	0.6031	0.6042	0.6053	0.6064	0.6075	0.6085	0.6096	0.6107	0.6117
4.1	0.6128	0.6138	0.6149	0.6160	0.6170	0.6180	0.6191	0.6201	0.6212	0.6222
4.2	0.6232	0.6243	0.6253	0.6263	0.6274	0.6284	0.6294	0.6304	0.6314	0.6325
4.3	0.6335	0.6345	0.6355	0.6365	0.6375	0.6385	0.6395	0.6405	0.6415	0.6425
4.4	0.6435	0.6444	0.6454	0.6464	0.6474	0.6484	0.6493	0.6503	0.6513	0.6522
4.5	0.6532	0.6542	0.6551	0.6561	0.6571	0.6580	0.6590	0.6599	0.6609	0.6618
4.6	0.6628	0.6637	0.6646	0.6656	0.6665	0.6675	0.6684	0.6693	0.6702	0.6712
4.7	0.6721	0.6730	0.6739	0.6749	0.6758	0.6767	0.6776	0.6785	0.6794	0.6803
4.8	0.6812	0.6821	0.6830	0.6839	0.6848	0.6857	0.6866	0.6875	0.6884	0.6893
4.9	0.6902	0.6911	0.6920	0.6928	0.6937	0.6946	0.6955	0.6964	0.6972	0.6981
5.0	0.6990	0.6998	0.7007	0.7016	0.7024	0.7033	0.7042	0.7050	0.7059	0.7067
5.1	0.7076	0.7084	0.7093	0.7101	0.7110	0.7118	0.7126	0.7135	0.7143	0.7152
5.2	0.7160	0.7168	0.7177	0.7185	0.7193	0.7202	0.7210	0.7218	0.7226	0.7235
5.3	0.7243	0.7251	0.7259	0.7267	0.7275	0.7284	0.7292	0.7300	0.7308	0.7316
5.4	0.7324	0.7332	0.7340	0.7348	0.7356	0.7364	0.7372	0.7380	0.7388	0.7396

TABLE II (continued)

x	0	1	2	3	4	5	6	7	8	9
5.5	0.7404	0.7412	0.7419	0.7427	0.7435	0.7443	0.7451	0.7459	0.7466	0.7474
5.6	0.7482	0.7490	0.7497	0.7505	0.7513	0.7520	0.7528	0.7536	0.7543	0.7551
5.7	0.7559	0.7566	0.7574	0.7582	0.7589	0.7597	0.7604	0.7612	0.7619	0.7627
5.8	0.7634	0.7642	0.7649	0.7657	0.7664	0.7672	0.7679	0.7686	0.7694	0.7701
5.9	0.7709	0.7716	0.7723	0.7731	0.7738	0.7745	0.7752	0.7760	0.7767	0.7774
6.0	0.7782	0.7789	0.7796	0.7803	0.7810	0.7818	0.7825	0.7832	0.7839	0.7846
6.1	0.7853	0.7860	0.7868	0.7875	0.7882	0.7889	0.7896	0.7903	0.7910	0.7917
6.2	0.7924	0.7931	0.7938	0.7945	0.7952	0.7959	0.7966	0.7973	0.7980	0.7987
6.3	0.7993	0.8000	0.8007	0.8014	0.8021	0.8028	0.8035	0.8041	0.8048	0.8055
6.4	0.8062	0.8069	0.8075	0.8082	0.8089	0.8096	0.8102	0.8109	0.8116	0.8122
6.5	0.8129	0.8136	0.8142	0.8149	0.8156	0.8162	0.8169	0.8176	0.8182	0.8189
6.6	0.8195	0.8202	0.8209	0.8215	0.8222	0.8228	0.8235	0.8241	0.8248	0.8254
6.7	0.8261	0.8267	0.8274	0.8280	0.8287	0.8293	0.8299	0.8306	0.8312	0.8319
6.8	0.8325	0.8331	0.8338	0.8344	0.8351	0.8357	0.8363	0.8370	0.8376	0.8382
6.9	0.8388	0.8395	0.8401	0.8407	0.8414	0.8420	0.8426	0.8432	0.8439	0.8445
7.0	0.8451	0.8457	0.8463	0.8470	0.8476	0.8482	0.8488	0.8494	0.8500	0.8506
7.1	0.8513	0.8519	0.8525	0.8531	0.8537	0.8543	0.8549	0.8555	0.8561	0.8567
7.2	0.8573	0.8579	0.8585	0.8591	0.8597	0.8603	0.8609	0.8615	0.8621	0.8627
7.3	0.8633	0.8639	0.8645	0.8651	0.8657	0.8663	0.8669	0.8675	0.8681	0.8686
7.4	0.8692	0.8698	0.8704	0.8710	0.8716	0.8722	0.8727	0.8733	0.8739	0.8745
7.5	0.8751	0.8756	0.8762	0.8768	0.8774	0.8779	0.8785	0.8791	0.8797	0.8802
7.6	0.8808	0.8814	0.8820	0.8825	0.8831	0.8837	0.8842	0.8848	0.8854	0.8859
7.7	0.8865	0.8871	0.8876	0.8882	0.8887	0.8893	0.8899	0.8904	0.8910	0.8915
7.8	0.8921	0.8927	0.8932	0.8938	0.8943	0.8949	0.8954	0.8960	0.8965	0.8971
7.9	0.8976	0.8982	0.8987	0.8993	0.8998	0.9004	0.9009	0.9015	0.9020	0.9025
8.0	0.9031	0.9036	0.9042	0.9047	0.9053	0.9058	0.9063	0.9069	0.9074	0.9079
8.1	0.9085	0.9090	0.9096	0.9101	0.9106	0.9112	0.9117	0.9122	0.9128	0.9133
8.2	0.9138	0.9143	0.9149	0.9154	0.9159	0.9165	0.9170	0.9175	0.9180	0.9186
8.3	0.9191	0.9196	0.9201	0.9206	0.9212	0.9217	0.9222	0.9227	0.9232	0.9238
8.4	0.9243	0.9248	0.9253	0.9258	0.9263	0.9269	0.9274	0.9279	0.9284	0.9289
8.5	0.9294	0.9299	0.9304	0.9309	0.9315	0.9320	0.9325	0.9330	0.9335	0.9340
8.6	0.9345	0.9350	0.9355	0.9360	0.9365	0.9370	0.9375	0.9380	0.9385	0.9390
8.7	0.9395	0.9400	0.9405	0.9410	0.9415	0.9420	0.9425	0.9430	0.9435	0.9440
8.8	0.9445	0.9450	0.9455	0.9460	0.9465	0.9469	0.9474	0.9479	0.9484	0.9489
8.9	0.9494	0.9499	0.9504	0.9509	0.9513	0.9518	0.9523	0.9528	0.9533	0.9538
9.0	0.9542	0.9547	0.9552	0.9557	0.9562	0.9566	0.9571	0.9576	0.9581	0.9586
9.1	0.9590	0.9595	0.9600	0.9605	0.9609	0.9614	0.9619	0.9624	0.9628	0.9633
9.2	0.9638	0.9643	0.9647	0.9652	0.9657	0.9661	0.9666	0.9671	0.9675	0.9680
9.3	0.9685	0.9689	0.9694	0.9699	0.9703	0.9708	0.9713	0.9717	0.9722	0.9727
9.4	0.9731	0.9736	0.9741	0.9745	0.9750	0.9754	0.9759	0.9763	0.9768	0.9773
9.5	0.9777	0.9782	0.9786	0.9791	0.9795	0.9800	0.9805	0.9809	0.9814	0.9818
9.6	0.9823	0.9827	0.9832	0.9836	0.9841	0.9845	0.9850	0.9854	0.9859	0.9863
9.7	0.9868	0.9872	0.9877	0.9881	0.9886	0.9890	0.9894	0.9899	0.9903	0.9908
9.8	0.9912	0.9917	0.9921	0.9926	0.9930	0.9934	0.9939	0.9943	0.9948	0.9952
9.9	0.9956	0.9961	0.9965	0.9969	0.9974	0.9978	0.9983	0.9987	0.9991	0.9996

TABLE III Natural Logarithms ($\ln x = \log_e x$)

$\ln 10 = 2.3026$ $6 \ln 10 = 13.8155$
 $2 \ln 10 = 4.6052$ $7 \ln 10 = 16.1181$
 $3 \ln 10 = 6.9078$ $8 \ln 10 = 18.4207$
 $4 \ln 10 = 9.2103$ $9 \ln 10 = 20.7233$
 $5 \ln 10 = 11.5130$ $10 \ln 10 = 23.0259$

Note: $\ln 35,200 = \ln (3.52 \times 10^4) = \ln 3.52 + 4 \ln 10$
 $\ln 0.00864 = \ln (8.64 \times 10^{-3}) = \ln 8.64 - 3 \ln 10$

x	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
1.0	0.0000	0.0100	0.0198	0.0296	0.0392	0.0488	0.0583	0.0677	0.0770	0.0862
1.1	0.0953	0.1044	0.1133	0.1222	0.1310	0.1398	0.1484	0.1570	0.1655	0.1740
1.2	0.1823	0.1906	0.1989	0.2070	0.2151	0.2231	0.2311	0.2390	0.2469	0.2546
1.3	0.2624	0.2700	0.2776	0.2852	0.2927	0.3001	0.3075	0.3148	0.3221	0.3293
1.4	0.3365	0.3436	0.3507	0.3577	0.3646	0.3716	0.3784	0.3853	0.3920	0.3988
1.5	0.4055	0.4121	0.4187	0.4253	0.4318	0.4383	0.4447	0.4511	0.4574	0.4637
1.6	0.4700	0.4762	0.4824	0.4886	0.4947	0.5008	0.5068	0.5128	0.5188	0.5247
1.7	0.5306	0.5365	0.5423	0.5481	0.5539	0.5596	0.5653	0.5710	0.5766	0.5822
1.8	0.5878	0.5933	0.5988	0.6043	0.6098	0.6152	0.6206	0.6259	0.6313	0.6366
1.9	0.6419	0.6471	0.6523	0.6575	0.6627	0.6678	0.6729	0.6780	0.6831	0.6881
2.0	0.6931	0.6981	0.7031	0.7080	0.7129	0.7178	0.7227	0.7275	0.7324	0.7372
2.1	0.7419	0.7467	0.7514	0.7561	0.7608	0.7655	0.7701	0.7747	0.7793	0.7839
2.2	0.7885	0.7930	0.7975	0.8020	0.8065	0.8109	0.8154	0.8198	0.8242	0.8286
2.3	0.8329	0.8372	0.8416	0.8459	0.8502	0.8544	0.8587	0.8629	0.8671	0.8713
2.4	0.8755	0.8796	0.8838	0.8879	0.8920	0.8961	0.9002	0.9042	0.9083	0.9123
2.5	0.9163	0.9203	0.9243	0.9282	0.9322	0.9361	0.9400	0.9439	0.9478	0.9517
2.6	0.9555	0.9594	0.9632	0.9670	0.9708	0.9746	0.9783	0.9821	0.9858	0.9895
2.7	0.9933	0.9969	1.0006	1.0043	1.0080	1.0116	1.0152	1.0188	1.0225	1.0260
2.8	1.0296	1.0332	1.0367	1.0403	1.0438	1.0473	1.0508	1.0543	1.0578	1.0613
2.9	1.0647	1.0682	1.0716	1.0750	1.0784	1.0818	1.0852	1.0886	1.0919	1.0953
3.0	1.0986	1.1019	1.1053	1.1086	1.1119	1.1151	1.1184	1.1217	1.1249	1.1282
3.1	1.1314	1.1346	1.1378	1.1410	1.1442	1.1474	1.1506	1.1537	1.1569	1.1600
3.2	1.1632	1.1663	1.1694	1.1725	1.1756	1.1787	1.1817	1.1848	1.1878	1.1909
3.3	1.1939	1.1969	1.2000	1.2030	1.2060	1.2090	1.2119	1.2149	1.2179	1.2208
3.4	1.2238	1.2267	1.2296	1.2326	1.2355	1.2384	1.2413	1.2442	1.2470	1.2499
3.5	1.2528	1.2556	1.2585	1.2613	1.2641	1.2669	1.2698	1.2726	1.2754	1.2782
3.6	1.2809	1.2837	1.2865	1.2892	1.2920	1.2947	1.2975	1.3002	1.3029	1.3056
3.7	1.3083	1.3110	1.3137	1.3164	1.3191	1.3218	1.3244	1.3271	1.3297	1.3324
3.8	1.3350	1.3376	1.3403	1.3429	1.3455	1.3481	1.3507	1.3533	1.3558	1.3584
3.9	1.3610	1.3635	1.3661	1.3686	1.3712	1.3737	1.3762	1.3788	1.3813	1.3838
4.0	1.3863	1.3888	1.3913	1.3938	1.3962	1.3987	1.4012	1.4036	1.4061	1.4085
4.1	1.4110	1.4134	1.4159	1.4183	1.4207	1.4231	1.4255	1.4279	1.4303	1.4327
4.2	1.4351	1.4375	1.4399	1.4422	1.4446	1.4469	1.4493	1.4516	1.4540	1.4563
4.3	1.4586	1.4609	1.4633	1.4656	1.4679	1.4702	1.4725	1.4748	1.4770	1.4793
4.4	1.4816	1.4839	1.4861	1.4884	1.4907	1.4929	1.4951	1.4974	1.4996	1.5019
4.5	1.5041	1.5063	1.5085	1.5107	1.5129	1.5151	1.5173	1.5195	1.5217	1.5239
4.6	1.5261	1.5282	1.5304	1.5326	1.5347	1.5369	1.5390	1.5412	1.5433	1.5454
4.7	1.5476	1.5497	1.5518	1.5539	1.5560	1.5581	1.5602	1.5623	1.5644	1.5665
4.8	1.5686	1.5707	1.5728	1.5748	1.5769	1.5790	1.5810	1.5831	1.5851	1.5872
4.9	1.5892	1.5913	1.5933	1.5953	1.5974	1.5994	1.6014	1.6034	1.6054	1.6074
5.0	1.6094	1.6114	1.6134	1.6154	1.6174	1.6194	1.6214	1.6233	1.6253	1.6273
5.1	1.6292	1.6312	1.6332	1.6351	1.6371	1.6390	1.6409	1.6429	1.6448	1.6467
5.2	1.6487	1.6506	1.6525	1.6544	1.6563	1.6582	1.6601	1.6620	1.6639	1.6658
5.3	1.6677	1.6696	1.6715	1.6734	1.6752	1.6771	1.6790	1.6808	1.6827	1.6845
5.4	1.6864	1.6882	1.6901	1.6919	1.6938	1.6956	1.6974	1.6993	1.7011	1.7029

TABLE III (continued)

x	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
5.5	1.7047	1.7066	1.7084	1.7102	1.7120	1.7138	1.7156	1.7174	1.7192	1.7210
5.6	1.7228	1.7246	1.7263	1.7281	1.7299	1.7317	1.7334	1.7352	1.7370	1.7387
5.7	1.7405	1.7422	1.7440	1.7457	1.7475	1.7492	1.7509	1.7527	1.7544	1.7561
5.8	1.7579	1.7596	1.7613	1.7630	1.7647	1.7664	1.7681	1.7699	1.7716	1.7733
5.9	1.7750	1.7766	1.7783	1.7800	1.7817	1.7834	1.7851	1.7867	1.7884	1.7901
6.0	1.7918	1.7934	1.7951	1.7967	1.7984	1.8001	1.8017	1.8034	1.8050	1.8066
6.1	1.8083	1.8099	1.8116	1.8132	1.8148	1.8165	1.8181	1.8197	1.8213	1.8229
6.2	1.8245	1.8262	1.8278	1.8294	1.8310	1.8326	1.8342	1.8358	1.8374	1.8390
6.3	1.8405	1.8421	1.8437	1.8453	1.8469	1.8485	1.8500	1.8516	1.8532	1.8547
6.4	1.8563	1.8579	1.8594	1.8610	1.8625	1.8641	1.8656	1.8672	1.8687	1.8703
6.5	1.8718	1.8733	1.8749	1.8764	1.8779	1.8795	1.8810	1.8825	1.8840	1.8856
6.6	1.8871	1.8886	1.8901	1.8916	1.8931	1.8946	1.8961	1.8976	1.8991	1.9006
6.7	1.9021	1.9036	1.9051	1.9066	1.9081	1.9095	1.9110	1.9125	1.9140	1.9155
6.8	1.9169	1.9184	1.9199	1.9213	1.9228	1.9242	1.9257	1.9272	1.9286	1.9301
6.9	1.9315	1.9330	1.9344	1.9359	1.9373	1.9387	1.9402	1.9416	1.9430	1.9445
7.0	1.9459	1.9473	1.9488	1.9502	1.9516	1.9530	1.9544	1.9559	1.9573	1.9587
7.1	1.9601	1.9615	1.9629	1.9643	1.9657	1.9671	1.9685	1.9699	1.9713	1.9727
7.2	1.9741	1.9755	1.9769	1.9782	1.9796	1.9810	1.9824	1.9838	1.9851	1.9865
7.3	1.9879	1.9892	1.9906	1.9920	1.9933	1.9947	1.9961	1.9974	1.9988	2.0001
7.4	2.0015	2.0028	2.0042	2.0055	2.0069	2.0082	2.0096	2.0109	2.0122	2.0136
7.5	2.0149	2.0162	2.0176	2.0189	2.0202	2.0215	2.0229	2.0242	2.0255	2.0268
7.6	2.0281	2.0295	2.0308	2.0321	2.0334	2.0347	2.0360	2.0373	2.0386	2.0399
7.7	2.0412	2.0425	2.0438	2.0451	2.0464	2.0477	2.0490	2.0503	2.0516	2.0528
7.8	2.0541	2.0554	2.0567	2.0580	2.0592	2.0605	2.0618	2.0631	2.0643	2.0656
7.9	2.0669	2.0681	2.0694	2.0707	2.0719	2.0732	2.0744	2.0757	2.0769	2.0782
8.0	2.0794	2.0807	2.0819	2.0832	2.0844	2.0857	2.0869	2.0882	2.0894	2.0906
8.1	2.0919	2.0931	2.0943	2.0956	2.0968	2.0980	2.0992	2.1005	2.1017	2.1029
8.2	2.1041	2.1054	2.1066	2.1078	2.1090	2.1102	2.1114	2.1126	2.1138	2.1150
8.3	2.1163	2.1175	2.1187	2.1199	2.1211	2.1223	2.1235	2.1247	2.1258	2.1270
8.4	2.1282	2.1294	2.1306	2.1318	2.1330	2.1342	2.1353	2.1365	2.1377	2.1389
8.5	2.1401	2.1412	2.1424	2.1436	2.1448	2.1459	2.1471	2.1483	2.1494	2.1506
8.6	2.1518	2.1529	2.1541	2.1552	2.1564	2.1576	2.1587	2.1599	2.1610	2.1622
8.7	2.1633	2.1645	2.1656	2.1668	2.1679	2.1691	2.1702	2.1713	2.1725	2.1736
8.8	2.1748	2.1759	2.1770	2.1782	2.1793	2.1804	2.1815	2.1827	2.1838	2.1849
8.9	2.1861	2.1872	2.1883	2.1894	2.1905	2.1917	2.1928	2.1939	2.1950	2.1961
9.0	2.1972	2.1983	2.1994	2.2006	2.2017	2.2028	2.2039	2.2050	2.2061	2.2072
9.1	2.2083	2.2094	2.2105	2.2116	2.2127	2.2138	2.2148	2.2159	2.2170	2.2181
9.2	2.2192	2.2203	2.2214	2.2225	2.2235	2.2246	2.2257	2.2268	2.2279	2.2289
9.3	2.2300	2.2311	2.2322	2.2332	2.2343	2.2354	2.2364	2.2375	2.2386	2.2396
9.4	2.2407	2.2418	2.2428	2.2439	2.2450	2.2460	2.2471	2.2481	2.2492	2.2502
9.5	2.2513	2.2523	2.2534	2.2544	2.2555	2.2565	2.2576	2.2586	2.2597	2.2607
9.6	2.2618	2.2628	2.2638	2.2649	2.2659	2.2670	2.2680	2.2690	2.2701	2.2711
9.7	2.2721	2.2732	2.2742	2.2752	2.2762	2.2773	2.2783	2.2793	2.2803	2.2814
9.8	2.2824	2.2834	2.2844	2.2854	2.2865	2.2875	2.2885	2.2895	2.2905	2.2915
9.9	2.2925	2.2935	2.2946	2.2956	2.2966	2.2976	2.2986	2.2996	2.3006	2.3016

TABLE IV Logarithms of Factorial n

n	$\log n!$	n	$\log n!$	n	$\log n!$	n	$\log n!$
1	0.000 00	50	64.483 07	100	157.970 00	150	262.756 89
2	0.301 03	51	66.190 64	101	159.974 32	151	264.935 87
3	0.778 15	52	67.906 65	102	161.982 93	152	267.117 71
4	1.380 21	53	69.630 92	103	163.995 76	153	269.302 41
5	2.079 18	54	71.363 32	104	166.012 80	154	271.489 93
6	2.857 33	55	73.103 68	105	168.033 99	155	273.680 26
7	3.702 43	56	74.851 87	106	170.059 29	156	275.873 38
8	4.605 52	57	78.607 74	107	172.086 67	157	278.069 28
9	5.559 76	58	78.371 17	108	174.122 10	158	280.267 94
10	6.559 76	59	80.142 02	109	176.159 52	159	282.469 34
11	7.601 16	60	81.920 17	110	178.200 92	160	284.673 46
12	8.680 34	61	83.705 50	111	180.246 24	161	286.880 28
13	9.794 28	62	85.497 90	112	182.295 46	162	289.089 80
14	10.940 41	63	87.297 24	113	184.348 54	163	291.301 98
15	12.116 50	64	89.103 42	114	186.405 44	164	293.516 83
16	13.320 62	65	90.916 33	115	188.466 14	165	295.734 31
17	14.551 07	66	92.735 87	116	190.530 60	166	297.954 42
18	15.806 34	67	94.561 95	117	192.598 78	167	300.177 14
19	17.085 09	68	96.394 46	118	194.670 67	168	302.402 45
20	18.386 12	69	98.233 31	119	196.746 21	169	304.630 33
21	19.708 34	70	100.078 40	120	198.825 39	170	306.860 78
22	21.050 77	71	101.929 66	121	200.908 18	171	309.093 78
23	22.412 49	72	103.787 00	122	202.994 54	172	311.329 31
24	23.792 71	73	105.650 32	123	205.084 44	173	313.567 35
25	25.190 65	74	107.519 55	124	207.177 87	174	315.807 90
26	26.605 62	75	109.394 61	125	209.274 78	175	318.050 94
27	28.036 98	76	111.275 43	126	211.375 15	176	320.296 45
28	29.484 14	77	113.161 92	127	213.478 95	177	322.544 43
29	30.946 54	78	115.054 01	128	215.586 16	178	324.794 85
30	32.423 66	79	116.951 64	129	217.696 75	179	327.047 70
31	33.915 02	80	118.854 73	130	219.810 69	180	329.302 97
32	35.420 17	81	120.763 21	131	221.927 96	181	331.560 65
33	36.938 69	82	122.677 03	132	224.048 54	182	333.820 72
34	38.470 16	83	124.596 10	133	226.172 39	183	336.083 17
35	40.014 23	84	126.520 38	134	228.299 49	184	338.347 99
36	41.570 54	85	128.449 80	135	230.429 83	185	340.615 16
37	43.138 74	86	130.384 30	136	232.563 37	186	342.884 68
38	44.718 52	87	132.323 82	137	234.700 09	187	345.156 52
39	46.309 59	88	134.268 30	138	236.839 97	188	347.430 67
40	47.911 65	89	136.217 69	139	238.982 98	189	349.707 14
41	49.524 43	90	138.171 94	140	241.129 11	190	351.985 89
42	51.147 88	91	140.130 98	141	242.278 33	191	354.266 92
43	52.781 15	92	142.094 76	142	245.430 62	192	356.550 22
44	54.424 60	93	144.063 25	143	247.585 95	193	358.835 78
45	56.077 81	94	146.036 38	144	249.744 32	194	361.123 58
46	57.740 57	95	148.014 10	145	251.905 68	195	363.413 62
47	59.412 67	96	149.996 37	146	254.070 04	196	365.705 87
48	61.093 91	97	151.983 14	147	256.237 35	197	368.000 34
49	62.784 10	98	153.974 37	148	258.407 62	198	370.297 01
		99	155.970 00	149	260.580 80	199	372.595 86

TABLE V Trigonometric Functions—Radians or Real Numbers

$\downarrow \rightarrow$	sin	cos	tan	cot	sec	csc
.00	.0000	1.0000	.0000	—	1.000	—
.01	.0100	1.0000	.0100	99.997	1.000	100.00
.02	.0200	.9998	.0200	49.993	1.000	50.00
.03	.0300	.9996	.0300	33.323	1.000	33.34
.04	.0400	.9992	.0400	24.987	1.001	25.01
.05	.0500	.9988	.0500	19.983	1.001	20.01
.06	.0600	.9982	.0601	16.647	1.002	16.68
.07	.0699	.9976	.0701	14.262	1.002	14.30
.08	.0799	.9968	.0802	12.473	1.003	12.51
.09	.0899	.9960	.0902	11.081	1.004	11.13
.10	.0998	.9950	.1003	9.967	1.005	10.02
.11	.1098	.9940	.1104	9.054	1.006	9.109
.12	.1197	.9928	.1206	8.293	1.007	8.353
.13	.1296	.9916	.1307	7.649	1.009	7.714
.14	.1395	.9902	.1409	7.096	1.010	7.166
.15	.1494	.9888	.1511	6.617	1.011	6.692
.16	.1593	.9872	.1614	6.197	1.013	6.277
.17	.1692	.9856	.1717	5.826	1.015	5.911
.18	.1790	.9838	.1820	5.495	1.016	5.586
.19	.1889	.9820	.1923	5.200	1.018	5.295
.20	.1987	.9801	.2027	4.933	1.020	5.033
.21	.2085	.9780	.2131	4.692	1.022	4.797
.22	.2182	.9759	.2236	4.472	1.025	4.582
.23	.2280	.9737	.2341	4.271	1.027	4.386
.24	.2377	.9713	.2447	4.086	1.030	4.207
.25	.2474	.9689	.2553	3.916	1.032	4.042
.26	.2571	.9664	.2660	3.759	1.035	3.890
.27	.2667	.9638	.2768	3.613	1.038	3.749
.28	.2764	.9611	.2876	3.478	1.041	3.619
.29	.2860	.9582	.2984	3.351	1.044	3.497
.30	.2955	.9553	.3093	3.233	1.047	3.384
.31	.3051	.9523	.3203	3.122	1.050	3.278
.32	.3146	.9492	.3314	3.018	1.053	3.179
.33	.3240	.9460	.3425	2.920	1.057	3.086
.34	.3335	.9428	.3537	2.827	1.061	2.999
.35	.3429	.9394	.3650	2.740	1.065	2.916
.36	.3523	.9359	.3764	2.657	1.068	2.839
.37	.3616	.9323	.3879	2.578	1.073	2.765
.38	.3709	.9287	.3994	2.504	1.077	2.696
.39	.3802	.9249	.4111	2.433	1.081	2.630
	sin	cos	tan	cot	sec	csc


	sin	cos	tan	cot	sec	csc
.40	.3894	.9211	.4228	2.365	1.086	2.568
.41	.3986	.9171	.4346	2.301	1.090	2.509
.42	.4078	.9131	.4466	2.239	1.095	2.452
.43	.4169	.9090	.4586	2.180	1.100	2.399
.44	.4259	.9048	.4708	2.124	1.105	2.348
.45	.4350	.9004	.4831	2.070	1.111	2.299
.46	.4439	.8961	.4954	2.018	1.116	2.253
.47	.4529	.8916	.5080	1.969	1.122	2.208
.48	.4618	.8870	.5208	1.921	1.127	2.166
.49	.4706	.8823	.5334	1.875	1.133	2.125
.50	.4794	.8776	.5463	1.830	1.139	2.086
.51	.4882	.8727	.5594	1.788	1.146	2.048
.52	.4969	.8678	.5726	1.747	1.152	2.013
.53	.5055	.8628	.5859	1.707	1.159	1.978
.54	.5141	.8577	.5994	1.668	1.166	1.945
.55	.5227	.8525	.6131	1.631	1.173	1.913
.56	.5312	.8473	.6269	1.595	1.180	1.883
.57	.5396	.8419	.6410	1.560	1.188	1.853
.58	.5480	.8365	.6552	1.526	1.196	1.825
.59	.5564	.8309	.6696	1.494	1.203	1.797
.60	.5646	.8253	.6841	1.462	1.212	1.771
.61	.5729	.8196	.6989	1.431	1.220	1.746
.62	.5810	.8139	.7139	1.401	1.229	1.721
.63	.5891	.8080	.7291	1.372	1.238	1.697
.64	.5972	.8021	.7445	1.343	1.247	1.674
.65	.6052	.7961	.7602	1.315	1.256	1.652
.66	.6131	.7900	.7761	1.288	1.266	1.631
.67	.6210	.7838	.7923	1.262	1.276	1.610
.68	.6288	.7776	.8087	1.237	1.286	1.590
.69	.6365	.7712	.8253	1.212	1.297	1.571
.70	.6442	.7648	.8423	1.187	1.307	1.552
.71	.6518	.7584	.8595	1.163	1.319	1.534
.72	.6594	.7518	.8771	1.140	1.330	1.517
.73	.6669	.7452	.8949	1.117	1.342	1.500
.74	.6743	.7385	.9131	1.095	1.354	1.483
.75	.6816	.7317	.9316	1.073	1.367	1.467
.76	.6889	.7248	.9505	1.052	1.380	1.452
.77	.6961	.7179	.9697	1.031	1.393	1.437
.78	.7033	.7109	.9893	1.011	1.407	1.422
.79	.7104	.7038	1.009	.9908	1.421	1.408
	sin	cos	tan	cot	sec	csc

TABLE V (continued)

\curvearrowright	sin	cos	tan	cot	sec	csc
.80	.7174	.6967	1.030	.9712	1.435	1.394
.81	.7243	.6895	1.050	.9520	1.450	1.381
.82	.7311	.6822	1.072	.9331	1.466	1.368
.83	.7379	.6749	1.093	.9146	1.482	1.355
.84	.7446	.6675	1.116	.8964	1.498	1.343
.85	.7513	.6600	1.138	.8785	1.515	1.331
.86	.7578	.6524	1.162	.8609	1.533	1.320
.87	.7643	.6448	1.185	.8437	1.551	1.308
.88	.7707	.6372	1.210	.8267	1.569	1.297
.89	.7771	.6294	1.235	.8100	1.589	1.287
.90	.7833	.6216	1.260	.7936	1.609	1.277
.91	.7895	.6137	1.286	.7774	1.629	1.267
.92	.7956	.6058	1.313	.7615	1.651	1.257
.93	.8016	.5978	1.341	.7458	1.673	1.247
.94	.8076	.5898	1.369	.7303	1.696	1.238
.95	.8134	.5817	1.398	.7151	1.719	1.229
.96	.8192	.5735	1.428	.7001	1.744	1.221
.97	.8249	.5653	1.459	.6853	1.769	1.212
.98	.8305	.5570	1.491	.6707	1.795	1.204
.99	.8360	.5487	1.524	.6563	1.823	1.196
1.00	.8415	.5403	1.557	.6421	1.851	1.188
1.01	.8468	.5319	1.592	.6281	1.880	1.181
1.02	.8521	.5234	1.628	.6142	1.911	1.174
1.03	.8573	.5148	1.665	.6005	1.942	1.166
1.04	.8624	.5062	1.704	.5870	1.975	1.160
1.05	.8674	.4976	1.743	.5736	2.010	1.153
1.06	.8724	.4889	1.784	.5604	2.046	1.146
1.07	.8772	.4801	1.827	.5473	2.083	1.140
1.08	.8820	.4713	1.871	.5344	2.122	1.134
1.09	.8866	.4625	1.917	.5216	2.162	1.128
1.10	.8912	.4536	1.965	.5090	2.205	1.122
1.11	.8957	.4447	2.014	.4964	2.249	1.116
1.12	.9001	.4357	2.066	.4840	2.295	1.111
1.13	.9044	.4267	2.120	.4718	2.344	1.106
1.14	.9086	.4176	2.176	.4596	2.395	1.101
1.15	.9128	.4085	2.234	.4475	2.448	1.096
1.16	.9168	.3993	2.296	.4356	2.504	1.091
1.17	.9208	.3902	2.360	.4237	2.563	1.086
1.18	.9246	.3809	2.427	.4120	2.625	1.082
1.19	.9284	.3717	2.498	.4003	2.691	1.077
	sin	cos	tan	cot	sec	csc

\curvearrowright	sin	cos	tan	cot	sec	csc
1.20	.9320	.3624	2.572	.3888	2.760	1.073
1.21	.9356	.3530	2.650	.3773	2.833	1.069
1.22	.9391	.3436	2.733	.3659	2.910	1.065
1.23	.9425	.3342	2.820	.3546	2.992	1.061
1.24	.9458	.3248	2.912	.3434	3.079	1.057
1.25	.9490	.3153	3.010	.3323	3.171	1.054
1.26	.9521	.3058	3.113	.3212	3.270	1.050
1.27	.9551	.2963	3.224	.3102	3.375	1.047
1.28	.9580	.2867	3.341	.2993	3.488	1.044
1.29	.9608	.2771	3.467	.2884	3.609	1.041
1.30	.9636	.2675	3.602	.2776	3.738	1.038
1.31	.9662	.2579	3.747	.2669	3.878	1.035
1.32	.9687	.2482	3.903	.2562	4.029	1.032
1.33	.9711	.2385	4.072	.2456	4.193	1.030
1.34	.9735	.2288	4.256	.2350	4.372	1.027
1.35	.9757	.2190	4.455	.2245	4.566	1.025
1.36	.9779	.2092	4.673	.2140	4.779	1.023
1.37	.9799	.1994	4.913	.2035	5.014	1.021
1.38	.9819	.1896	5.177	.1931	5.273	1.018
1.39	.9837	.1798	5.471	.1828	5.561	1.017
1.40	.9854	.1700	5.798	.1725	5.883	1.015
1.41	.9871	.1601	6.165	.1622	6.246	1.013
1.42	.9887	.1502	6.581	.1519	6.657	1.011
1.43	.9901	.1403	7.055	.1417	7.126	1.010
1.44	.9915	.1304	7.602	.1315	7.667	1.009
1.45	.9927	.1205	8.238	.1214	8.299	1.007
1.46	.9939	.1106	8.989	.1113	9.044	1.006
1.47	.9949	.1006	9.887	.1011	9.938	1.005
1.48	.9959	.0907	10.983	.0910	11.029	1.004
1.49	.9967	.0807	12.350	.0810	12.390	1.003
1.50	.9975	.0707	14.101	.0709	14.137	1.003
1.51	.9982	.0608	16.428	.0609	16.458	1.002
1.52	.9987	.0508	19.670	.0508	19.695	1.001
1.53	.9992	.0408	24.498	.0408	24.519	1.001
1.54	.9995	.0308	32.461	.0308	32.476	1.000
1.55	.9998	.0208	48.078	.0208	48.089	1.000
1.56	.9999	.0108	92.620	.0108	92.626	1.000
1.57	1.0000	.0008	1,255.8	.0008	1,255.8	1.000
1.58	1.0000	-.0092	-108.65	-.0092	-108.65	1.000
1.59	.9998	-.0192	-52.067	-.0192	-52.08	1.000
1.60	.9996	-.0292	-34.233	-.0292	-34.25	1.000
	sin	cos	tan	cot	sec	csc

TABLE VI Trigonometric Functions—Degrees and Minutes

↖	sin	cos	tan	cot	sec	csc	
0°00'	0.0000	1.000	0.0000	—	1.000	—	90°00'
10'	0.0029	1.000	0.0029	343.8	1.000	343.8	89°50'
20'	0.0058	1.000	0.0058	171.9	1.000	171.9	40'
30'	0.0087	1.000	0.0087	114.6	1.000	114.6	30'
40'	0.0116	0.9999	0.0116	85.94	1.000	85.95	20'
0°50'	0.0145	0.9999	0.0145	68.75	1.000	68.76	10'
1°00'	0.0175	0.9998	0.0175	57.29	1.000	57.30	89°00'
10'	0.0204	0.9998	0.0204	49.10	1.000	49.11	88°50'
20'	0.0233	0.9997	0.0233	42.96	1.000	42.98	40'
30'	0.0262	0.9997	0.0262	38.19	1.000	38.20	30'
40'	0.0291	0.9996	0.0291	34.37	1.000	34.38	20'
1°50'	0.0320	0.9995	0.0320	31.24	1.001	31.26	10'
2°00'	0.0349	0.9994	0.0349	28.64	1.001	28.65	88°00'
10'	0.0378	0.9993	0.0378	26.43	1.001	26.45	87°50'
20'	0.0407	0.9992	0.0407	24.54	1.001	24.56	40'
30'	0.0436	0.9990	0.0437	22.90	1.001	22.93	30'
40'	0.0465	0.9989	0.0466	21.47	1.001	21.49	20'
2°50'	0.0494	0.9988	0.0495	20.21	1.001	20.23	10'
3°00'	0.0523	0.9986	0.0524	19.08	1.001	19.11	87°00'
10'	0.0552	0.9985	0.0553	18.07	1.002	18.10	86°50'
20'	0.0581	0.9983	0.0582	17.17	1.002	17.20	40'
30'	0.0610	0.9981	0.0612	16.35	1.002	16.38	30'
40'	0.0640	0.9980	0.0641	15.60	1.002	15.64	20'
3°50'	0.0669	0.9978	0.0670	14.92	1.002	14.96	10'
4°00'	0.0698	0.9976	0.0699	14.30	1.002	14.34	86°00'
10'	0.0727	0.9974	0.0729	13.73	1.003	13.76	85°50'
20'	0.0756	0.9971	0.0758	13.20	1.003	13.23	40'
30'	0.0785	0.9969	0.0787	12.71	1.003	12.75	30'
40'	0.0814	0.9967	0.0816	12.25	1.003	12.29	20'
4°50'	0.0843	0.9964	0.0846	11.83	1.004	11.87	10'
5°00'	0.0872	0.9962	0.0875	11.43	1.004	11.47	85°00'
10'	0.0901	0.9959	0.0904	11.06	1.004	11.10	84°50'
20'	0.0929	0.9957	0.0934	10.71	1.004	10.76	40'
30'	0.0958	0.9954	0.0963	10.39	1.005	10.43	30'
40'	0.0987	0.9951	0.0992	10.08	1.005	10.13	20'
5°50'	0.1016	0.9948	0.1022	9.788	1.005	9.839	10'
6°00'	0.1045	0.9945	0.1051	9.514	1.006	9.567	84°00'
10'	0.1074	0.9942	0.1080	9.255	1.006	9.309	83°50'
20'	0.1103	0.9939	0.1110	9.010	1.006	9.065	40'
30'	0.1132	0.9936	0.1139	8.777	1.006	8.834	30'
40'	0.1161	0.9932	0.1169	8.556	1.007	8.614	20'
6°50'	0.1190	0.9929	0.1198	8.345	1.007	8.405	10'
7°00'	0.1219	0.9925	0.1228	8.144	1.008	8.206	83°00'
	cos	sin	cot	tan	csc	sec	↗



	sin	cos	tan	cot	sec	csc	
7°00'	0.1219	0.9925	0.1228	8.144	1.008	8.206	83°00'
10'	0.1248	0.9922	0.1257	7.953	1.008	8.016	82°50'
20'	0.1276	0.9918	0.1287	7.770	1.008	7.834	40'
30'	0.1305	0.9914	0.1317	7.596	1.009	7.661	30'
40'	0.1334	0.9911	0.1346	7.429	1.009	7.496	20'
7°50'	0.1363	0.9907	0.1376	7.269	1.009	7.337	10'
8°00'	0.1392	0.9903	0.1405	7.115	1.010	7.185	82°00'
10'	0.1421	0.9899	0.1435	6.968	1.010	7.040	81°50'
20'	0.1449	0.9894	0.1465	6.827	1.011	6.900	40'
30'	0.1478	0.9890	0.1495	6.691	1.011	6.765	30'
40'	0.1507	0.9886	0.1524	6.561	1.012	6.636	20'
8°50'	0.1536	0.9881	0.1554	6.435	1.012	6.512	10'
9°00'	0.1564	0.9877	0.1584	6.314	1.012	6.392	81°00'
10'	0.1593	0.9872	0.1614	6.197	1.013	6.277	80°50'
20'	0.1622	0.9868	0.1644	6.084	1.013	6.166	40'
30'	0.1650	0.9863	0.1673	5.976	1.014	6.059	30'
40'	0.1679	0.9858	0.1703	5.871	1.014	5.955	20'
9°50'	0.1708	0.9853	0.1733	5.769	1.015	5.855	10'
10°00'	0.1736	0.9848	0.1763	5.671	1.015	5.759	80°00'
10'	0.1765	0.9843	0.1793	5.576	1.016	5.665	79°50'
20'	0.1794	0.9838	0.1823	5.485	1.016	5.575	40'
30'	0.1822	0.9833	0.1853	5.396	1.017	5.487	30'
40'	0.1851	0.9827	0.1883	5.309	1.018	5.403	20'
10°50'	0.1880	0.9822	0.1914	5.226	1.018	5.320	10'
11°00'	0.1908	0.9816	0.1944	5.145	1.019	5.241	79°00'
10'	0.1937	0.9811	0.1974	5.066	1.019	5.164	78°50'
20'	0.1965	0.9805	0.2004	4.989	1.020	5.089	40'
30'	0.1994	0.9799	0.2035	4.915	1.020	5.016	30'
40'	0.2022	0.9793	0.2065	4.843	1.021	4.945	20'
11°50'	0.2051	0.9787	0.2095	4.773	1.022	4.876	10'
12°00'	0.2079	0.9781	0.2126	4.705	1.022	4.810	78°00'
10'	0.2108	0.9775	0.2156	4.638	1.023	4.745	77°50'
20'	0.2136	0.9769	0.2186	4.574	1.024	4.682	40'
30'	0.2164	0.9763	0.2217	4.511	1.024	4.620	30'
40'	0.2193	0.9757	0.2247	4.449	1.025	4.560	20'
12°50'	0.2221	0.9750	0.2278	4.390	1.026	4.502	10'
13°00'	0.2250	0.9744	0.2309	4.331	1.026	4.445	77°00'
10'	0.2278	0.9737	0.2339	4.275	1.027	4.390	76°50'
20'	0.2306	0.9730	0.2370	4.219	1.028	4.336	40'
30'	0.2334	0.9724	0.2401	4.165	1.028	4.284	30'
40'	0.2363	0.9717	0.2432	4.113	1.029	4.232	20'
13°50'	0.2391	0.9710	0.2462	4.061	1.030	4.182	10'
14°00'	0.2419	0.9703	0.2493	4.011	1.031	4.134	76°00'
	cos	sin	cot	tan	csc	sec	

TABLE VI (continued)

\curvearrowright	sin	cos	tan	cot	sec	csc	
14°00'	0.2419	0.9703	0.2493	4.011	1.031	4.134	76°00'
10'	0.2447	0.9696	0.2524	3.962	1.031	4.086	75°50'
20'	0.2476	0.9689	0.2555	3.914	1.032	4.039	40'
30'	0.2504	0.9681	0.2586	3.867	1.033	3.994	30'
40'	0.2532	0.9674	0.2617	3.821	1.034	3.950	20'
14°50'	0.2560	0.9667	0.2648	3.776	1.034	3.906	10'
15°00'	0.2588	0.9659	0.2679	3.732	1.035	3.864	75°00'
10'	0.2616	0.9652	0.2711	3.689	1.036	3.822	74°50'
20'	0.2644	0.9644	0.2742	3.647	1.037	3.782	40'
30'	0.2672	0.9636	0.2773	3.606	1.038	3.742	30'
40'	0.2700	0.9628	0.2805	3.566	1.039	3.703	20'
15°50'	0.2728	0.9621	0.2836	3.526	1.039	3.665	10'
16°00'	0.2756	0.9613	0.2867	3.487	1.040	3.628	74°00'
10'	0.2784	0.9605	0.2899	3.450	1.041	3.592	73°50'
20'	0.2812	0.9596	0.2931	3.412	1.042	3.556	40'
30'	0.2840	0.9588	0.2962	3.376	1.043	3.521	30'
40'	0.2868	0.9580	0.2994	3.340	1.044	3.487	20'
16°50'	0.2896	0.9572	0.3026	3.305	1.045	3.453	10'
17°00'	0.2924	0.9563	0.3057	3.271	1.046	3.420	73°00'
10'	0.2952	0.9555	0.3089	3.237	1.047	3.388	72°50'
20'	0.2979	0.9546	0.3121	3.204	1.048	3.356	40'
30'	0.3007	0.9537	0.3153	3.172	1.049	3.326	30'
40'	0.3035	0.9528	0.3185	3.140	1.049	3.295	20'
17°50'	0.3062	0.9520	0.3217	3.108	1.050	3.265	10'
18°00'	0.3090	0.9511	0.3249	3.078	1.051	3.236	72°00'
10'	0.3118	0.9502	0.3281	3.047	1.052	3.207	71°50'
20'	0.3145	0.9492	0.3314	3.018	1.053	3.179	40'
30'	0.3173	0.9483	0.3346	2.989	1.054	3.152	30'
40'	0.3201	0.9474	0.3378	2.960	1.056	3.124	20'
18°50'	0.3228	0.9465	0.3411	2.932	1.057	3.098	10'
19°00'	0.3256	0.9455	0.3443	2.904	1.058	3.072	71°00'
10'	0.3283	0.9446	0.3476	2.877	1.059	3.046	70°50'
20'	0.3311	0.9436	0.3508	2.850	1.060	3.021	40'
30'	0.3338	0.9426	0.3541	2.824	1.061	2.996	30'
40'	0.3365	0.9417	0.3574	2.798	1.062	2.971	20'
19°50'	0.3393	0.9407	0.3607	2.773	1.063	2.947	10'
20°00'	0.3420	0.9397	0.3640	2.747	1.064	2.924	70°00'
10'	0.3448	0.9387	0.3673	2.723	1.065	2.901	69°50'
20'	0.3475	0.9377	0.3706	2.699	1.066	2.878	40'
30'	0.3502	0.9367	0.3739	2.675	1.068	2.855	30'
40'	0.3529	0.9356	0.3772	2.651	1.069	2.833	20'
20°50'	0.3557	0.9346	0.3805	2.628	1.070	2.812	10'
21°00'	0.3584	0.9336	0.3839	2.605	1.071	2.790	69°00'
	cos	sin	cot	tan	csc	sec	\curvearrowleft





	sin	cos	tan	cot	sec	csc	
21°00'	0.3584	0.9336	0.3839	2.605	1.071	2.790	69°00'
10'	0.3611	0.9325	0.3872	2.583	1.072	2.769	68°50'
20'	0.3638	0.9315	0.3906	2.560	1.074	2.749	40'
30'	0.3665	0.9304	0.3939	2.539	1.075	2.729	30'
40'	0.3692	0.9293	0.3973	2.517	1.076	2.709	20'
21°50'	0.3719	0.9283	0.4006	2.496	1.077	2.689	10'
22°00'	0.3746	0.9272	0.4040	2.475	1.079	2.669	68°00'
10'	0.3773	0.9261	0.4074	2.455	1.080	2.650	67°50'
20'	0.3800	0.9250	0.4108	2.434	1.081	2.632	40'
30'	0.3827	0.9239	0.4142	2.414	1.082	2.613	30'
40'	0.3854	0.9228	0.4176	2.394	1.084	2.595	20'
22°50'	0.3881	0.9216	0.4210	2.375	1.085	2.577	10'
23°00'	0.3907	0.9205	0.4245	2.356	1.086	2.559	67°00'
10'	0.3934	0.9194	0.4279	2.337	1.088	2.542	66°50'
20'	0.3961	0.9182	0.4314	2.318	1.089	2.525	40'
30'	0.3987	0.9171	0.4348	2.300	1.090	2.508	30'
40'	0.4014	0.9159	0.4383	2.282	1.092	2.491	20'
23°50'	0.4041	0.9147	0.4417	2.264	1.093	2.475	10'
24°00'	0.4067	0.9135	0.4452	2.246	1.095	2.459	66°00'
10'	0.4094	0.9124	0.4487	2.229	1.096	2.443	65°50'
20'	0.4120	0.9112	0.4522	2.211	1.097	2.427	40'
30'	0.4147	0.9100	0.4557	2.194	1.099	2.411	30'
40'	0.4173	0.9088	0.4592	2.177	1.100	2.396	20'
24°50'	0.4200	0.9075	0.4628	2.161	1.102	2.381	10'
25°00'	0.4226	0.9063	0.4663	2.145	1.103	2.366	65°00'
10'	0.4253	0.9051	0.4699	2.128	1.105	2.352	64°50'
20'	0.4279	0.9038	0.4734	2.112	1.106	2.337	40'
30'	0.4305	0.9026	0.4770	2.097	1.108	2.323	30'
40'	0.4331	0.9013	0.4806	2.081	1.109	2.309	20'
25°50'	0.4358	0.9001	0.4841	2.066	1.111	2.295	10'
26°00'	0.4384	0.8988	0.4877	2.050	1.113	2.281	64°00'
10'	0.4410	0.8975	0.4913	2.035	1.114	2.268	63°50'
20'	0.4436	0.8962	0.4950	2.020	1.116	2.254	40'
30'	0.4462	0.8949	0.4986	2.006	1.117	2.241	30'
40'	0.4488	0.8936	0.5022	1.991	1.119	2.228	20'
26°50'	0.4514	0.8923	0.5059	1.977	1.121	2.215	10'
27°00'	0.4540	0.8910	0.5095	1.963	1.122	2.203	63°00'
10'	0.4566	0.8897	0.5132	1.949	1.124	2.190	62°50'
20'	0.4592	0.8884	0.5169	1.935	1.126	2.178	40'
30'	0.4617	0.8870	0.5206	1.921	1.127	2.166	30'
40'	0.4643	0.8857	0.5243	1.907	1.129	2.154	20'
27°50'	0.4669	0.8843	0.5280	1.894	1.131	2.142	10'
28°00'	0.4695	0.8829	0.5317	1.881	1.133	2.130	62°00'
	cos	sin	cot	tan	csc	sec	

TABLE VI (continued)

\curvearrowright	sin	cos	tan	cot	sec	csc	
28°00'	0.4695	0.8829	0.5317	1.881	1.133	2.130	62°00'
10'	0.4720	0.8816	0.5354	1.868	1.134	2.118	61°50'
20'	0.4746	0.8802	0.5392	1.855	1.136	2.107	40'
30'	0.4772	0.8788	0.5430	1.842	1.138	2.096	30'
40'	0.4797	0.8774	0.5467	1.829	1.140	2.085	20'
28°50'	0.4823	0.8760	0.5505	1.816	1.142	2.074	10'
29°00'	0.4848	0.8746	0.5543	1.804	1.143	2.063	61°00'
10'	0.4874	0.8732	0.5581	1.792	1.145	2.052	60°50'
20'	0.4899	0.8718	0.5619	1.780	1.147	2.041	40'
30'	0.4924	0.8704	0.5658	1.767	1.149	2.031	30'
40'	0.4950	0.8689	0.5696	1.756	1.151	2.020	20'
29°50'	0.4975	0.8675	0.5735	1.744	1.153	2.010	10'
30°00'	0.5000	0.8660	0.5774	1.732	1.155	2.000	60°00'
10'	0.5025	0.8646	0.5812	1.720	1.157	1.990	59°50'
20'	0.5050	0.8631	0.5851	1.709	1.159	1.980	40'
30'	0.5075	0.8616	0.5890	1.698	1.161	1.970	30'
40'	0.5100	0.8601	0.5930	1.686	1.163	1.961	20'
30°50'	0.5125	0.8587	0.5969	1.675	1.165	1.951	10'
31°00'	0.5150	0.8572	0.6009	1.664	1.167	1.942	59°00'
10'	0.5175	0.8557	0.6048	1.653	1.169	1.932	58°50'
20'	0.5200	0.8542	0.6088	1.643	1.171	1.923	40'
30'	0.5225	0.8528	0.6128	1.632	1.173	1.914	30'
40'	0.5250	0.8511	0.6168	1.621	1.175	1.905	20'
31°50'	0.5275	0.8496	0.6208	1.611	1.177	1.896	10'
32°00'	0.5299	0.8480	0.6249	1.600	1.179	1.887	58°00'
10'	0.5324	0.8465	0.6289	1.590	1.181	1.878	57°50'
20'	0.5348	0.8450	0.6330	1.580	1.184	1.870	40'
30'	0.5373	0.8434	0.6371	1.570	1.186	1.861	30'
40'	0.5398	0.8418	0.6412	1.560	1.188	1.853	20'
32°50'	0.5422	0.8403	0.6453	1.550	1.190	1.844	10'
33°00'	0.5446	0.8387	0.6494	1.540	1.192	1.836	57°00'
10'	0.5471	0.8371	0.6536	1.530	1.195	1.828	56°50'
20'	0.5495	0.8355	0.6577	1.520	1.197	1.820	40'
30'	0.5519	0.8339	0.6619	1.511	1.199	1.812	30'
40'	0.5544	0.8323	0.6661	1.501	1.202	1.804	20'
33°50'	0.5568	0.8307	0.6703	1.492	1.204	1.796	10'
34°00'	0.5592	0.8290	0.6745	1.483	1.206	1.788	56°00'
10'	0.5616	0.8274	0.6787	1.473	1.209	1.781	55°50'
20'	0.5640	0.8258	0.6830	1.464	1.211	1.773	40'
30'	0.5664	0.8241	0.6873	1.455	1.213	1.766	30'
40'	0.5688	0.8225	0.6916	1.446	1.216	1.758	20'
34°50'	0.5712	0.8208	0.6959	1.437	1.218	1.751	10'
35°00'	0.5736	0.8192	0.7002	1.428	1.221	1.743	55°00'
	cos	sin	cot	tan	csc	sec	\curvearrowleft

\rightarrow	sin	cos	tan	cot	sec	csc	
35°00'	0.5736	0.8192	0.7002	1.428	1.221	1.743	55°00'
10'	0.5760	0.8175	0.7046	1.419	1.223	1.736	54°50'
20'	0.5783	0.8158	0.7089	1.411	1.226	1.729	40'
30'	0.5807	0.8141	0.7133	1.402	1.228	1.722	30'
40'	0.5831	0.8124	0.7177	1.393	1.231	1.715	20'
35°50'	0.5854	0.8107	0.7221	1.385	1.233	1.708	10'
36°00'	0.5878	0.8090	0.7265	1.378	1.236	1.701	54°00'
10'	0.5901	0.8073	0.7310	1.368	1.239	1.695	53°50'
20'	0.5925	0.8056	0.7355	1.360	1.241	1.688	40'
30'	0.5948	0.8039	0.7400	1.351	1.244	1.681	30'
40'	0.5972	0.8021	0.7445	1.343	1.247	1.675	20'
36°50'	0.5995	0.8004	0.7490	1.335	1.249	1.668	10'
37°00'	0.6018	0.7986	0.7536	1.327	1.252	1.662	53°00'
10'	0.6041	0.7969	0.7581	1.319	1.255	1.655	52°50'
20'	0.6065	0.7951	0.7627	1.311	1.258	1.649	40'
30'	0.6088	0.7934	0.7673	1.303	1.260	1.643	30'
40'	0.6111	0.7916	0.7720	1.295	1.263	1.636	20'
37°50'	0.6134	0.7898	0.7766	1.288	1.266	1.630	10'
38°00'	0.6157	0.7880	0.7813	1.280	1.269	1.624	52°00'
10'	0.6180	0.7862	0.7860	1.272	1.272	1.618	51°50'
20'	0.6202	0.7844	0.7907	1.265	1.275	1.612	40'
30'	0.6225	0.7826	0.7954	1.257	1.278	1.606	30'
40'	0.6248	0.7808	0.8002	1.250	1.281	1.601	20'
38°50'	0.6271	0.7790	0.8050	1.242	1.284	1.595	10'
39°00'	0.6293	0.7771	0.8098	1.235	1.267	1.589	51°00'
10'	0.6316	0.7753	0.8146	1.228	1.290	1.583	50°50'
20'	0.6338	0.7735	0.8195	1.220	1.293	1.578	40'
30'	0.6361	0.7716	0.8243	1.213	1.296	1.572	30'
40'	0.6383	0.7698	0.8292	1.206	1.299	1.567	20'
39°50'	0.6406	0.7679	0.8342	1.199	1.302	1.561	10'
40°00'	0.6428	0.7660	0.8391	1.192	1.305	1.556	50°00'
10'	0.6450	0.7642	0.8441	1.185	1.309	1.550	49°50'
20'	0.6472	0.7623	0.8491	1.178	1.312	1.545	40'
30'	0.6494	0.7604	0.8541	1.171	1.315	1.540	30'
40'	0.6517	0.7585	0.8591	1.164	1.318	1.535	20'
40°50'	0.6539	0.7566	0.8642	1.157	1.322	1.529	10'
41°00'	0.6561	0.7547	0.8693	1.150	1.325	1.524	49°00'
10'	0.6583	0.7528	0.8744	1.144	1.328	1.519	48°50'
20'	0.6604	0.7509	0.8796	1.137	1.332	1.514	40'
30'	0.6626	0.7490	0.8847	1.130	1.335	1.509	30'
40'	0.6648	0.7470	0.8899	1.124	1.339	1.504	20'
41°50'	0.6670	0.7451	0.8952	1.117	1.342	1.499	10'
42°00'	0.6691	0.7431	0.9004	1.111	1.346	1.494	48°00'
	cos	sin	cot	tan	csc	sec	$\leftarrow \uparrow$

TABLE VI (continued)

	sin	cos	tan	cot	sec	csc	
42°00'	0.6691	0.7431	0.9004	1.111	1.346	1.494	48°00'
10'	0.6713	0.7412	0.9057	1.104	1.349	1.490	47°50'
20'	0.6734	0.7392	0.9110	1.098	1.353	1.485	40'
30'	0.6756	0.7373	0.9163	1.091	1.356	1.480	30'
40'	0.6777	0.7353	0.9217	1.085	1.360	1.476	20'
42°50'	0.6799	0.7333	0.9271	1.079	1.364	1.471	10'
43°00'	0.6820	0.7314	0.9325	1.072	1.367	1.466	47°00'
10'	0.6841	0.7294	0.9380	1.066	1.371	1.462	46°50'
20'	0.6862	0.7274	0.9435	1.060	1.375	1.457	40'
30'	0.6884	0.7254	0.9490	1.054	1.379	1.453	30'
40'	0.6905	0.7234	0.9545	1.048	1.382	1.448	20'
43°50'	0.6926	0.7214	0.9601	1.042	1.386	1.444	10'
44°00'	0.6947	0.7193	0.9657	1.036	1.390	1.440	46°00'
10'	0.6967	0.7173	0.9713	1.030	1.394	1.435	45°50'
20'	0.6988	0.7153	0.9770	1.024	1.398	1.431	40'
30'	0.7009	0.7133	0.9827	1.018	1.402	1.427	30'
40'	0.7030	0.7112	0.9884	1.012	1.406	1.423	20'
44°50'	0.7050	0.7092	0.9942	1.006	1.410	1.418	10'
45°00'	0.7071	0.7071	1.000	1.000	1.414	1.414	45°00'
	cos	sin	cot	tan	csc	sec	

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