

Knott, Cargill Gilston Four-figure mathematical tables. New and enl. ed.





FOUR-FIGURE

K72

Leeds

MATHEMATICAL TABLES

NEW AND ENLARGED EDITION

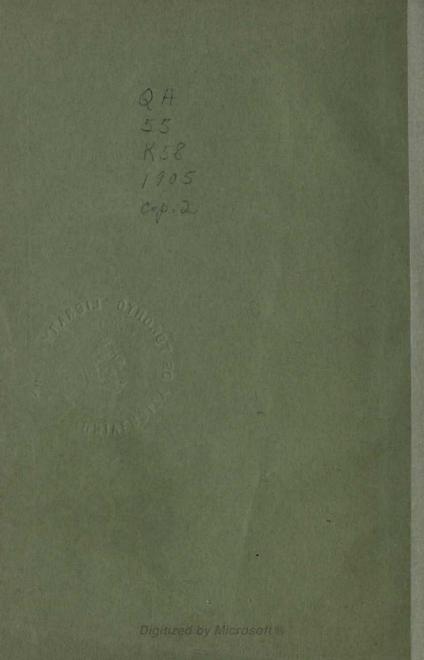
BY

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LONDON: 38 Soho Square, W. W. & R. CHAMBERS, LIMITED EDINBURGH: 339 High Street



USEFUL NUMBERS WITH THEIR LOGARITHMS.

METRIC SYSTEM.

	Multine 21	Log.		Log.
1 metre	=39.870113 in.	1.59517	1 in. = 2.54 cm.	.40483
	= 3.280843 ft.	•51599	1 ft. = 30.48 cm.	1.48401
	= 1.0936 yd.	.03886	1 yd. = 0.9144 m.	1.96114
1 Km.	= 0.62137 ml.	1.79335	1 ml. = 1.6093 Km.	•20665
1 (m.)2	=10.7639 (ft.)2	1.03197	$1 (in.)^2 = 6.4516 (cm.)^2$	-80967
	= 1.196 (yd.)2	•07773	$1 (yd.)^2 = 0.8361 (m.)^2$	1.92227
1 (Km.) ²	$a = 0.3861 (ml.)^2$	1.58670	$1 (ml.)^2 = 2.59 (Km.)^2$	•41330
1 hectar	e = 2.4716 acres	•39298	1 acre = 0.4046 hectare	1.60702
1 (m.) ³	= 1.308 (yd.)3	·11659	$1 (yd.)^3 = 0.7646 (m.)^3$	1.88341
1 litre	=61.0238 (in.)3	1.78550	$1 (in.)^3 = 16.387 (cm.)^3$	1.21450
	= 176 pint	*24546	1 pint = 0.568 1.	1.75454
	= 0.22 gallon	1.34237	1 gallon = 4.546 l.	•65763
1 gram	=15·43236 gr.	1.18843	1 gr. = 0.0648 g.	2.81157
1 Kg.	= 2.20462 lb.	•34333	1 lb. $= 0.4536$ Kg.	1.65667

MA	THEM	ATICAL	CONSTA	NTS

Too

$\pi = 3.14159265=3$				49715
$180/\pi = 57^{\circ} \cdot 2958 = 57^{\circ} \cdot 17'$	44"'8 (the radian i	n degrees, &c.)	Ser Mintels	I 1.75812
	Log.			1
$\pi/2 = 1.5708$	19612	x ² =	9.8696	-99430
$4\pi/3 = 4.1888$.62209	$1/\sqrt{\pi} =$	0.5642	1.75143
$1/\pi = 0.3183$	1.50285	\$/3/4π =	0.62035	1.79264
$\pi/180 = 0.017453$	2.24188	\$/6/7 =	1 24070	09367
e = 2.7182818	'43429	e#/2 =	4.8105	68219
$Log_e 10 = 2.3025851$	or exp. (2.3025	851)=10.		

For powers of e, see Table on p. 32.

DYNAMICAL CONSTANTS.

g =	32.2 ft./(sec.)2	Log. 1·50786	g =	981 cm./(sec.) ²	Log. 2 [.] 99167
1 lbwt. =	4.45×105 dynes	5.64836	10 ⁶ dynes=	2.247 lbwt.	.35164
1 ftlb. =	0.1383 Kgm.	ī·14078	1 Kgm. =	7.231 ftlb.	*85922
=	1.356×107 ergs	7.13245	10 ⁸ ergs ==	7·371 ftlb.	.86755
	1 atmosphere of pressu	are = $1.014 \times$	10 ⁶ dynes/(ci	n.) ²	6.00604
		= 14.7 lb	wt./(in.)2		1.16732
		= 1.034 K	gwt./(cm.)	alitative minister	•01437
	1 lbwt./(in.)	$^2 = 70.31 \mathrm{gra}$	am-wt./(cm.)	2	1.84702
	1 Kg. wt./(cm	$(.)^2 = 14.223$ lt	wt./(in.)2		1.18298

A

LOGARITHMS OF NUMBERS.

			Diff	fere	nces	3.	
2 3	3	4	5	6	7	8	9
8 12 8 11 7 10 6 10 6 9 6 8	11 10 10 9	15 14 13 12	17 16	23 21 19 18	29 26 24 23 21 20	33 30 28 26 24 22	37 34 31 29 27 25
5 8 5 7 5 7 4 6	777	11 10 9 9 8	12 11	15 14 13		21 20 19 18 17	24 22 21 20 19
4 6 4 6 4 6 4 5 3 5	6 6 5	887777	10 10 9 9	12	14 13	15 15 14	18 17 17 16 15
3 5 3 5 3 5 3 4 3 4	554	7 6 6 6 6	88877	10 9 9 9 9	11 11 11 10 10	13 12	15 14 14 13 13
	444	65555	77666	888887	99	11 10 10	12 12 12 11 11
2 3 2 3 2 3	00 00 00	55544	66655		888888	10. 9 9 9 9	11 10 10 10 10
2 3	00 00 00	44444	5555	66	77777	88888	99999
2 3 2 3 2 3 2 3 2 3 2 3 2 3	00 00 00	4 4 4 4 3	5 4 4	555	7 6 6 6 6	77777	8 8 8 8 8
2 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	222	00 00 00 00	444	555	6 6 6 5	7 7 6 6 6	87777
2 2 2 2 1 2 1 2 1 2 1 2	222	000000000000000000000000000000000000000	444	544	55555	6 6 6 6 6	77776
	32 22222 22222 22222 22211	44 4333333 3333333 3333333 3202222 222211 1 </th <th>5 4 4</th> <th>32 2222222 <</th> <th>33 3 5 5 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 6 5</th> <th>3 4 5 6 8 9 9 8 8 9 9 8 8 7 7 8 8 8 7 7 8 8 8 7 7 8 8 8 7 7 8 8 8 7 7 7 6 6 7 7 7 7 6 6 7 7 7 7 7 7 7 7 6 6 7 3 3 3</th> <th>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</th>	5 4 4	32 2222222 <	33 3 5 5 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 7 7 7 6 6 6 5	3 4 5 6 8 9 9 8 8 9 9 8 8 7 7 8 8 8 7 7 8 8 8 7 7 8 8 8 7 7 8 8 8 7 7 7 6 6 7 7 7 7 6 6 7 7 7 7 7 7 7 7 6 6 7 3 3 3	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

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LOGARITHMS OF NUMBERS.

	-							7	8	9		M	ear	n D	iffe	ren	ices	3.	
16	0	1	2	3	4	5	6		0	9	1	2	3	4	5	6	7	8	9
60 61 62 63 64 65	7782 7853 7924 7993 8062 8129	7789 7860 7931 8000 8069 8136	7796 7868 7938 8007 8075 8142	7803 7875 7945 8014 8082 8149	7810 7882 7952 8021 8089 8156	7818 7889 7959 8028 8096 8162	7825 7896 7966 8035 8102 8169	7832 7903 7973 8041 8109 8176	7839 7910 7980 8048 8116 8182	7846 7917 7987 8055 8122 8189	111111111	111111111	222222		443333	444444	555555	666555	666666
66 67 68 69 70	8195 8261 8325 8388 8451	8202 8267 8331 8395 8457	8209 8274 8338 8401 8463	8215 8280 8344 8407 8470	8222 8287 8351 8414 8476	8228 8293 8357 8420 8482	8235 8299 8363 8426 8488	8241 8306 8370 8432 8494	8248 8312 8376 8439 8500	8254 8319 8382 8445 8506	1 1 1 1 1 1 1	111111	222222	33322	3 3 3 3 3 3	44444	5 5 4 4 4	56555	6 6 6 6 6
71 72 73 74 75	8513 8573 8633 8692 8751	8519 8579 8639 8698 8756	8525 8585 8645 8704 8762	8531 8591 8651 8710 8768	8537 8597 8657 8716 8774	8543 8603 8663 8722 8779	8549 8609 8669 8727 8785	8555 8615 8675 8733 8791	8561 8621 8681 8739 8797	8567 8627 8686 8745 8802	1 1 1 1 1	111111	22222	22222	****	44443	444444	55555	555555
76 77 78 79 80	8808 8865 8921 8976 9031	8814 8871 8927 8982 9036	8820 8876 8932* 8987 9042	8825 8882 8938 8993 9047	8831 8887 8943 8998 9053	8837 8893 8949 9004 9058	8842 8899 8954 9009 9063	8848 8904 8960 9015 9069	8854 8910 8965 9020 9074	8859 8915 8971 9025 9079	1 1 1 1 1	1111111	2 2 2 2 2 2 2 2 2	222222	3 3 3 3 3 3	00 00 00 00	44444	54444	55556
81 82 83 84 85	9085 9138 9191 9243 9294	9090 9143 9196 9248 9299	9096 9149 9201 9253 9304	9101 9154 9206 9258 9309	9106 9159 9212 9263 9315	9112 9165 9217 9269 9320	9117 9170 9222 9274 9325	9122 9175 9227 9279 9330	9128 9180 9232 9284 9335	9133 9186 9238 9289 9340	111111	1111111	22222	22222	80 80 80 80	လ လ လ လ လ	44444	44444	56555
86 87 88 89 90	9345 9395 9445 9494 9542	9350 9400 9450 9499 9547	9355 9405 9455 9504 9552	9360 9410 9460 9509 9557	9365 9415 9465 9513 9562	9370 9420 9469 9518 9566	9375 9425 9474 9523 9571	9380 9430 9479 9528 9576	9385 9435 9484 9533 9581	9390 9440 9489 9538 9586	100000	111111	2 1 1 1 1	222222	32222	****	4 3 3 3 3 3	44444	54444
91 92 93 94 95	9590 9638 9685 9731 9777	9595 9643 9689 9736 9782	9600 9647 9694 9741 9786	9605 9652 9699 9745 9791	9609 9657 9706 9750 9750 9795	9614 9661 9708 9754 9800	9619 9666 9713 9759 9805	9624 9671 9717 9763 9809	9628 9675 9722 9768 9814	9633 9680 9727 9773 9818	000000	1111111	111111	22222	222222	80 80 80 80	3 3 8 3 3 3	44444	44444
96 97 98 99 100	9823 9868 9912 9956 0000	9827 9872 9917 9961 0004	9832 9877 9921 9965 0009	9836 9881 9926 9969 0013	9841 9886 9930 9974 0017	9845 9890 9934 9978 0022	9850 9894 9939 9983 0026	9854 9899 9943 9987 0030	9859 9903 9948 9991 0035	9863 9908 9952 9996 0039	0 0 0 0	11111	11111	2 2 2 2 2	2 2 2 2 2	3 3 3 3	33333	4443	4444
101 102 103 104 105	0043 0086 0128 0170 0212	0048 0090 0133 0175 0216	0052 0095 0137 0179 0220	0056 0099 0141 0183 0224	0060 0103 0145 0187 0228	0065 0107 0149 0191 0233	0069 0111 0154 0195 0237	0073 0116 0158 0199 0241	0077 0120 0162 0204 0245	0082 0124 0166 0208 0249	1 Konto In			A A A A A A A A A A A A A A A A A A A			NN NN		
106 107 108 109 110	0294 0334 0374	0257 0298 0338 0378 0418	0261 0302 0342 0382 0422	0265 0306 0346 0386 0426	0209 0310 0350 0390 0430	0273 0314 0354 0394 0434	0278 0318 0358 0398 0438	0282 0322 0362 0402 0402	0286 0326 0366 0406 0445	0330 0370 0410	A DEMINIS								

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ANTILOGARITHMS.

01 02 03 04 05 06 07	0 1000 1023 1047	1	2	3	4	5	6	7	8	9	Mean Differences.					-			
01 02 03 04 05 06 07	1023 1047				1						1	2	3	4	5	6	7	8	~
01 02 03 04 05 06 07	1047	1002	1005	1007	1009	1012	1014	1016	1019	1021	0	0	1	1	1	1	2	2	2
)3)4)5)6)7		1026	1028	1030	1033	1035	1038	1040	1042	1045	0	0	1	1	1	î	2	2	2
)4)5)6)7		1050	1052	1054	1057	1059	1062	1064	1067	1069	0	0	1	1	1	1	2	2	2
05 06 07	1072	1074	1076	1079	1081	1084	1086	1089	1091	1094	0	0	1	1	1	1	2	2	2
7	1096 1122	1099 1125	1102 1127	1104 1130	1107 1132	1109 1135	1112 1138	1114 1140	1117 1143	1119 1146	0	11	11	11	11	22	22	22	64 64
	1148	1151	1153	1156	1159	1261	1164	1167	1169	1172	0	1	1	1	1	2	2	2	
	1175	1178	1180	1183	1186	1189	1191	1194	1197	1199	0	1	1	1	1	2	2	2	
	1202	1205	1208	1211 1239	1213 1242	1216	1219 1247	1222	1225 1253	1227 1256	0	11	1	1	1	2	22	22	CO CO
	1230 1259	1233 1262	1236 1265	1268	1242	1245 1274	1276	1250 1279	1255	1285	0	1	1	11	1	22	2	2	60.00
	1288	1291	1294	1297	1300	1303	1306	1309	1312	1315	0	1	1	1	2	2	2	2	610
	1318	1321	1324	1327	1330	1334	1337	1340	1343	1346	0	1	1	1	2	2	2	2	50
	1349 1380	1352 1384	1355 1387	1358 1390	1361 1393	1365 1396	1368 1400	1371 1403	1374	1377 1409	0	1	1	1	22	2	22	3 33	00 00
	1413	1416	1419	1422	1426	1429	1432	1435	1439	1403	ŏ	i	1	i	2	2	2	3	000
	1445	1449	1452	1455	1459	1462	1466	1469	1472	1476	0	1	1	1	2	2	2	3	3
	1479	1483	1486	1489	1493	1496	1500	1503	1507	1510	0	1	1	1	2	2	2	3	000
	1514 1549	1517 1552	1521 1556	1524 1560	1528 1563	1531 1567	1535 1570	1538 1574	1542 1578	1545 1581	0	1	11	1	22	22	23	33	00 00
	1585	1589	1592	1596	1600	1603	1607	1611	1614	1618	Õ	î	1	î	2	2	3	3	000
	1622	1626	1629	1633	1637	1641	1644	1648	1652	1656	0	1	1	2	2	2	3	3	000
	1660 1698	1663 1702	1667 1706	1671 1710	1675	1679 1718	$1683 \\ 1722$	1687 1726	1690 1730	1694 1734	0	1	1	22	22	22	33	3 33	93 4
	1738	1742	1746	1750	$1714 \\ 1754$	1718	1762	1766	1770	1774	0	1	1	2	2	2	3	3	4
	1778	1782	1786	1791	1795	1799	1803	1807	1811	1816	Ő	î	î	2	2	2	3	3	4
	1820	1824	1828	1832	1837	1841	1845 1888	1849 1892	1854 1897	1858 1901	00	1	1	22	22	3	3	33	4
	1862 1905	1866 1910	1871 1914	1875 1919	1879 1923	1884 1928	1932	1936	1941	1945	ő	i	1	2	2	33	3 33	4	44
	1950	1954	1959	1963	1968	1972	1977	1982	1986	1991	õ	i	î	2	2	3	3	4	4
	1995	2000	2004	2009	2014	2018	2023	2028	2032	2037	0	1	1	2	2	3	3	4	4
	2042 2089	2046 2094	2051 2099	2056 2104	2061 2109	2065 2113	2070 2118	2075 2123	2080 2128	2084 2133	0	1	1	22	22	3 3	33	4	4
	2138	2143	2148	2153	2109	2163	2168	2173	2178	2183	õ	1	1	2	2	3	3	4	4
4	2188	2193	2198	2203	2208	2213	2218	2223	2228	2234	1	1	2	2	3	3	4	4	5
5	2239	2244	2249	2254	2259	2265	2270	2275	2280	2286	1	1	2	2	3	3	4	4	5
	2291 2344	2296 2350	2301 2355	2307 2360	2312 2366	2317 2371	2323 2377	2328 2382	2333 2388	2339 2393	1	1 1	22	22	3 3	3 3	44	4 4	55
	2399	2404	2410	2415	2421	2427	2432	2438	2443	2449	î	î	2	2	3	3	4	4	5
19	2455 2512	2460 2518	2468 2523	2472 2529	2477 2535	2483 2541	2489 2547	2495 2553	2500 2559	2506 2564	1	11	22	22	3	34	4	55	5 5
9	2570	2576	2582	2588	2594	2600	2606	2612	2618	2624	1	1	2	2	3	4	4	5	5
2	2630	2636	2642	2649	2655	2661	2667	2673	2679	2685	1	î	2	2	3	4	4	5	6
13	2692	2698	2704	2710	2716	2723	2729	2735	2742	2748	1	1	2	3	3	4	4	5	6
	2754 2818	2761 2825	2767 2831	2773 2838	$2780 \\ 2844$	2786 2851	2793 2858	2799 2864	2805 2871	2812 2877	1	11	22	33	33	4 4	4 5	55	6
	2884	2891	2897	2904	2911	2917	2924	2931	2938	2944	1	1	2	3	3	4	5	5	6
	2951	2958	2965	2972	2979	2985	2992	2999	3006	3013	1	1	2	3	3	4	5	5	6
	3020	3027	3034	3041	3048	3055	3062	3069	3076 3148	3083 3155	1	1	22	3 3	44	4 4	55	66	6
	3090 3162	3097 8170	3105 3177	3112 3184	3119 3192	3126 3199	3133 3206	3141 3214	3148	3100	1	1	2	8	4	4	5	6	7

ANTILOGARITHMS.

	0	1	2	3	4	5	6	7	8	9		N	Iea	n]	Diff	ere	nce	g.	No. Co
		-			-	· ·					1	2	3	4	5	6	7	8	9
·50 ·51 ·52 ·53 ·54 ·55	3162 3236 3311 3388 3467 3548	3170 3243 3319 3396 3475 3556	3177 3251 3327 3404 3483 3565	3184 3258 3334 3412 3491 3573	3192 3266 3342 3420 3499 3581	3199 3273 3350 3428 3508 3569	3206 3281 3357 3436 3516 3597	3214 3289 3365 3443 3524 3606	3221 3296 3373 3451 3532 3614	3228 3304 3381 3459 3540 3622	1 1 1 1 1 1	122222	~~~~~	3 3 3 3 3 3 3	444444	455555	555666	6 6 6 6 6 6 7	777777
·56 ·57 ·58 ·59 ·60	3631 3715 3802 3890 3981	3639 3724 3811 3899 3990	3648 3733 3819 3908 3999	3656 3741 3828 3917 4009	3664 3750 3837 3926 4018	3673 3758 3846 3936 4027	3681 3767 3855 3945 4036	3690 3776 3864 3954 4046	3698 3784 3873 3963 4055	3707 3793 3882 3972 4064	1 1 1 1 1	222222	00 00 00 00	33444	44455	555550	6666	77777	00 00 00 00
·61 ·62 ·63 ·64 ·65	4074 4169 4266 4365 4467	4083 4178 4276 4375 4477	4093 4188 4285 4385 4487	4102 4198 4295 4395 4498	4111 4207 4305 4406 4508	4121 4217 4315 4416 4519	4130 4227 4325 4426 4529	4140 4236 4335 4436 4539	4150 4246 4345 4446 4350	4159 4256 4355 4457 4560	1 1 1 1 1	~~~~	3 3 3 3 3 3	44444	55555	6 6 6 6 6	77777	8 8 8 8 8	00000
·66 ·67 ·68 ·69 ·70	4571 4677 4786 4898 5012	4581 4688 4797 4909 5023	4592 4699 4808 4920 5035	4603 4710 4819 4932 5047	4613 4721 4831 4943 5058	4624 4732 4842 4955 5070	4634 4742 4853 4966 5082	4645 4753 4864 4977 5093	4656 4764 4875 4989 5105	4667 4775 4887 5000 5117	1 1 1 1 1	22222	00 00 00 00 44	44455	55666	617777	788888	99999	10 10 10 10 10
·71 ·72 ·73 ·74 ·75	5129 5248 5370 5495 5623	5140 5260 5383 5508 5636	5152 5272 5395 5521 5649	5164 5284 5408 5534 5662	5176 5297 5420 5546 5675	5188 5309 5433 5559 5689	5200 5321 5445 5572 5702	5212 5333 5458 5585 5715	5224 5346 5470 5598 5723	5236 5358 5483 5610 5741	111111	22333	44444	55555	6 6 6 6 7	1-1-00 00 00	899999	10 10 10	11 11 11 12 12
·76 ·77 ·78 ·79 ·80	5754 5888 6026 6166 6310	5768 5902 6039 6180 6324	5781 5916 6053 6194 6339	5794 5929 6067 6209 6353	5808 5943 6081 6223 6368	5821 5957 6095 6237 6383	5834 5970 6109 6252 6397	5848 5984 6124 6266 6412	5861 5998 6138 6281 6427	$5875 \\ 6012 \\ 6152 \\ 6295 \\ 6442 \\$	1 1 1 1 1	000000	44444	5 5 6 6 6	77777	888999	9 10 10 10 10	11 11 11 11 11 12	12 13 13
·81 ·82 ·83 ·83 ·84 ·85	6457 6607 6761 6918 7079	6471 6622 6776 6934 7096	6486 6637 6792 6950 7112	6501 6653 6808 6966 7129	6516 6668 6823 6982 7145	6531 6683 6839 6998 7161	6546 6699 6855 7015 7178	6561 6714 6871 7031 7194	6577 6730 6887 7047 7211	6592 6745 6902 7063 7228	222222	00 00 00 00	555555	6 6 6 7		9 9 9 10 10	11 11 11 11 11 12	12 13 13	14 14 14 15 15
·86 ·87 ·88 ·89 ·90	7244 7413 7586 7762 7943	7261 7430 7603 7780 7962	7278 7447 7621 7798 7980	7295 7464 7638 7816 7998	7311 7482 7656 7834 8017	7328 7499 7674 7852 8035	7345 7516 7691 7870 8054	7362 7534 7709 7889 8072	7379 7551 7727 7907 8091	7396 7568 7745 7925 8110	222222	33444	56556	777777	999	10 10 11 11 11	12 12 12 13 13	14	
·91 ·92 ·93 ·93 ·94 ·95	8128 8318 8511 8710 8913	8147 8337 8531 8730 8933	8166 8356 8551 8750 8954	8185 8375 8570 8770 8974	8204 8395 8590 8790 8995	8222 8414 8610 8810 9016	8241 8433 8630 8831 9036	8260 8453 8650 8851 9057	8279 8472 8670 8872 9078	8299 8492 8690 8892 9099	22222	44444	666666	88	10 10	12 12	14 14 14	15 15 16 16 16	17 17 18 18 19
·96 ·97 ·98 ·93	9120 9333 9550 9772	9141 9354 9572 9795	9162 9376 9594 9817	9183 9397 9616 9840	9204 9419 9638 9863	9226 9441 9661 9886	9247 9462 9683 9908	9268 9484 9705 9931	9290 9506 9727 9954	9311 9528 9750 9977	22222	4445	6777	99					19 20 20 20

NAPIERIAN LOGARITHMS

of Numbers from 0.1 to 5.09; with Subsidiary Table.

Number.	0	1	2	3	4	5	6	7	8	9		Sub	osidia	ry Ta	able		
Num	0		4	0	*	0	0	ſ	0	9	No.	Nap.	Log.	No.	Na	p. L	.og.
0·1 0·2 0·3 0·4 0·5	3.6974 2.3906 .7960 1.0837 3068	7927 4393 8288 1084 3267	8797 4859 8606 1325 3461	9598 5303 8913 1560 3651	0339 5729 9212 1790 3838	1029 6137 9502 2015 4022	1674 6529 9783 2235 4202	2280 6907 0057 2450 4379	2852 7270 0324 2660 4553	3393 7621 0584 2866 4724	6 7 8 9 10 20 30	1.9 2.0 2.1 2.3 2.9	918 459 794 972 026 957 012	40 50 60 70 80 90 100	3 4 4 4 4 4	·688 ·912 ·094 ·248 ·382 ·499 ·605	20 43 85 20 98
0.6	4892 6433	5057 6575	5220 6715	5380 6853	5537 6989	5692 7123	5845 7256	5995 7386	6143 7515	6289 7643		Mea	n Di	ffere	nces		
0.8 0.9 1.0	7769 8946 0.0000	7893 9057 0100	8015 9166 0198	8137 9274 0296	8256 9381 0392	8375 9487 0488	8492 9592 0583	8607 9695 0677	8722 9798 0770	8835 9899 0862	1 :	2 3	4 1	5 6	7	8	9
1·1 1·2 1·3 1·4 1·5	0953 1823 2624 8365 4055	1044 1906 2700 3436 4121	1133 1989 2776 3507 4187	1222 2070 2852 3577 4253	1310 2151 2927 3646 4318	1398 2231 3001 3716 4383	1484 2311 3075 3784 4447	1570 2390 3148 3853 4511	1655 2469 3221 3920 4574	1740 2546 3293 3988 4637	9 1 8 1 7 1 7 1 6 1	6 24 5 22 4 21	35 4 32 4 30 3 28 3 26 3	0 48 7 45 5 41	61 56 52 48 45	70 64 59 55 52	78 72 67 62 58
1.6 1.7 1.8 1.9 2.0	4700 5306 5878 6419 6931	4762 5365 5933 6471 6981	4824 5423 5988 6523 7031	4886 5481 6043 6575 7080	4947 5539 6098 6627 7129	5596 6152 6678 7178	5068 5653 6206 6729 7227	5128 5710 6259 6780 7275	5188 5766 6313 6831 7324	5247 5822 6366 6881 7372	6 1 6 1 5 1 5 1 5 1	1 17 1 16	24 3 24 2 22 2 20 2 20 2	9 34 7 32 6 31	42 40 38 36 34	48 46 43 41 39	55 52 49 46 44
2·1 2·2 2·3 2·4 2·5	7419 7885 8329 8755 9163	7467 7930 8372 8796 9203	7514 7975 8416 8838 9243	7561 8020 8459 8879 9282	7608 8065 8502 8920 9322	7655 8109 8544 8961 9361	7701 8154 8587 9002 9400	7747 8198 8629 9042 9439	7793 8242 8671 9083 9478	7839 8286 8713 9123 9517	4 4 4	9 14 9 13 9 13 8 12 8 12	19 2 18 2 17 2 16 2 16 2	2 27 1 26 0 24	33 31 30 29 27	37 36 34 33 31	42 40 38 37 35
2.6 2.7 2.8 2.9 3.0	9555 9933 1.0296 0647 0986	9594 9969 0332 0682 1019	9632 0006 0367 0716 1053	9670 0043 0403 0750 1086	9708 0080 0438 0784 1119	9746 0116 0473 0818 1151	9783 0152 0508 0852 1184	9821 0188 0543 0886 1217	9858 0225 0578 0919 1249	9895 0260 0613 0953 1282	4 4	8 11 7 11 7 11 7 10 7 10 7 10	15 1 15 1 14 1 14 1 13 1	8 22 8 21	26 26 25 24 23	30 29 28 27 26	34 33 32 31 30
3·1 3·2 3·3 3·4 3·5	1314 1632 1939 2238 2528	1346 1663 1969 2267 2556	1378 1694 2000 2296 2585	1410 1725 2030 2326 2613	1442 1756 2060 2355 2641	1474 1787 2090 2384 2669	1506 1817 2119 2413 2698	1537 1848 2149 2442 2726	1569 1878 2179 2470 2754	1600 1909 2208 2499 2782	3 3 3	6 10 6 9 6 9 6 9 6 8	$ \begin{array}{r} 13 \\ 12 \\ 12 \\ 12 \\ 12 \\ 12 \\ 11 \\ 11 \\ 1 \end{array} $	5 18 5 18 4 17	22 21 21 20 20	25 25 24 23 22	29 28 27 26 25
3.6 3.7 3.8 3.9 4.0	2809 3083 3350 3610 3863	2837 3110 3376 3635 3888	2865 3137 3403 3661 3913	2892 3164 3429 3686 3938	2920 3191 3455 3712 3962	2947 3218 3481 3737 3987	2975 3244 3507 3762 4012	3002 3271 3533 3788 4036	3029 3297 3558 3813 4061	3056 3324 3584 3838 4085	3 3 3	5 8 8 8 8 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	11 1 11 1 10 1 10 1 10 1	3 16 3 16 3 15	19 19 18 18 18	22 21 21 20 20	25 24 23 23 22
4·1 4·2 4·3 4·4 4·5	4110 4351 4586 4816 5041	4134 4375 4609 4839 5063	4159 4398 4633 4861 5085	4183 4422 4656 4884 5107	4207 4446 4679 4907 5129	4231 4469 4702 4929 5151	4255 4493 4725 4951 5173	4279 4516 4748 4974 5195	4303 4540 4770 4996 5217	4327 4563 4793 5019 5239	2 2 2	5 7 7 7 7 4 7	10 1 9 1 9 1 9 1 9 1 9 1	$ \begin{array}{c} 2 & 14 \\ 1 & 14 \\ 1 & 13 \end{array} $	16 16 16	19 19 18 18 18	22 21 21 20 20
4.6 4.7 4.8 4.9 5.0	5261 5476 5686 5892 6094	5282 5497 5707 5913 6114	5304 5518 5728 5933 6134	5326 5539 5748 5953 6154	5347 5560 5769 5974 6174	5369 5581 5790 5994 6194	5390 5602 5810 6014 6214	5412 5623 5831 6034 6233	5433 5644 5851 6054 6253	5454 5665 5872 6074 6273	2	4 6 4 6 4 6 4 6 4 6	91 81 81 81 81	1 13 0 12 0 12	15 14 14	17 17 16 16 16	19 19 19 18 18

LOGARITHMS OF SINES OF SMALL ARCS.

				the second			A ILLA				ean Diff.	to	set get	ddit o Log corr f Tan	s. of	Sine
Arc	0'	1′	2′	3′	4'	5′	6′	7'	8′	9′	Mea	0′	2′	4′	6′	8'
0° 0′	<u>4</u> ·	4637	7648	9408	0658	1627	2419	3088	3668	4 180		0	0	0	0	0
10	3·4637 7648	5051 7859	5429	5777	6099	6398	6678	6942	7190	7425		0	0	0	0	-0
20' 30'	9408	9551	8061 9689	8255 9822	8439 9952	8617	8787 0200	8951	9109 0435	9261 0548		0	1	0	0	0
40	2.0658	0765	0870	0972	1072	1169	1265	1358	1450	1539		Ō	0	0	0	0
50'	1627	1713	1797	1880	1961	2041	2119	2196	2271	2346		0	1	1	1	i
1° 0' 10'	2419 3088	2490 3150	2561 3210	2630 3270	2699 3329	2766	2832 3445	2898 3502	2962 3558	3025 3613	67 58	0 1	11	1	1	1
20	3668	3722	3775	3828	3880	3931	3982	4032	4082	4131	51	i	1	1	i	i
30' 40'	4179 4637	4227 4680	4275 4723	4322 4765	4368	4414 4848	4459 4890	4504 4930	4549 4971	4593 5011	46	21	12	22	22	22
50	5050	5090	5129	5167	5206	4040 5243	5281	5318	5355	5392	38	3	2	2	2	3
2° 0'	5428	5464 5809	5500 5842	5535	5571 5907	5605	5640 5972	5674 6003	5708 6035	5742 6066	35 32	3	3	24	33	33
10' 20'	5776 6097	6128	6159	5875 6189	6220	5939 6250	6279	6309	6339	6368	30	4	4	43	4	4
30'	6397	6426 6704	6454	6483	6511	6539	6567	6595	6622	6650	28	4	5	4	4	5
40' 50'	6677 6940	6704 6965	6731 6991	6758 7016	6784 7041	6810 7066	6837 7090	6863 7115	6889 7140	6914 7164	26 25	5 5	5 5	5	5 6	5 5
3° 0'	7188	7212	7236	7260	7283	7307	7330	7354	7377	7400	23	6	6	7	7	6
10' 20'	7423	7445 7667	7468 7688	7491 7710	7513 7731	7535	7557	7580	7602	7623	22	67	78	78	8	78
30	7857	7877	7898	7918	7939	7959	7979	7999	8019	8039	20	8	8	8	9	9
40' 50'	8059 8251	8078 8270	8098 8289	8117 8307	8137 8326	8156 8345	8175 8363	8194 8381	8213 8400	8232 8418	19 18	8 10	9 10	9 10	10 10	10 10
4° 0'	8436	8454	8472	8490	8508	8525	8543	8560	8578	8595	18	10	11	10	11	11
10' 20'	8613 8783	8630 8799	8647 8816	8665 8833	8682 8849	8699 8865	8716	8733	8749 8914	8766 8930	17 16	11 12	12 13	12 13	12 13	13 13
30'	8946	8962	8978	8994	9010	9026	9042	9057	9073	9089	16	14	14	14	14	14
40' 50'	9104 9256	9119 9271	9135 9286	9150 9301	9166 9315	9181 9330	9196 9345	9211 9359	9226 9374	9241 9388	15 15	14 16	15 16	14 16	15 16	15 16
5° 0'	9403	9417	9432	9446	9460	9475	9489	9503	9517	9531	14	17	17	17	17	17
10' 20'	9545 9682	9559 9696	9573 9709	9587 9723	9601 9736	9614 9750	9628 9763	9642 9776	9655 9789	9669 9803	14	18 19	18 20	18 20	18 19	19 20
30	9816	9829	9842	9855	9868	9881	9894	9907	9919	9932	13	20	20	20	21	21
40'	_ 9945	9958	9970	9983	9996	0008	0021	0033	0046	0058	13	21	22	21	22	22
50'	1.0070	0083	0095	0107	0120	0132	0144	0156	0168	0180	12	23	23	23	23	24
6° 0′ 10′	0192 0311	0204 0323	0216 0334	0228	0240 0357	0252 0369	0264 0380	0276	0287 0403	0299 0415	12 12	24 25	24 26	25 26	25 27	25 27
20'	0426	0438	0449	0460	0472	0483	0494	0505	0516	0527	11	27	27	27	27	28
30' 40'	0539 0648	0550 0659	0561 0670	0572	0583	0594	0605	0616	0626	0637	11 11	28 30	28 29	28 30	28 31	30 30
50'	0755	0765	0776	0786	0797	0807	0818	0828	0838	0849	10	31	31	31	31	33
7° 0' 10'	0859 0961	0869 0971	0879 0981	0890	0900	0910	0920 1020	0930	0940	0951 1050	10 10	32 34	33 34	33 34	34 35	34 36
20	1060	1070	1080	1089	1001	1109	1118	1128	1138	1147	10	36	36	36	37	37
30'	1157	1167	1176	1186	1195	1205	1214	1224	1233	1242 1336	10	37	38.	38 40	38	39 41
40' 50'	1252	1261	1271 1363	1280 1372	1289 1381	1299 1390	1308 1399	1317	1326 1418	1336	99	39 40	39 41	40 42	40 42	41 42

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LOGARITHMS OF SINES.

Radian.	Degree.	0'	6'	12'	18′	24'	30'	36'	42	48'	54'	Mea	n Ľ	Diffe	rend	ces.
Rad	Deg	0°•0	0°•1	0° ·2	0° • 3	0°·4	0^.5	0°-8	0°.7	0° ·8	0°·9	1'	2'	3′	4'	5′
·0000 ·0175 ·0349 ·0524 ·0698 ·0873	0 1 2 3 4 5	-∞ 2·2419 11·5428	3-2419 2832 5640 7330 8543 9489	5429 3210 5842 7468 8647 9573	7190 3558 6035 7602 8749 9655	8439 3880 6220 7731 8849 9736	9408 4179 6397 7857 8946 9816	0200 4459 6567 7979 9042 9894	0870 4723 6731 8098 9135 9970	1450 4971 6889 8213 9226 0046	1961 5206 7041 8326 9315 0120	16 13	32 26	4 8 3 9	64 52	80 65
·1047 ·1222 ·1396 ·1571 ·1745	6 7 8 9 10	1.0192 1.0859 1.1436 1.1943 1.2397	0264 0920 1489 1991 2439	0334 0981 1542 2038 2482	0403 1040 1594 2085 2524	0472 1099 1646 2131 2565	0539 1157 1697 2176 2606	0605 1214 1747 2221 2647	0670 1271 1797 2266 2687	0734 1326 1847 2310 2727	0797 1381 1895 2353 2767	11 10 8 8 7	22 19 17 15 14	33 29 25 23 20	44 38 34 30 27	55 48 42 38 34
•1920 •2094 •2269 •2443 •2618	11 12 13 14 15	"*2806 "*3179 "*3521 "*3837 "*4130	2845 3214 8554 3867 4158	2883 3250 3586 3897 4186	2921 3284 3618 3927 4214	2959 3319 3650 3957 4242	2997 3353 3682 3986 4269	3034 3387 3713 4015 4296	3070 3421 3745 4044 4323	8107 3455 3775 4073 4350	3143 3488 3806 4102 4377	6 6 5 5 5	12 11 11 10 9	19 17 16 15 14	25 23 21 20 18	31 28 26 24 23
•2793 •2967 •3142 •3316 •3491	16 17 18 19 20	11 *4403 11 *4659 11 *4900 11 *5126 11 *5341	4430 4684 4923 5148 5361	4456 4709 4946 5170 5382	4482 4733 4969 5192 5402	4508 4757 4992 5213 5423	4533 4781 5015 5235 5443	4559 4805 5037 5256 5463	4584 4829 5060 5278 5484	4609 4853 5082 5299 5504	4634 4876 5104 5320 5523	4448	98877	13 12 11 11 10	17 16 15 14 14	21 20 19 18 17
•3665 •3840 •4014 •4189 •4363	21 22 23 24 25	"*5543 "*5736 "*5919 "*6093 "*6259	5563 5754 5937 6110 6276	5583 5773 5954 6127 6292	5602 5792 5972 6144 6308	5621 5810 5990 6161 6324	5641 5828 6007 6177 6340	5660 5847 6024 6194 6356	5679 5865 6042 6210 6371	5698 5883 6059 6227 6387	5717 5901 6076 6243 6403	00 00 00 00 00 00 00	6 6 6 6 5	10 9 9 8 8	13 12 12 11 11	16 15 15 14 13
•4538 •4712 •4887 •5061 •5236	26 27 28 29 30	"*6418 "*6570 "*6716 "*6856 "*6990	6434 6585 6730 6869 7003	6449 6600 6744 6883 7016	6465 6615 6759 6896 7029	6480 6629 6773 6910 7042	6495 6644 6787 6923 7055	6510 6659 6801 6937 7068	6526 6673 6814 6950 7080	6541 6687 6828 6963 7093	6556 6702 6842 6977 7106	32222	55544	87776	10 10 9 9	13 12 12 12 11
•5411 •5585 •5760 •5934 •6109	31 32 33 34 35	".*7118 ".*7242 ".*7361 ".*7476 ".*7586	7131 7254 7373 7487 7597	7144 7266 7384 7498 7607	7156 7278 7396 7509 7618	7168 7290 7407 7520 7629	7181 7302 7419 7531 7640	7193 7314 7430 7542 7650	7205 7326 7442 7553 7661	7218 7338 7453 7564 7671	7230 7849 7464 7575 7682	2 2 2 2 2 2 2 2	444444	6 6 6 6 6 5	88877	10 10 10 9 9
•6283 •6458 •6632 •6807 •6981	36 37 38 39 40	"*7692 "*7795 "*7893 "*7989 "*8081	7703 7805 7903 7998 8090	7713 7815 7913 8007 8099	7723 7825 7922 8017 8108	7734 7835 7932 8026 8117	7744 7844 7941 8035 8125	7754 7854 7951 8044 8134	7764 7864 7960 8053 8143	7774 7874 7970 8063 8152	7785 7884 7979 8072 8161	2 2 2 2 2 2 2 1	00 00 00 00 00	55554	77666	000007
•7156 •7330 •7505 •7679 •7854	41 42 43 44 45	"*8169 "*8255 "*8338 "*8418 "*8495	8178 8264 8346 8426 8502	8187 8272 8354 8433 8510	8195 8280 8362 8441 8517	8204 8289 8370 8449 8525	8213 8297 8378 8457 8532	8221 8305 8386 8464 8540	8230 8313 8394 8472 8547	8238 8322 8402 8480 8555	8247 8330 8410 8487 8562	1 1 1 1 1 1	00 00 00 00 0 1	44444	66555	77766

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LOGARITHMS OF SINES.

lan.	ree.	o	6'	12'	18'	24'	30'	36'	42'	48'	54'	Me	an I	Diffe	renc	es.
Radian.	Degree.	0°.0	0°·1	0°•2	0°.3	0°•4	0°.2	0°.6	0°.7	0°.8	0°•9	ľ	2'	3′	4'	5'
•785 •803 •820 •838 •855 •873	45 46 47 48 49 50	1.8495 8569 8641 8711 8778 8843	8502 8577 8648 8718 8784 8784 8849	8510 8584 8655 8724 8791 8855	8517 8591 8662 8731 8797 8862	8525 8598 8669 8738 8804 8868	8532 8606 8676 8745 8810 8874	8540 8613 8683 8751 8817 8880	8547 8620 8690 8758 8823 8887	8555 8627 8697 8765 8830 8893	8562 8634 8704 8771 8836 8899	1 1 1 1 1 1 1	2222222	4 4 3 3 3 3 3	555444	6 6 6 6 6 5 5
-890 -908 -925 -942 -960	51 52 53 54 55	11*8905 11*8965 11*9023 11*9080 11*9134	8911 8971 9029 9085 9139	8917 8977 9035 9091 9144	8923 8983 9041 9096 9149	8929 8989 9046 9101 9155	8935 8995 9052 9107 9160	8941 9000 9057 9112 9165	8947 9006 9063 9118 9170	8953 9012 9069 9123 9175	8959 9018 9074 9128 9181	1 1 1 1 1	22222	00 00 00 00 00	44443	55554
*977 *995 1.012 1.030 1.047	56 57 58 59 60	11*9186 11*9236 11*9284 11*9331 11*9375	9191 9241 9289 9335 9380	9196 9246 9294 9340 9384	9201 9251 9298 9344 9388	9206 9255 9303 9349 9393	9211 9260 9308 9353 9397	9216 9265 9312 9358 9401	9221 9270 9317 9362 9406	9226 9275 9322 9367 9410	9231 9279 9326 9371 9414	1 1 1 1 1	2 2 2 1 1	3 2 2 2 2 2	න න න න	444444
1.065 1.082 1.100 1.117 1.134	61 62 63 64 65	"*9418 "*9459 "*9499 "*9537 "*9573	9422 9463 9503 9540 9576	9427 9467 9507 9544 9580	9431 9471 9510 9548 9583	9435 9475 9514 9551 9587	9439 9479 9518 9555 9590	9443 9483 9522 9558 9594	9447 9487 9525 9562 9597	9451 9491 9529 9566 9601	9455 9495 9533 9569 9604	1 1 1 1 1	1 1 1 1 1	222222	33522	3 3 3 3 3 3
1.152 1.169 1.187 1.204 1.222	66 67 68 69 70	11 9607 11 9640 11 9672 11 9702 11 9730	9611 9643 9675 9704 9733	9614 9647 9678 9707 9735	9617 9650 9681 9710 9738	9621 9653 9684 9713 9741	9624 9656 9687 9716 9743	9627 9659 9690 9719 9746	9631 9662 9693 9722 9749	9634 9666 9696 9724 9751	9637 9669 9699 9727 9754	1 1 0 0 0	1 1 1 1 1 1 1	2 2 1 1 1	22222	33222
1·239 1·257 1·274 1·292 1·309	71 72 73 74 75	11*9757 11*9782 11*9806 11*9828 11*9828 11*9849	9759 9785 9808 9831 9851	9762 9787 9811 9833 9853	9764 9789 9813 9835 9855	9767 9792 9815 9837 9857	9770 9794 9817 9839 9859	9772 9797 9820 9841 9861	9775 9799 9822 9843 9863	9777 9801 9824 9845 9865	9780 9804 9826 9847 9867	0 0 0 0 0	1 1 1 1 1	1 1 1 1 1	2 2 2 1 1	2 2 2 2 2 2 2 2
1·326 1·344 1·361 1·379 1·396	76 77 78 79 80	"*9869 "\$9887 "\$9904 "\$9919 "*9934	9871 9889 9906 9921 9935	9873 9891 9907 9922 9936	9875 9892 9909 9924 9937	9876 9894 9910 9925 9939	9878 9896 9912 9927 9940	9880 9897 9913 9928 9941	9882 9899 9915 9929 9943	9884 9901 9916 9931 9944	9885 9902 9918 9932 9945	000000	1 1 1 0 0	1 1 1 1 1	1 1 1 1 1	2 1 1 1 1
1·414 1·431 1·449 1·466 1·484	81 82 83 84 85	" 9946 " 9958 " 9968 " 9976 " 9983	9947 9959 9968 9977 9984	9949 9960 9969 9978 9985	9950 9961 9970 9978 9985	9951 9962 9971 9979 9986	9952 9963 9972 9980 9987	9953 9964 9973 9981 9987	9954 9965 9974 9981 9988	9955 9966 9975 9982 9988	9956 9967 9975 9983 9989	000000	000000	1 1 0 0 0	1 1 1 0 0	1 1 1 1 0
1.501 1.518 1.536 1.553 1.571	86 87 88 89 90	11 ^{•9989} 11 ^{•9994} 11 ^{•9997} 11 ^{•9999} 0 [•] 0000	9990 9994 9998 9999	9990 9995 9998 0000	9991 9995 9998 0000	9991 9996 9998 0000	9992 9996 9999 0000	9992 9996 9999 0000	9993 9996 9999 0000	9993 9997 9999 0000	9994 9997 9999 0000	0 0 0 0	0 0 0 0	0000	0 0 0 0	0 0 0 0
	I	Radian =	0017	0035	0052	0070	0087	0105	0122	0140	0157	Tak.		2-13		

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LOGARITHMS OF COSINES.

ian.	ree.	O'	6'	12'	18'	24'	30'	36'	42'	48'	54'	Me	an I	Diffe	rend	ces.
Radian.	Degree.	0.0	0°·1	0°•2	0°·3	0°•4	0°-5	0°•6	0°.7	0°.8	0°•9	1'	2′	3'	4′	5'
•0000 •0175 •0349 •0524 •0698 •0873	0 1 2 3 4 5	0.0000 1.9999 1.9997 1.9994 1.9989 1.9983	0000 9999 9997 9994 9989 9983	0000 9999 9997 9993 9988 9988	0000 9999 9996 9993 9988 9981	0000 9999 9996 9992 9987 9981	0000 9999 9996 9992 9987 9980	0000 9998 9996 9991 9986 9979	0000 9998 9995 9991 9985 9978	0000 9998 9995 9990 9985 9978	9999 9998 9994 9990 9984 9977	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 0	0000000	0 0 0 0 0 1
·1047 ·1222 ·1396 ·1571 ·1745	6 7 8 9 10	11*9976 11*9968 11*9958 11*9956 11*9934	9975 9967 9956 9945 9932	9975 9966 9955 9944 9931	9974 9965 9954 9943 9929	9973 9964 9953 9941 9928	9972 9963 9952 9940 9927	9971 9962 9951 9939 9925	9970 9961 9950 9937 9924	9969 9960 9949 9936 9922	9968 9959 9947 9935 9921	0 0 0 0 0	0 0 0 0 0	0 1 1 1 1	111111	1 1 1 1
·1920 ·2094 ·2269 ·2443 ·2618	11 12 13 14 15	"9919 "904 "9887 "9869 "9869	9918 9902 9885 9867 9847	9916 9901 9384 9365 9845	9915 9899 9882 9863 9843	9913 9897 9880 9861 9841	9912 9896 9878 9859 9839	9910 9894 9876 9857 9837	9909 9892 9875 9855 9835	9907 9891 9873 9853 9833	9906 9889 9871 9851 9831	0 0 0 0 0	1 1 1 1 1 1	1 1 1 1 1	1 1 1 1	1 1 2 2 2
•2793 •2967 •3142 •3316 •3491	16 17 18 19 20	11*9828 11*9806 11*9782 11*9757 11*9730	9826 9804 9780 9754 9727	9824 9801 9777 9751 9724	9822 9799 9775 9749 9722	9820 9797 9772 9746 9719	9817 9794 9770 9743 9716	9815 9792 9767 9741 9713	9813 9789 9764 9738 9710	9811 9787 9762 9735 9707	9808 9785 9759 9733 9704	0 0 0 0	111111	111111	22222	22222
·3665 ·3840 ·4014 ·4189 ·4363	21 22 23 24 25	11*9702 11*9672 11*9640 11*9607 11*9573	9699 9669 9637 9604 9569	9696 9666 9634 9601 9566	9693 9662 9631 9597 9562	9690 9659 9627 9594 9558	9687 9656 9624 9590 9555	9684 9653 9621 9587 9551	9681 9650 9617 9583 9548	9678 9647 9614 9580 9544	9675 9643 9611 9576 9540	0 1 1 1 1	111111	12222	22222	23333
•4538 •4712 •4837 •5061 •5236	26 27 23 29 30	"*9537 "*9499 "*9459 "*9418 "*9375	9533 9495 9455 9414 9371	9529 9491 9451 9410 9367	9525 9487 9447 9406 9362	9522 9483 9443 9401 9358	9518 9479 9439 9397 9353	9514 9475 9435 9393 9349	9510 9471 9431 9388 9344	9507 9467 9427 9384 9340	9503 9463 9422 9380 9335	1 1 1 1 1	1 1 1 1 1	22222	****	3 3 3 3 4 4
•5411 •5585 •5760 •5934 •6109	31 32 33 34 35	"9331 "9284 "9236 "9186 "9134	9326 9279 9231 9181 9128	9322 9275 9226 9175 9123	9317 9270 9221 9170 9118	9312 9265 9216 9165 9112	9308 9260 9211 9160 9107	9303 9255 9206 9155 9101	9298 9251 9201 9149 9096	9294 9246 9196 9144 9091	9289 9241 9191 9139 9085	1 1 1 1	2 2 2 2 2 2 2 2	223333	33334	4 4 4 4 5
•6283 •6458 •6632 •6807 •6981	36 37 33 39 40	11 ⁻⁹⁰⁸⁰ 11 ⁻⁹⁰²³ 11 ⁻⁸⁹⁶⁵ 11 ⁻⁸⁹⁰⁵ 11 ⁻⁸⁸⁴³	9074 9018 8959 8899 8836	9069 9012 8953 8893 8893 8830	9063 9006 8947 8887 8823	9057 9000 8941 8880 8817	9052 8995 8935 8874 8810	9046 8989 8929 8868 8868 8804	9041 8983 8923 8862 8797	9035 8977 8917 8855 8791	9029 8971 8911 8849 8784	1 1 1 1 1	222222	හ හ හ හ හ	44444	55555
·7156 ·7330 ·7505 ·7679 ·7854	41 42 43 44 45	"*8778 "*8711 "*8641 "*8569 "*8495	8771 8704 8634 8562 8487	8765 8697 8627 8555 8480	8758 8690 8620 8547 8472	8751 8683 8613 8540 8464	8745 8676 8606 8532 8457	8738 8669 8598 8525 8449	8731 8662 8591 8517 8441	8724 8655 8584 8510 8433	8718 8648 8577 8502 8426	1 1 1 1 1	22223	3 3 4 4 4	55555	6 6 6 6 6
1	E	Radian =	= 0017	0035	0052	0070	0087	0105	0122	0140	0157				1	

LOGARITHMS OF COSINES.

Radian.	Degree.	or	6'	12'-	18'	24'	30'	36'	42'	48'	54'	M	ean I	Diffe	renc	ees.
Rad	Deg	0° 0	0°•1	0°•2	0°•3	0°•4	0°.2	0° ·6	0°•7	0°•8	0°•9	ľ	2'	3′	4′	5'
*785 *803 *820 *838 *855 *873	45 46 47 48 49 50	1.8495 8418 8338 8255 8169 8081	8487 8410 8330 8247 8161 8072	8480 8402 8322 8238 8152 8063	8472 8394 8313 8230 8143 8053	8464 8386 8305 8221 8134 8044	8457 8378 8297 8213 8125 8035	8449 8370 8289 8204 8117 8026	8441 8362 8280 8195 8108 8017	8433 8354 8272 8187 8099 8007	8426 8346 8264 8178 8090 7998	1 1 1 1 2	8000000	44445	556666	67778
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·977 ·995 1·012 1·030 1·047	56 57 58 59 60	n*7476 n*7361 n*7242 n*7118 n*6990	7464 7349 7230 7106 6977	7453 7338 7218 7093 6963	7442 7326 7205 7080 6950	7430 7314 7193 7068 6937	7419 7302 7181 7055 6923	7407 7290 7168 7042 6910	7396 7278 7156 7029 6896	7384 7266 7144 7016 6883	7373 7254 7131 7003 6869	222222	44444	6 6 6 7	888999	10 10 10 11 11
1.065 1.082 1.100 1.117 1.134	61 62 63 64 65	"*6856 "*6716 "*6570 "*6418 "*6259	6842 6702 6556 6403 6243	6828 6687 6541 6387 6227	6814 6673 6526 6371 6210	6801 6659 6510 6356 6194	6787 6644 6495 6340 6177	6773 6629 6480 6324 6161	6759 6615 6465 6308 6144	6744 6600 6449 6292 6127	6730 6585 6434 6276 6110	223333	55556	77888	9 10 10 11 11	12 12 13 13 14
1·152 1·169 1·187 1·204 1·222	66 67 68 69 70	"*6093 "*5919 "*5736 "*5543 "*5341	6076 5901 5717 5523 5320	6059 5883 5698 5504 5299	6042 5865 5679 5484 5278	6024 5847 5660 5463 5256	6007 5828 5641 5443 5235	5990 5810 5621 5423 5213	5972 5792 5602 5402 5192	5954 5773 5583 5382 5170	5937 5754 5563 5361 5148	33334	6 6 7 7	9 9 10 10 11	12 12 13 14 14	15 15 16 17 18
1·239 1·257 1·274 1·292 1·309	71 72 73 74 75	"*5126 "*4900 "*4659 "*4403 "*4130	5104 4876 4634 4377 4102	5082 4853 4609 4350 4073	5060 4829 4584 4323 4044	5037 4805 4559 4296 4015	5015 4781 4533 4269 3986	4992 4757 4508 4242 3957	4969 4733 4482 4214 3927	4946 4709 4456 4186 3897	4923 4684 4430 4158 3867	44455	8 8 9 9 9	11 12 13 14 15	15 16 17 18 20	19 20 21 23 24
1·326 1·344 1·361 1·379 1·396	76 77 78 79 80	"*3837 "*3521 "*3179 "*2806 "*2397	3806 3488 3143 2767 2353	3775 3455 3107 2727 2310	3745 3421 3070 2687 2266	3713 3387 3034 2647 2221	3682 3353 2997 2606 2176	3650 3319 2959 2565 2131	3618 3284 2921 2524 2085	3586 3250 2883 2482 2038	3554 3214 2845 2439 1991	56678	11 11 12 14 15	16 17 19 20 23	21 23 25 27 30	26 28 31 34 38
1.414 1.431 1.449 1.466 1.484	81 82 83 84 85	"*1943 "*1436 "*0859 "*0192 2*9403	1895 1381 0797 0120 9315	1847 1326 0734 0046 9226	1797 1271 0670 9970 9135	1747 1214 0605 9894 9042	1697 1157 0539 9816 8946	1646 1099 0472 9736 8849	1594 1040 0403 9655 8749	1542 0981 0334 9573 8647	1489 0920 0264 9489 8543	8 10 11 13 16	17 19 22 26 32	25 29 33 39 48	34 38 44 52 64	42 48 55 65 80
1.501 1.518 1.536 1.553 1.571	86 87 88 89 90	"*8436 "*7188 "*5428 "*2419 — ∞	8326 7041 5206 1961	8213 6889 4971 1450	8098 6731 4723 0870	7979 6567 4459 0200	7857 6397 4179 9408	7731 6220 3880 8439	7602 6035 3558 7190	7468 5842 3210 5429	7330 5640 2832 2419		in the state	mal hard to		

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LOGARITHMS OF TANGENTS.

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Radian.	Deg	0° 0	0° • 1	0°·2	0°•3	0°•4	0°•5	0°•6	0°•7	0°•8	0°•9	1′	2'	3'	4'	5′
*0000 *0175 *0349 *0524 *0698 *0873	0 1 2 3 4 5		3·2419 2833 5643 7337 8554 9506	5429 3211 5845 7475 8659 9591	7190 3559 6038 7609 8762 9674	8439 3881 6223 7739 8862 9756	9409 4181 6401 7865 8960 9836	0200 4461 6571 7988 9056 9915	0870 4725 6736 8107 9150 9992	1450 4973 6894 8223 9241 0068	1962 5208 7046 8336 9331 0143	16 13	32 26	48 40	64 53	81 66
•1047 •1222 •1396 •1571 •1745	6 7 8 9 10	1.0216 n.0891 n.1478 n.1997 n.2463	0289 0954 1533 2046 2507	0360 1015 1587 2094 2551	0430 1076 1640 2142 2594	0499 1135 1693 2189 2637	0567 1194 1745 2236 -2680	0633 1252 1797 2282 2722	0699 1310 1848 2328 2764	0764 1367 1898 2374 2805	0828 1423 1948 2419 2846	11 10 9 8 7	22 20 17 16 14	34 29 26 23 21	45 39 35 31 28	56 49 43 39 35
•1920 •2094 •2269 •2443 •2618	11 12 13 14 15	"*2887 "*3275 "*3634 "*3968 "*4281	2927 3312 3668 4000 4311	2967 3349 3702 4032 4341	3006 3385 3736 4064 4371	3046 3422 3770 4095 4400	3085 3458 3804 4127 4430	3123 3493 3837 4158 4459	3162 3529 3870 4189 4488	3200 3564 3903 4220 4517	3237 3599 3935 4250 4546	6 6 6 5 5	13 12 11 10 10	19 18 17 16 15	26 24 22 21 20	32 30 28 26 25
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LOGARITHMS OF TANGENTS.

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Radian.	ree.	o	6'	12'	18'	24'	30'	36'	42'	48'	54'	Me	an l	Diffe	renc	es.
Rad	Degree.	0° •0	0°•1	0°·2	0°•3	0° • 4	0°•5	0°.6	0°•7	0°•8	0°·9	1'	2'	3′	4'	5′
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1.065 1.082 1.100 1.117 1.134	61 62 63 64 65	·2562 ·2743 ·2928 ·3118 ·3313	2580 2762 2947 3137 3333	2598 2780 2966 3157 3353	2616 2798 2985 3176 3373	2634 2817 3004 3196 3393	2652 2835 3023 3215 3413	2670 2854 3042 3235 3433	2689 2872 3061 3254 3453	2707 2891 3080 3274 3473	2725 2910 3099 3294 3494	****	6 6 6 7	9 9 9 10 10	12 12 13 13 13	15 15 16 16 17
1·152 1·169 1·187 1·204 1·222	66 67 68 69 70	·3514 ·3721 ·3936 ·4158 ·4389	3535 3743 3958 4181 4413	3555 3764 3980 4204 4437	3576 3785 4002 4227 4461	3596 3806 4024 4250 4484	3617 3828 4046 4273 4509	3638 3849 4068 4296 4533	3659 3871 4091 4319 4557	3679 3892 4113 4342 4581	3700 3914 4136 4366 4606	3 4 4 4 4	77788	10 11 11 12 12	14 14 15 15 16	17 18 19 19 20
1·239 1·257 1·274 1·292 1·309	71 72 73 74 75	*4630 *4882 *5147 *5425 *5719	4655 4908 5174 5454 5750	4680 4934 5201 5483 5780	4705 4960 5229 5512 5811	4730 4986 5256 5541 5842	4755 5013 5284 5570 5873	4780 5039 5312 5600 5905	4805 5066 5340 5629 5936	4831 5093 5368 5659 5968	4857 5120 5397 5689 6000	44555	8 9 9 10 10	13 13 14 15 16	17 18 19 20 21	21 22 23 25 26
1·326 1·344 1·361 1·379 1·396	76 77 78 79 80	·6032 ·6366 ·6725 ·7113 ·7537	6065 6401 6763 7154 7581	6097 6436 6800 7195 7626	6130 6471 6838 7236 7672	6163 6507 6877 7278 7718	6196 6542 6915 7320 7764	6230 6578 6954 7363 7811	6264 6615 6994 7406 7858	6298 6651 7033 7449 7906	6332 6688 7073 7493 7954	66678	11 12 13 14 16	17 18 19 21 23	22 24 26 28 31	28 30 32 35 39
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1.501 1.518 1.536 1.553 1.571	86 87 88 89 90	1.1554 1.2806 1.4569 1.7581 $+\infty$	1664 2954 4792 8038	1777 3106 5027 8550	1893 3264 5275 9130	2012 3429 5539 9800	2135 3599 5819 0591	2261 3777 6119 1561	2391 3962 6441 2810	2525 4155 6789 4571	2663 4357 7167 7581	14-14-14-14-14-14-14-14-14-14-14-14-14-1				
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NATURAL SINES.

iau.	ree.	or	6'	12'	18'	24'	30'	36'	42'	48'	54'	Me	an I	Diffe	renc	es.
Radian.	Degree.	0° •0	0°·1	0°•2	0°·3	0°•4	0°•5	0°•6	0°.7	0°∙8	0°•9	1'	2'	3'	4'	5'
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•2793 •2967 •3142 •3316 •3491	16 17 18 19 20	•2756 •2924 •3090 •3256 •3420	2773 2940 3107 3272 3437	2790 2957 3123 3289 3453	2807 2974 3140 3305 3469	2823 2990 3156 3322 3486	2840 3007 3173 3338 3502	2857 3024 3190 3355 3518	2874 3040 3206 3371 3535	2890 3057 3223 3387 3551	2907 3074 3239 3404 3567	3 N N N N	66655	00 00 00 00	11 11 11 11 11	14 14 14 14 14 14
•3665 •3840 •4014 •4189 •4363	21 22 23 24 25	•3584 •3746 •3907 •4067 •4226	3600 3762 3923 4083 4242	3616 3778 3939 4099 4258	3633 3795 3955 4115 4274	3649 3811 3971 4131 4289	3665 3827 3987 4147 4305	3681 3843 4003 4163 4321	3697 3859 4019 4179 4337	3714 3875 4035 4195 4352	8730 3891 4051 4210 4368	3 3 3 3 3	55555	00 00 00 00	11 11 11 11 11	14 14 14 13 13
•4538 •4712 •4887 •5061 •5236	26 27 28 29 30	•4384 •4540 •4695 •4848 •5000	4399 4555 4710 4863 5015	4415 4571 4726 4879 5030	4431 4586 4741 4894 5045	4446 4602 4756 4909 5060	4462 4617 4772 4924 5075	4478 4633 4787 4939 5090	4493 4648 4802 4955 5105	4509 4664 4818 4970 5120	4524 4679 4833 4985 5135	33333	55555	00 00 00 00	10 10 10 10 10	13 13 13 13 13
·5411 ·5585 ·5760 ·5934 ·6109	31 32 33 34 35	•5150 •5299 •5446 •5592 •5736	5165 5314 5461 5606 5750	5180 5329 5476 5621 5764	5195 5344 5490 5635 5779	5210 5358 5505 5650 5793	5225 5373 5519 5664 5807	5240 5388 5534 5678 5821	5255 5402 5548 5693 5835	5270 5417 5563 5707 5850	5284 5432 5577 5721 5864	2 2 2 2 2 2 2 2 2 2	5555	77777	10 10 10 10 9	12 12 12 12 12 12
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A THE	R	adian =	= 0017	0035	0052	0070	0087	0105	0122	0140	0157					

NATURAL SINES.

Radian.	Degree.	0'	6'	12'	18′	24'	30'	36'	42'	48'	54'	Mea	n I	Diffe	ren	ices
Rad	Del	0° °0	0°·1	0° • 2	0° ·3	0°•4	0°•5	0°•6	0° .7	0°·8	0° • 9	ľ	2′	3'	4'	5′
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•785 •803 •820 •838 •855 •855 •873	45 46 47 48 49 50	·7071 ·7193 ·7314 ·7431 ·7547 ·7660	7083 7206 7325 7443 7559 7672	7096 7218 7337 7455 7570 7683	7108 7230 7349 7466 7581 7694	7120 7242 7361 7478 7593 7705	7133 7254 7373 7490 7604 7716	7145 7266 7385 7501 7615 7727	7157 7278 7396 7513 7627 7738	7169 7290 7408 7524 7638 7749	7181 7302 7420 7536 7649 7760	2222222	444444	6 6 6 6 6 6	8 8	10 10 10 10 9 9
*890 *908 *925 *942 *960	51 52 53 54 55	•7771 •7880 •7986 •8090 •8192	7782 7891 7997 8100 8202	7793 7902 8007 8111 8211	7804 7912 8018 8121 8221	7815 7923 8028 8131 8231	7826 7934 8039 8141 8241	7837 7944 8049 8151 8251	7848 7955 8059 8161 8261	7859 7965 8070 8171 8271	7869 7976 8080 8181 8281	222222	443333	5 6 5 5 5	777777	99988
*977 *995 1 012 1 030 1 047	56 57 58 59 60	·8290 ·8387 ·8480 ·8572 ·8660	8300 8396 8490 8581 8669	8310 8406 8499 8590 8678	8320 8415 8508 8599 8686	8329 8425 8517 8607 8695	8339 8434 8526 8616 8704	8348 8443 8536 8625 8712	8358 8453 8545 8634 8721	8368 8462 8554 8643 8729	8377 8471 8563 8652 8738	2 2 2 1 1	00 00 00 00 00	55544	6 6 6 6	88877
L·065 L·082 L·100 L·117 L·117	61 62 63 64 65	·8746 ·8829 ·8910 ·8988 ·9063	8755 8838 8918 8996 9070	8763 8846 8926 9003 9078	8771 8854 8934 9011 9085	8780 8862 8942 9018 9092	8788 8870 8949 9026 9100	8796 8878 8957 9033 9107	8805 8886 8965 9041 9114	8813 8894 8973 9048 9121	8821 8902 8980 9056 9128	1 1 1 1 1	00 00 00 00	4444	65555	77666
1·152 1·169 1·187 1·204 1·222	66 67 68 69 70	·9135 ·9205 ·9272 ·9336 ·9397	9143 9212 9278 9342 9403	9150 9219 9285 9348 9409	9157 9225 9291 9354 9415	9164 9232 9298 9361 9421	9171 9239 9304 9367 9426	9178 9245 9311 9373 9432	9184 9252 9317 9379 9438	9191 9259 9323 9385 9444	9198 9265 9330 9391 9449	1 1 1 1 1	2222222	00 00 00 00	54444	66555
1 ·239 1 ·257 1 ·274 1 ·292 1 ·309	71 72 73 74 75	*9455 *9511 *9563 *9613 *9659	9461 9516 9568 9617 9664	9466 9521 9573 9622 9668	9472 9527 9578 9627 9673	9478 9532 9583 9632 9677	9483 9537 9588 9636 9681	9489 9542 9593 9641 9686	9494 9548 9598 9646 9690	9500 9553 9603 9650 9694	9505 9558 9608 9655 9699	1 1 1 1 1	2 2 2 2 2 2 1	3 3 2 2 2	433333	54444
1·326 1·344 1·361 1·379 1·396	76 77 78 79 80	-9703 -9744 -9781 -9816 -9848	9707 9748 9785 9820 9851	9711 9751 9789 9823 9854	9715 9755 9792 9826 9857	9720 9759 9796 9829 9860	9724 9763 9799 9833 9863	9728 9767 9803 9836 9866	9732 9770 9806 9839 9869	9736 9774 9810 9842 9871	9740 9778 9813 9845 9874	1 1 1 1 0	1 1 1 1 1	2 2 2 2 2 1	33222	****
1.414 1.431 1.449 1.466 1.484	81 82 83 84 85	•9877 •9903 •9925 •9945 •9962	9880 9905 9928 9947 9963	9882 9907 9930 9949 9965	9885 9910 9932 9951 9966	9888 9912 9934 9952 9968	9890 9914 9936 9954 9969	9893 9917 9938 9956 9971	9895 9919 9940 9957 9972	9898 9921 9942 9959 9973	9900 9923 9943 9960 9974	0000000	1 1 1 1 0	111111	2 2 1 1 1	2222 222 1
-501 -518 -536 -553 -553 -571	86 87 88 89 90	•9976 •9986 •9994 •9998 1•000	9977 9987 9995 9999	9978 9988 9995 9999	9979 9989 9996 9999	9980 9990 9996 9099	9981 9990 9997 1.000	9982 9991 9997 1.000	9983 9992 9997 1:000	9984 9993 9998 1.000	9985 9993 9998 1.000	0 0 0 0	0 0 0 0	10000	1 1 0 0	1 1 0 0

NATURAL COSINES.

Radian.	Degree.	0'	6'	12'	18′	24'	30'	36′	42'	48'	54'	Mea	n I	Diffe	erei	ices
Rad	Deg	0°•0	0°:1	0°·2	0°·3	0°•4	0°•5	0°.6	0°•7	0°•8	0°.9	ľ	2'	3'	4'	5'
•0000 •0175 •0349 •0524 •0698 •0873	012345	1.000 .9998 .9994 .9986 .9976 .9962	1.000 9998 9993 9985 9974 9960	1.000 9998 9993 9984 9973 9959	1.000 9997 9992 9983 9972 9957	1.000 9997 9991 9982 9971 9956	1.000 9997 9990 9981 9969 9954	·9999 9996 9990 9980 9988 9968 9952	9999 9996 9989 9979 9966 9951	9999 9995 9988 9978 9965 9949	9999 9995 9987 9977 9963 9947	0 0 0 0 0 0 0	0 0 0 0 0 0 1	0 0 0 1 1 1	0 0 1 1 1 1	0 0 1 1 1 2
1047 1222 1396 1571 1745	6789 10	•9945 •9925 •9903 •9877 •9848	9943 9923 9900 9874 9845	9942 9921 9898 9871 9842	9940 9919 9895 9869 9839	9938 9917 9893 9866 9836	9936 9914 9890 9863 9833	9934 9912 9888 9860 9829	9932 9910 9885 9857 9826	9930 9907 9882 9854 9823	9928 9905 9880 9351 9820	0 0 0 0 1	1 1 1 1 1	1 1 1 1 2	$ \begin{array}{c} 1 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \end{array} $	222223
1920 2094 2269 2443 2618	11 12 13 14 15	•9816 •9781 •9744 •9703 •9659	9813 9778 9740 9699 9655	9810 9774 9736 9694 9650	9806 9770 9732 9690 9646	9803 9767 9728 9686 9641	9799 9763 9724 9681 9636	9796 9759 9720 9677 9632	9792 9755 9715 9673 9627	9789 9751 9711 9668 9622	9785 9748 9707 9664 9617	1 1 1 1 1	1 1 1 1 2	222222	2 3 3 3 3 3	33344
2793 2967 3142 3316 3491	16 17 18 19 20	-9613 -9563 -9511 -9455 -9397	9608 9558 9505 9449 9391	9603 9553 9500 9444 9385	9598 9548 9494 9438 9379	9593 9542 9489 9432 9373	9588 9537 9483 9426 9367	9583 9532 9478 9421 9361	9578 9527 9472 9415 9354	9573 9521 9466 9409 9348	9568 9516 9461 9403 9342	1 1 1 1	222222	2 3 3 3 3 3	33444	44555
3665 3840 4014 4189 4363	21 22 23 24 25	-9336 -9272 -9205 -9135 -9063	9330 9265 9198 9128 9056	9323 9259 9191 9121 9048	9317 9252 9184 9114 9041	9311 9245 9178 9107 9033	9304 9239 9171 9100 9026	9298 9232 9164 9092 9018	9291 9225 9157 9085 9011	9285 9219 9150 9078 9003	9278 9212 9143 9070 8996	1 1 1 1	22223	33344	44555	56666
4538 4712 4887 5061 5236	26 27 28 29 30	-8988 -8910 -8829 -8746 -8660	8980 8902 8821 8738 8652	8973 8894 8813 8729 8643	8965 8886 8805 8721 8634	8957 8878 8796 8712 8625	8949 8870 8788 8704 8616	8942 8862 8780 8695 8607	8934 8854 8771 8686 8599	8926 8846 8763 8678 8590	8918 8838 8755 8669 8581	1 1 1 1 1	3 3 3 3 3 3	44444	55666	67777
5411 5585 5760 5934 6109	31 32 33 34 35	*8572 *8480 *8387 *8290 *8192	8563 8471 8377 8281 8181	8554 8462 8368 8271 8171	8545 8453 8358 8261 8161	8536 8443 8348 8251 8151	8526 8434 8339 8241 8141	8517 8425 8329 8231 8131	8508 8415 8320 8221 8121	8499 8406 8310 8211 8111	8490 8396 8300 8202 8100	22222	•••••••	5 6 6 5 5	66677	8 8 8 8 8
6283 6458 6632 6807 6981	36 37 38 39 40	-8090 •7986 •7880 •7771 •7660	8080 7976 7869 7760 7649	8070 7965 7859 7749 7638	8059 7955 7848 7738 7627	8049 7944 7837 7727 7615	8039 7934 7826 7716 7604	8028 7923 7815 7705 7593	8018 7912 7804 7694 7581	8007 7902 7793 7683 7570	7997 7891 7782 7672 7559	22222	34444	55566	77778	999999
7156 7330 7505 7679 7854	41 42 43 44 45	•7547 •7481 •7314 •7193 •7071	7536 7420 7302 7181 7059	7524 7408 7290 7169 7046	7513 7396 7278 7157 7034	7501 7385 7266 7145 7022	7490 7373 7254 7133 7009	7478 7361 7242 7120 6997	7466 349 7230 7108 6984	7455 7337 7218 7096 6972	7443 7325 7206 7083 6959	222222	44444	66666	8 8 8	10 10 10 10 10

NATURAL COSINES.

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ian.	ree.	or	6'	12'	18'	24'	30'	36′	42'	48'	54'	Me	an I	Diffe	renc	.06.
Radian.	Degree.	0° •0	0°•1	0°-2	0°.3	0°•4	0°.5	0°.6	0°.7	0°•8	0°•9	1′	2′	3	:4'	5'
*785 *803 *820 *838 *855 *873	45 46 47 48 49 50	·7071 ·6947 ·6820 ·6691 ·6561 ·6428	7059 6934 6807 6678 6547 6414	7046 6921 6794 6665 6534 6401	7034 6909 6782 6652 6521 6388	7022 6896 6769 6639 6508 6374	7009 6884 6756 6626 6494 6361	6997 6871 6743 6613 6481 6347	6984 6858 6730 6600 6468 6334	6972 6845 6717 6587 6455 6320	6959 6833 6704 6574 6441 6307	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	44444	666777	889999	10 11 11 11 11 11
•890 •908 •925 •942 •960	51 52 53 54 55	·6293 ·6157 ·6018 ·5878 ·5736	6280 6143 6004 5864 5721	6266 6129 5990 5850 5707	6252 6115 5976 5835 5693	6239 6101 5962 5821 5678	6225 6088 5948 5807 5664	6211 6074 5934 5793 5650	6198 6060 5920 5779 5635	6184 6046 5906 5764 5621	6170 6082 5892 5750 5606	22222	00000	*****	9 9 9 9 10	11 12 12 12 12 12
•977 •995 1•012 1•030 1•047	56 57 58 59 60	•5592 •5446 •5299 •5150 •5000	5577 5432 5284 5135 4985	5563 5417 5270 5120 4970	5548 5402 5255 5105 4955	5534 5388 5240 5090 4939	5519 5373 5225 5075 4924	5505 5358 5210 5060 4909	5490 5344 5195 5045 4894	5476 5329 5180 5030 4879	5461 5314 5165 5015 4863	22233	55555	77788	10 10 10 10 10	12 12 12 18 13
1.065 1.082 1.100 1.117 1.134	61 62 63 64 65	•4848 •4695 •4540 •4384 •4226	4833 4679 4524 4368 4210	4818 4664 4509 4352 4195	4802 4648 4493 4337 4179	4787 4633 4478 4321 4163	4772 4617 4462 4305 4147	4756 4602 4446 4289 4131	4741 4586 4431 4274 4115	4726 4571 4415 4258 4099	4710 4555 4399 4242 4083	83333	55555	808888	10 10 10 11 11	13 13 13 13 13
1·152 1·169 1·187 1·204 1·222	66 67 68 69 70	•4067 •3907 •3746 •3584 •3420	4051 3891 3730 3567 3404	4035 3875 3714 3551 3387	4019 3859 3697 3535 3371	4003 3843 3681 3518 3355	3987 3827 3665 3502 3338	3971 3811 3649 3486 3322	3955 3795 3633 3469 3305	3939 3778 3616 3453 3289	3923 3762 3600 3437 3272	***	55555	00 00 00 00	11 11 11 11 11	14 14 14 14 14
1·239 1·257 1·274 1·292 1·309	71 72 73 74 75	•3256 •3090 •2924 •2756 •2588	3239 3074 2907 2740 2571	3223 3057 2890 2723 2554	3206 3040 2874 2706 2538	3190 3024 2857 2689 2521	3173 3007 2840 2672 2504	3156 2990 2823 2656 2487	3140 2974 2807 2639 2470	3123 2957 2790 2622 2453	3107 2940 2773 2605 2436	****	66666	808080	11 11 11 11 11	14 14 14 14 14
1·326 1·344 1·361 1·379 1·396	76 77 78 79 80	•2419 •2250 •2079 •1908 •1736	2402 2233 2062 1891 1719	2385 2215 2045 1874 1702	2368 2198 2028 1857 1685	2351 2181 2011 1840 1668	2334 2164 1994 1822 1650	2317 2147 1977 1805 1633	2300 2130 1959 1788 1616	2284 2113 1942 1771 1599	2267 2096 1925 1754 1582	****	6 6 6 6	899999	11 11 11 11 11 12	14 14 14 14 14 14
1·414 1·431 1·449 1·466 1·484	81 82 83 84 85	·1564 ·1392 ·1219 ·1045 ·0872	1547 1374 1201 1028 0854	1530 1357 1184 1011 0837	1513 1340 1167 0993 0819	1495 1323 1149 0976 0802	1478 1305 1132 0958 0785	1461 1288 1115 0941 0767	1444 1271 1097 0924 0750	* 1426 1253 1080 0906 0732	1409 1236 1063 0889 0715	****	66666	99099	12 12 12 12 12 12	14 14 14 14 14
1.501 1.518 1.536 1.553 1.571	86 87 88 89 90	·0698 ·0523 ·0349 ·0175 ·0000	0680 0506 0332 0157	0663 0488 0314 0140	0645 0471 0297 0122	0628 0454 0279 0105	0610 0436 0262 0087	0593 0419 0244 0070	0576 0401 0227 0052	0558 0384 0209 0035	0541 0366 0192 0017	8833	6666	9999	12 12 12 12 12	15 15 15 15
	R	adian	= 0017	0035	0052	0070	0087	0105	0122	0140	0157			1		

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NATURAL TANGENTS.

an.	ree.	0'	6'	12'	18'	24'	30'	36'	42'	48'	54'	M	ean	Diffe	erend	ces.
Radian.	Degree.	0°·0	0°•1	0°·2	· 0° · 3	0°•4	0°•5	0°•6	0°.7	0°•8	0°•9	1′	2'	3′	4'	5′
*0000 *0175 *0349 *0524 *0698 *0873	012345	·0000 ·0175 ·0349 ·0524 ·0699 ·0875	0017 0192 0367 0542 0717 0892	0035 0209 0384 0559 0734 0910	0052 0227 0402 0577 0752 0928	0070 0244 0419 0594 0769 0945	0087 0262 0437 0612 0787 0963	0105 0279 0454 0629 0805 0981	0122 0297 0472 0647 0822 0998	0140 0314 0489 0664 0840 1016	0157 0332 0507 0682 0857 1033	3 3 3 3 3 3	6 6 6 6 6 6 6	9 9 9 9 9 9 9 9	12 12 12 12 12 12 12 12	15 15 15 15 15 15 15
•1047 •1222 •1396 •1571 •1745	6 7 8 9 10	•1051 •1228 •1405 •1584 •1763	1069 1246 1423 1602 1781	1086 1263 1441 1620 1799	1104 1281 1459 1638 1817	1122 1299 1477 1655 1835	1139 1317 1495 1673 1853	1157 1334 1512 1691 1871	1175 1352 1530 1709 1890	1192 1370 1548 1727 1908	1210 1388 1566 1745 1926	8 8 8 8 8 8	6 6 6 6 6	99999	12 12 12 12 12 12	15 15 15 15 15
•1920 •2094 •2269 •2443 •2618	11 12 13 14 15	•1944 •2126 •2309 •2493 •2679	1962 2144 2327 2512 2698	1980 2162 2345 2530 2717	1998 2180 2364 2549 2736	2016 2199 2382 2568 2754	2035 2217 2401 2586 2773	2053 2235 2419 2605 2792	2071 2254 2438 2623 2811	2089 2272 2456 2642 2830	2107 2290 2475 2661 2849	3 3 3 3 3	6 6 6 6 6	99999	12 12 12 12 12 12	15 15 15 16 16
•2793 •2967 •3142 •3316 •3491	16 17 18 19 20	•2867 •3057 •3249 •3443 •3640	2886 3076 3269 3463 3659	2905 3096 3288 3482 3679	2924 3115 3307 3502 3699	2943 3134 3327 3522 3719	2962 3153 3346 3541 3739	2981 3172 3365 3561 3759	3000 3191 3385 3581 3779	3019 3211 3404 8600 3799	3038 3230 3424 3620 3819	3 3 3 3 3 3	66677 7	9 10 10 10 10	13 13 13 13 13 13	16 16 16 16 16 17
•3665 •3840 •4014 •4189 •4363	21 22 23 24 25	•3839 •4040 •4245 •4452 •4663	3859 4061 4265 4473 4684	3879 4081 4286 4494 4706	3899 4101 4307 4515 4727	3919 4122 4327 4536 4748	3939 4142 4348 4557 4770	3959 4163 4369 4578 4791	3979 4183 4390 4599 4813	4000 4204 4411 4621 4834	4020 4224 4431 4642 4856	33344	77777	10 10 10 11 11	13 14 14 14 14	17 17 17 18 18
•4538 •4712 •4887 •5061 •5236	26 27 28 29 30	•4877 •5095 •5317 •5543 •5774	4899 5117 5340 5566 5797	4921 5139 5362 5589 5820	4942 5161 5384 5612 5844	4964 5184 5407 5635 5867	4986 5206 5430 5658 5890	5008 5228 5452 5681 5914	5029 5250 5475 5704 5938	5051 5272 5498 5727 5961	5073 5295 5520 5750 5985	44444	77888	11 11 11 12 12	15 15 15 15 16	18 18 19 19 20
•5411 •5585 •5760 •5934 •6109	31 32 33 34 35	*6009 *6249 *6494 *6745 *7002	6032 6273 6519 6771 7028	6056 6297 6544 6796 7054	6080 6322 6569 6822 7080	6104 6346 6594 6847 7107	6128 6371 6619 6873 7133	6152 6395 6644 6899 7159	6176 6420 6669 6924 7186	6200 6445 6694 6950 7212	6224 6469 6720 6976 7239	44444	888899	12 12 13 13 13	16 16 17 17 18	20 20 21 21 21 22
*6283 *6458 *6632 *6807 *6981	36 37 38 39 40	•7265 •7536 •7813 •8098 •8391	7292 7563 7841 8127 8421	7319 7590 7869 8156 8451	7346 7618 7898 8185 8481	7373 7646 7926 8214 8511	7400 7673 7954 8243 8541	7427 7701 7983 8273 8571	7454 7729 8012 8302 8601	7481 7757 8040 8332 8632	7508 7785 8069 8361 8662	6101010	9 9 9 10 10	14 14 14 15 15	18 18 19 20 20	23 23 24 24 25
•7156 •7330 •7505 •7679 •7854	41 42 43 44 45	*8693 *9004 *9325 *9657 1*0000	8724 9036 9358 9691 0035	8754 9067 9391 9725 0070	8785 9099 9424 9759 0105	8816 9131 9457 9793 0141	8847 9163 9490 9327 0176	8878 9195 9523 9861 0212	8910 9228 9556 9896 0247	8941 9260 9590 9930 0283	8972 9293 9623 9965 0319	55666	10 11 11 11 12	16 16 17 17 18	21 21 22 23 24	26 27 28 29 30
	F	adian =	=0017	0035	0052	0070	0087	0105	0122	0140	0157		14			

NATURAL TANGENTS.

	Hadian.	Tee.	0'	6'	12'	18'	24'	30'	36'	42'	48'	54'	Me	an I	Diffe	renc	es.
-	H20	Degree.	0° 0	0°·1	0°·2	0°•3	0°•4	0°•5	0° 6	0°•7	0°•8	0° •9	ľ	2"	3′	4'	5'
20202020	785 803 820 838 855 873	45 46 47 48 49 50	1.0000 1.0355 1.0724 1.1106 1.1504 1.1918	0035 0392 0761 1145 1544 1960	0070 0428 0799 1184 1585 2002	0105 0464 0837 1224 1626 2045	0141 0501 0875 1263 1667 2088	0176 0538 0913 1303 1708 2131	0212 0575 0951 1343 1750 2174	0247 0612 0990 1383 1792 2218	0283 0649 1028 1423 1833 2261	0319 0686 1067 1463 1875 2305	6 6 6 7 7 7	12 12 13 13 14 14	18 18 19 20 21 22	24 25 25 27 28 29	80 31 32 33 34 36
1.1.1	890 908 925 942 960	51 52 53 54 55	1·2349 1·2799 1·3270 1·3764 1·4281	2393 2846 3319 3814 4335	2437 2892 3367 3865 4388	2482 2938 3416 3916 4442	2527 2985 3465 3968 4496	2572 3032 3514 4019 4550	2617 3079 3564 4071 4605	2662 3127 3613 4124 4659	2708 3175 3663 4176 4715	2753 3222 3713 4229 4770	888999	15 16 16 17 18	23 24 25 26 27	30 31 33 84 36	38 39 41 43 45
11	977 995 012 030 047	56 57 58 59 60	1·4826 1·5399 1·6003 1·6643 1·7321	4882 5458 6066 6709 7391	4938 5517 6128 6775 7461	4994 5577 6191 6842 7532	5051 5637 6255 6909 7603	5108 5697 6319 6977 7675	5166 5757 6383 7045 7747	5224 5818 6447 7113 7820	5282 5880 6512 7182 7893	5340 5941 6577 7251 7966	10 10 11 11 12	19 20 21 23 24	29 30 32 34 36	38 40 43 45 48	48 50 53 56 60
1.1	065 082 100 117 134	61 62 63 64 65	1.8040 1.8807 1.9626 2.0503 2.1445	8115 8887 9711 0594 1543	8190 8967 9797 0686 1642	8265 9047 9883 0778 1742	8341 9128 9970 0872 1842	8418 9210 0057 0965 1943	8495 9292 0145 1060 2045	8572 9375 0233 1155 2148	8650 9458 0323 1251 2251	8728 9542 0413 1348 2355	13 14 15 16 17	26 27 29 31 34	38 41 44 47 51	51 55 58 63 68	64 68 73 78 85
111	152 169 187 204 222	66 67 68 69 70	2·2460 2·3559 2·4751 2·6051 2·7475	2566 3673 4876 6187 7625	2673 3789 5002 6325 7776	2781 3906 5129 6464 7929	2889 4023 5257 6605 8083	2998 4142 5386 6746 8239	3109 4262 5517 6889 8397	3220 4383 5649 7034 8556	3332 4504 5782 7179 8716	3445 4627 5916 7326 8878	18 20 22 24 26	37 40 43 47 52	55 60 65 71 78	73 79 87 95 104	92 99 108 119 131
12 12 12	239 257 274 292 309	71 72 73 74 75	2·9042 3·0777 3·2709 3·4874 3·7321	9208 0961 2914 5105 7583	9375 1146 3122 5339 7848	9544 1534 3332 5576 8118	9714 1524 3544 5816 8391	9887 1716 3759 6059 8667	0061 1910 3977 6305 8947	0237 2106 4197 6554 9232	0415 2305 4420 6806 9520	0595 2506 4646 7062 9812	29 32 36 41 46	81	96 108 122	144 163	145 161 180 204 232
1.2	326 344 361 379 396	76 77 78 79 80	4.0108 4.3315 4.7046 5.1446 5.6713	0408 3662 7453 1929 7297	0713 4015 7867 2422 7894	1022 4374 8288 2924 8502	1335 4737 8716 3435 9124	1653 5107 9152 3955 9758	1976 5483 9594 4486 0405	2308 5864 0045 5026 1066	2635 6252 0504 5578 1742	$\begin{array}{c} 2972 \\ 6646 \\ \overline{0}970 \\ 6140 \\ \overline{2}432 \end{array}$	15 - 15		No. of the second	North Law	State of the
1.4	114 131 149 166 184	81 82 83 84 85	6·3138 7·1154 8·1443 9·514 11·43	3859 2066 2636 9.677 11.66	4596 3002 3863 9·845 11·91	5350 3962 5126 10 02 12 16	6122 4947 6427 10·20 12·43	6912 5958 7769 10·39 12·71	7720 6996 9152 10.58 13.00	8548 8062 0579 10.78 13.30	9395 9158 2052 10·99 13·62	0264 0285 3572 11 20 13 95	10	n di ngen ccura	sul		
1.2	501 518 536 553 571	86 87 88 89 90	14.30 19.08 28.64 57.29 00	19.74	20·45 31·82	21·20 33·69		22.90 38.19	16.83 23.86 40.92 143.2	24 .90 44 . 07	17·89 26·03 47·74 286·5	52.08					R. R. W.
		F	Radian =	= 0017	0035	0052	0070	0087	0105	0122	0140	0157			100		

NATURAL COTANGENTS.

lan.	ree.	or	6	12'	18'	24'	30'	\$6 '	42'	48'	54'	Me	an	Diffe	erend	ea.
Radian.	Degree.	0°-0	0°•1	0°-2	0°·3	0°.4	0°.2	0°.6	0°.7	08	0°:9	1'	2'	3'	4'	5'
-0000 -0475 -0349 -0524 -0694 -0873	012345	57-29 28-64 19-08 14-30 11-43	52.08 27.27 18.46 18.95	286.5 47.74 26.03 17.89 13.62 10.99	44.07 24.90 17.34 13.80	40.92 23.86 16.83 13.00	114.6 38.19 22.90 16.35 12.71 10.89	35.80 22.02 15.89 12.43	33.69 21.20 15.46 12.16	71.62 31.82 20.45 15.06 11.91 9.845	30·14 19·74 14·67 11·66		all and a second	100100	The Number	2 allowed
·1047 ·1222 ·1396 ·1571 ·1745	6 7 8 9 10	9.5144 8.1443 7.1154 6.3138 5.6718	3572 0285 0264 2432 6140	2052 9158 9395 1742 5578	0579 8062 8548 1066 5026	9152 6996 7720 0405 4486	7769 5958 6912 9758 3955	6427 4947 6122 9124 8435	5126 3962 5350 8502 2924	3863 3002 4596 7894 2422	2636 2066 3859 7297 1929					not rate.
·1920 ·2094 ·2269 ·2443 ·2618	11 12 13 14 15	5-1446 4-7046 4-3315 4-0108 3-7321	0970 6646 2972 9812 7062	0504 6252 2635 9520 6806	0045 5864 2303 9232 6554	9594 5483 1976 8947 6305	9152 5107 1653 8667 6059	8716 4737 1335 8391 5816	8288 4374 1022 8118 5576	7867 4015 0713 7848 5339	7453 3662 0408 7583 5105	- STATE	SALES MAL		The second s	
*2793 *2967 *3142 *3316 *3491	16 17 18 19 20	3·4874 8·2709 3·0777 2·9042 2·7475	4646 2506 0595 8878 7326	4420 2305 0415 8716 7179	4197 2106 0287 8556 7034	3977 1910 0061 8397 6889	3759 1716 9887 8239 6746	8544 1524 9714 8083 6605	3332 1334 9544 7929 6464	3122 1146 9375 7776 6325	2914 0961 9208 7625 6187	36 32 29 26 24	72 64 58 52 57	108 96 87 78 71		161
•3665 •3840 •4014 •4189 •4863	21 22 23 24 25	2.6051 2.4751 2.3559 2.2460 2.1445	5916 4627 3445 2855 1348	5782 4504 3332 2251 1251	5649 4388 3220 2148 1155	5517 4262 8109 2045 1060	5386 4142 2998 1943 0965	5257 4023 2889 1842 0872	5129 8906 2781 1742 0778	5002 3789 2673 1642 0686	4876 3673 2566 1543 0594	22 20 18 17 16	43 40 37 34 31	65 60 55 51 47	87 79 73 68 63	108 99 02 85 78
•4538 •4712 •4887 •5061 •5236	26 27 28 29 30	2.0503 1.9626 1.8807 1.8040 1.7321	0413 9542 8728 7966 7251	0323 9458 8650 7893 7182	0233 9375 8572 7820 7113	0145 9292 8495 7747 7045	0057 9210 8418 7675 6977	9970 9128 8341 7603 6909	9883 9047 8265 7532 6842	9797 8967 8190 7461 6775	9711 8887 8115 7391 6709	15 14 13 12 11	29 27 26 24 23	44 41 38 86 34	58 55 51 48 45	78 68 64 60 56
•5411 •5585 •5760 •5934 •6109	31 32 33 34 35	1.6643 1.6003 1.5399 1.4826 1.4281	6577 5941 5340 4770 4229	6512 5880 5282 4715 4176	0447 5818 5224 4659 4124	6383 5757 5166 4605 4071	6319 5697 5108 4550 4019	6255 5637 5051 4496 3968	6191 5577 4994 4442 3916	6128 5517 4933 4388 3865	6066 5458 4882 4335 3814	11 10 10 9 9	21 20 19 18 17	82 80 29 27 26	43 40 38 36 84	53 50 48 45 45
•6283 •6458 •6632 •6807 •6981	36 37 38 39 40	1·3764 1·3270 1·2799 1·2349 1·1918	3713 3222 2753 2305 1875	3663- 3175 2708 2261 1833	3618 3127 2662 2218 1792	8564 8079 2617 2174 1750	3514 3032 2572 2131 1708	3465 2985 2527 2088 1667	3416 2938 2482 2045 1626	3367 2892 2437 2002 1585	3319 2846 2393 1960 1544	8 8 8 7 7	16 16 15 14 14	25 24 23 22 21	33 31 30 29 18	41 39 38 36 34
•7156 •7330 •7505 •7679 •7854	41 42 43 44 45	1.1504 1.1106 1.0724 1.0355 1.0000	1463 1067 0686 0319 9965	1423 1028 0649 0283 9930	1383 0990 0612 0247 9896	1343 0951 0575 0212 9861	1303 0913 0538 0176 9827	1263 0875 0501 0141 9793	1224 0837 0464 0105 9759	1184 0799 0428 0070 9725	1145 0761 0392 0035 0691	· 7 6 6 6	13 13 12 12 12 11	20 19 18 18 18	27 25 25 24 23	33 32 31 30 29
		Radian =	= 0017	0085	0052	0070	0087	0105	0122	0140	0157		18			

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NATURAL COTANGENTS.

ian.	ree.	or	6'	12'	18'	24'	30'	36'	42'	48'	54'	Me	an I	Diffe	renc	es.
Radian.	Degree.	0° °0	0°·1	0°-2	0°·3	0°•4	0°•5	0° 6	0°•7	0°•8	0°·9	1'	3	3′	4'	5′
•785 •803 •820 •838 •855 •873	45 46 47 48 49 50	1.0000 0.9657 .9325 .9004 .8693 .8391	9965 9623 9293 8972 8662 8361	9930 9590 9260 8941 8632 8332	9896 9556 9228 8910 8601 8302	9861 9523 9195 8878 8571 8273	9827 9490 9163 8847 8541 8243	9793 9457 9131 8816 8511 8214	9759 9424 9099 8785 8481 8185	9725 9391 9067 8754 8451 8156	9691 9358 9036 8724 8421 8127	005555 5555 5555 5555 5555 5555 5555 5	11 11 11 10 10 10	17 17 16 16 15	23 22 21 21 20 20	29 28 27 26 25 24
•890 •908 •925 •942 •960	51 52 53 54 55	*8098 *7818 *7536 *7265 *7002	8069 7785 7508 7239 6976	8040 7757 7481 7212 6950	8012 7729 7454 7186 6924	7983 7701 7427 7159 6899	7954 7673 7400 7133 6873	7926 7646 7373 7107 6847	7893 7618 7346 7080 6822	7869 7590 7319 7054 6796	7841 7563 7292 7028 6771	55544	99999	14 14 14 13 13	19 18 18 18 18 17	24 23 23 22 21
·977 ·995 1·012 1·030 1·047	56 57 58 59 60	·6745 ·6494 ·6249 ·6009 ·5774	6720 6469 6224 5985 5750	6694 6445 6200 5961 5727	6669 6420 6176 5938 5704	6644 6395 6152 5914 5681	6619 6371 6128 5890 5658	6594 6346 6104 5867 5635	6569 6322 6080 5844 5612	6544 6297 6056 5820 5589	6519 6273 6032 5797 5566	44444	8 8 8 8 8	13 12 12 12 12 12	17 16 16 16 16	21 20 20 20 19
1.065 1.082 1.100 1.117 1.134	61 62 63 64 65	·5543 ·5317 ·5095 ·4877 ·4663	5520 5295 5073 4856 4642	5498 5272 5051 4834 4621	5475 5250 5029 4813 4599	5452 5228 5008 4791 4578	5430 5206 4986 4770 4557	5407 5184 4964 4748 4536	5384 5161 4942 4727 4515	5362 5139 4921 4706 4494	5340 5117 4899 4684 4473	44444	87777	11 11 11 11 11	15 15 15 14 14	19 18 19 18 18
1·152 1·169 1·187 1·204 1·222	66 67 68 69 70	·4452 ·4245 ·4040 ·3839 ·3640	4431 4224 4020 3819 3620	4411 4204 4000 3799 3600	4390 4183 3979 3779 3581	4369 4163 3959 3759 3561	4348 4142 3939 3739 3541	4327 4122 3919 3719 3522	4307 4101 3899 3699 3502	4286 4081 3879 3679 3482	4265 4061 3859 3659 3463	80 80 80 80 80 80 80 80	77777	10 10 10 10 10	14 14 13 13 13	17 17 17 17 17 16
1·239 1·257 1·274 1·292 1·309	71 72 73 74 75	·3443 ·3249 ·3057 ·2867 ·2679	3424 3230 3038 2849 2661	3404 3211 3019 2830 2642	3385 3191 3000 2811 2623	3365 3172 2981 2792 2605	3346 3153 2962 2773 2586	8327 3134 2943 2754 2568	3307 3115 2924 2736 2549	3288 3096 2905 2717 2530	3269 3076 2886 2698 2512	****	6 6 6 6	10 10 9 9	13 13 13 13 13 12	16 16 16 16 16
1·326 1·344 1·361 1·379 1·396	76 77 78 79 80	·2493 ·2309 ·2126 ·1944 ·1763	2475 2290 2107 1926 1745	2456 2272 2089 1908 1727	2438 2254 2071 1890 1709	2419 2235 2053 1871 1691	2401 2217 2035 1853 1673	2332 2199 2016 1835 1655	2364 2180 1998 1817 1638	2345 2162 1980 1799 1620	2327 2144 1962 1781 1602	80 80 60 60	6 6 6 6	99999	12 12 12 12 12 12	15 15 15 15 15
1.414 1.431 1.449 1.466 1.484	81 82 83 84 85	*1584 *1405 *1228 *1051 *0875	1566 1388 1210 1033 0857	1548 1370 1192 1016 0840	1530 1352 1175 0998 0822	1512 1334 1157 0981 0805	1495 1317 1139 0963 0787	1477 1299 1122 0945 0769	1459 1281 1104 0928 0752	1441 1263 1086 0910 0734	1423 1246 1069 0892 0717	****	6 6 6 6 6	99999	12 12 12 12 12 12	15 15 15 15 15
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Radian.	ree.	0'	6'	12	18'	24'	30'	36'	42'	48'	54'	Me	8.1	Diffe	renc	es.
Rad	Degree.	0°-0	0°·1	0°·2	0°.3	0°·4	0°.2	0°•6	0°-7	0° ·8	0°•9	ľ	2′	3′	4'	5'
•0000 •0175 •0349 •0524 •0698 •0678	0 1 2 3 4 5	1.0000 0002 0006 0014 0024 0038	0000 0002 0007 0015 0026 0040	0000 0002 0007 0016 0027 0041	0000 0003 0008 0017 0028 0043	0000 0003 0009 0018 0030 0045	0000 0003 0010 0019 0031 0046	0001 0004 0010 0020 0032 0048	0001 0004 0011 0021 0034 0050	0001 0005 0012 0022 0085 0051	0001 0006 0013 0023 0037 0053	000000000000000000000000000000000000000	0 0 0 0 0 0	0 0 0 1 1 1	0 0 1 1 1 1	0 0 1 1 1 1
·1047 ·1222 ·1396 ·1571 ·1745	8 7 8 9 10	0055 0075 0098 0125 0154	0057 0077 0101 0127 0157	0059 0079 0103 0130 0161	0061 0082 0106 0133 0164	0063 0084 0108 0136 0167	0065 0086 0111 0139 0170	0067 0089 0114 0142 0174	0069 0091 0116 0145 0177	0071 0093 0119 0148 0180	0073 0096 0122 0151 0184	0 0 0 0 1	111111	11112	12222	2 2 2 2 3
•1920 •2094 •2269 •2443 •2618	11 12 13 14 15	0187 0223 0263 0306 0353	0191 0227 0267 0311 0358	0194 0231 0271 0315 0363	0198 0235 0276 0320 0367	0201 0239 0280 0324 0372	0205 0243 0284 0329 0377	0209 0247 0288 0334 0382	0212 0251 0293 0338 0388	0216 0255 0297 0343 0393	0220 0259 0302 0348 0398	1 1 1 1 1	1 1 1 2 2	22228	24 29 29 29 29	88444
•2793 •2967 •3142 •3316 •3491	16 17 18 19 20	0403 0457 0515 0576 0642	0408 0463 0521 0583 0649	0413 0468 0527 0589 0655	0419 0474 0533 0595 0662	0424 0480 0539 0602 0669	0429 0485 0545 0608 0676	0435 0491 0551 0615 0683	0440 0497 0557 0622 0690	0446 0503 0564 0628 0697	0451 0509 0570 0635 0704	111111	20 20 20 20 20 20 20 20 20 20 20 20 20 2	33334	44445	4 5 6 6
•3665 •3840 •4014 •4189 •4363	21 22 23 24 25	0711 0785 0864 0946 1034	0719 0793 0872 0955 1043	0726 0801 0850 0963 1052	0733 0808 0888 0972 1061	0740 0816 0896 0981 1070	0748 0824 0904 0989 1079	0755 0832 0918 0998 1089	0763 0840 0921 1007 1098	0770 0848 0929 1016 1107	0778 0856 0938 1025 1117	1 1 1 2	2 2 2 2 2 2 2	44445	55666	67777777777777777777777777777777777777
•4538 •4712 •4887 •5061 •5236	26 27 28 29 30	1126 1223 1326 1434 1547	1186 1233 1336 1445 1559	1145 1243 1347 1456 1570	1155 1253 1357 1467 1582	1164 1264 1368 1478 1594	1174 1274 1379 1490 1606	1184 1284 1390 1501 1618	1194 1294 1401 1512 1630	1203 1305 1412 1524 1642	1213 1315 1423 1535 1654	2 2 2 2 2 2 2 2 2 2	83444	55566	67778	8 9 9 9 10
•5411 •5585 •5760 •5934 •6109	31 32 33 34 35	1666 1792 1924 2062 2208	1679 1805 1937 2076 2223	1691 1818 1951 2091 2238	1703 1831 1964 2105 2258	1716 1844 1978 2120 2268	1728 1857 1992 2134 2283	1741 1870 2006 2149 2299	1753 1883 2020 2163 2814	1766 1897 2034 2178 2329	1779 1910 2048 2193 2345	222993	44000	67778	8 9 9 10 10	10 11 12 12 12
*6283 *6458 *6632 *6807 *6981	36 37 38 39 40	2361 2521 2690 2868 8054	2376 2538 2708 2886 3073	2392 2554 2725 2904 3093	2408 2571 2742 2923 8112	2424 2588 2760 2941 8131	2440 2605 2778 2960 8151	2456 2622 2796 2978 8171	2472 2639 2813 2997 8190	2489 2656 2831 3016 3210	2505 2673 2849 3035 3230	8 8 8 8 8 8 8 8 8 8 8 8 8 8	56667	8 9 9 10 10	11 12 12 13 13	18 14 15 15 16
•7156 •7330 •7505 •7679 •7854	41 42 43 44 45	8250 3456 3673 3902 4142	3270 3478 3696 3925 4167	8291 8499 8718 3949 4192	8311 8520 3741 8972 4217	3331 3542 8763 3996 4242	8352 8568 3786 4020 4267	3378 3585 3809 4044 4293	3393 3607 3832 4069 4318	3414 3629 3855 4093 4344	3435 3651 3878 4118 4370	4444	77888	10 11 11 12 13	14 14 15 16 17	17 18 19 20 21
		Radian =	= 0017	0085	0052	0070	0087	0105	0122	0140	0157	1	-			

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fan.	ree.	or	6'	12'	18′	24'	30'	36'	42'	48'	54'	Me	an	Diffe	renc	65.
Radian.	Degree.	0.0	0°·1	0°-2	0°.3	0°·4	0°•5	0°.6	0.7	0°-8	0°·9	ľ	2	3	*	5'
•785 •803 •820 •838 •855 •855 •873	45 46 47 48 49 50	1·4142 4396 4663 4945 5243 5557	4167 4422 4690 4974 5273 5590	4192 4448 4718 5003 5304 5622	4217 4474 4746 5032 5335 5655	4242 4501 4774 5062 5366 5688	4267 4527 4802 5092 5398 5721	4293 4554 4830 5121 5429 5755	4318 4581 4859 5151 5461 5788	4344 4608 4887 5182 5493 5822	4370 4635 4916 5212 5525 5856	445556	8 9 10 10 10 10	13 13 14 15 16 17	17 18 19 20 21 22	21 22 23 25 26 28
*890 *908 *925 *942 *960	51 52 53 54 55	5890 6243 6616 7018 7434	5925 6279 6655 7054 7478	5959 6316 6694 7095 7522	5994 6353 6783 7137 7566	6029 6390 6772 7179 7610	6064 6427 6812 7221 7655	6099 6464 6852 7268 7700	6135 6502 6892 7305 7745	6171 6540 6932 7348 7791	6207 6578 6972 7391 7837	66777 777	12 12 13 14 15	18 19 20 21 22	24 25 26 28 30	80 31 33 35 37
977 995 1-012 1-030 1-047	56 57 58 59 60	7883 8361 8871 9416 2.0000	7929 8410 8924 9473 0061	7976 8460 8977 9530 0122	8023 8510 9031 9587 0183	8070 8561 9084 9645 0245	S118 8612 9139 970 S 03 08	8166 8663 9194 9762 0371	8214 8714 9249 9821 0434	8263 8766 9304 9880 0498	8312 8818 9360 9940 0562	8 9 10 10	16 17 18 19 21	24 26 27 29 31	82 34 36 39 42	40 43 46 49 52
1.065 1.082 1.100 1.117 1.184	61 62 63 64 65	0627 1301 2027 2812 3662	0692 1871 2103 2894 8751	0757 1441 2179 2976 3841	0824 1513 2256 3060 3931	0890 1584 2333 3144 4022	0957 1657 2412 3228 4114	1025 1730 2490 3314 4207	1093 1803 2570 8400 4300	1162 1877 2650 3486 4395	1231 1952 2730 3574 4490	11 12 13 14 15	22 24 26 28 31	33 87 39 43 46	45 48 52 57 62	56 61 66 71 77
1.152 1.169 1.187 1.204 1.222	66 67 68 69 70	4586 5593 6695 7904 9238	4683 5699 6811 8082 9379	4780 5805 6927 8161 9521	4879 5913 7046 8291 9665	4978 6022 7165 8422 9811	5078 6131 7285 8555 9957	5180 6242 7407 8688 0106	5282 6354 7529 8824 0256	5384 6466 7653 8960 0407	5488 6580 7778 9099 0561	17 18 20 22 25	34 37 40 44 49	50 55 61 67 74	89	84 91 101 111 123
1.239 1.257 1.274 1.292 1.309	71 72 73 74 75	8.0716 2361 4203 6280 8037	0872 2535 4399 6502 8890	1030 2712 4598 6727 9147	1190 2891 4799 6955 9408	1352 3072 5003 7186 9672	1515 3255 5209 7420 9939	1681 3440 5418 7657 0211	1848 3628 5629 7897 0486	2017 3817 5843 8140 0765	2188 4009 6060 8387 1043	27 31 35 39 45	78	92 104 118	106 122 138 157 180	153 173 196
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Radian.	Degree.	ď	6'	12	18'	24'	30'	36′	42'	48'	54	Me	an	Diff	eren	ces.
Rad	Deg	.0°•0	0°•1	0°-2	0°•3	0°·4	0°•5	0°·6	0°-7	0°.8	0°•9	1′	2'	3'	4'	5'
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·1754	10	5.7588	7023	6470	5928	5396	4847	4362	3860	3367	2883					
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*2094 *2269	12	4 8097	7706	7321 3792	6942 3469	6569 3150	6202 2837	5841 2527	5486 2223	5137 1923	4793 1627					
·2443	14	1336	1048	0765	0486	0211	9939	9672	9408	9147	8890					
·2618	15	8.8637	8387	8140	7897	7657	7420	7186	6955	6727	6502	1.500		-		Taka
2793	16	6280	6060	5843	5629	5418	5209	5003	4799	4598	4399	35	69	104	138	
·2967 ·3142	17	4203 2361	4009 2188	8817 2017	3628 1848	3440 1681	8255 1515	3072 1352	2891	2712 1030	2535 0872	31 27	61 55	92 82	122 106	
3316	19	0716	0561	0407	0256	0106	9957	9811	9665	9521	9379	25	49	74	98	123
•3491	20	2 9238	9099	8960	8824	8688	8555	8422	8291	8161	8032	22	44	67	89	111
·3665	21 22	7904 6695	7778	7653	7529	7407	7285 6131	7165	7046 5913	6927 5805	6811 5699	20 18	40 37	61 55	81 74	101 91
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·4189 ·4363	24 25	4586 3662	4490 3574	4395 3486	4300 3400	4207 3314	4114 3228	4022 3144	3931 3060	8841 2976	3751 2894	15 14	31 28	46 43	62 57	77 71
4538	26	2812	2780	2650	2570	2490	2412	2333	2256	2179	2103	13	26	89	52	66
•4712	27	2027	1952	1877	1803	1730	1657	1584	1513 0824	1441 0757	1871	12 11	24 22	37 33	48 45	61 56
·4887 ·5061	23	1301 0627	1231 0562	1162 0498	1093 0434	1025 0371	0957 0308	0890 0245	0183	0122	0692 0061	10	21	31	42	52
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.5934	34	7883	7837	7791	7745	7700	7655	7610	7566	7522	7478	777	15	22 21	30 28	37 35
·6109	35	7434	7891	7348	7305	7263	7221	7179	7137	7095	7054		-	122		12/2
·6283 ·6458	36 37	7013 6616	6972 6578	6932 6540	6892 6502	6852 6484	6812 6427	6772 6390	6783 6353	6694 6316	6655 6279	76	13 12	20 19	26 25	33 31
.6632	38	6243	6207	6171	6135	6099	6064	6029	5994	5959	5925	6	12	18	24	30
•6807 •6981	39 40	5890 5557	5856 5525	5822 5493	5788 5461	5755 5429	5721 5398	5688 5866	5655 5335	5622 5304	5590 5273	6 5	11 10	17 16	22 21	28 26
•7156	41	5243	5212	5182	5151	5121	5092	5062	5032	5003	4974	5	10	15	20	25
·7830 ·7505	42 43	4945 4663	4916 4635	4887	4859 4581	4830	4802	4774 4501	4746	4718	4690	54	10 9	14 13	19 18	23 22
7679	44	4396	4370	4344	4318	4293	4267	4242	4217	4192	4167	4	8	13	17	21
7854	45	4142	4118	4093	4069	4044	4020	3996	3972	8949	3925	4	8	12	13	20

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NATURAL COSECANTS.

Radian.	ree.	0'	6'	12'	18'	24'	30'	36'	42'	48'	54'	Me	an	Diffe	renc	.08.
Rad	Degree.	0°-0	0°·1	0°-2	0°.3	0°·4	0° •5	0° .6	0° · 7	0°.8	0° • 9	ľ	2'	3′	4	5'
•785 •803 •820 •838 •855 •855 •873	45 46 47 48 49 50	1 *4142 3902 3673 3456 3250 3054	4118 3878 3651 3435 3230 3035	4093 3855 3629 3414 3210 3016	4069 3832 3607 3393 3190 2997	4044 3809 3585 3373 3171 2978	4020 3786 3563 3352 3151 2960	3996 3763 3542 3331 3131 2941	3972 3741 3520 3311 3112 2923	3949 3718 3499 3291 3093 2904	3925 3096 3478 3270 3073 2886	44433	887776	12 11 11 10 10 10	16 15 14 14 13 13	20 19 18 17 16 15
•890 •908 •925 •942 •960	51 52 53 54 55	2868 2690 2521 2361 2208	2849 2673 2505 2345 2193	2831 2656 2489 2329 2178	2813 2639 2472 2 314 2163	2796 2622 2456 2299 2149	2778 2605 2440 2283 2134	2760 2588 2424 2268 2120	2742 2571 2408 2253 2105	2725 2554 2392 2238 2091	2708 2538 2376 2223 2076	33332	66555	99887	12 12 11 10 10	15 14 13 13 12
•977 •995 1•012 1•030 1•047	56 57 58 59 60	2062 1924 1792 1666 1547	2048 1910 1779 1654 1535	2034 1897 1766 1642 1524	2020 1883 1753 1630 1512	2006 1870 1741 1618 1501	1992 1857 1728 1606 1490	1978 1844 1716 1594 1478	1964 1831 1703 1582 1467	1951 1818 1691 1570 1456	1937 1805 1679 1559 1445	2 2 2 2 2 2 2	54444	77666	9 9 8 8 7	12 11 10 10 9
1.065 1.082 1.100 1.117 1.117 1.184	61 62 63 64 65	1434 1326 1223 1126 1034	1423 1315 1213 1117 1025	1412 1305 1203 1107 1016	1401 1294 1194 1098 1007	1390 1284 1184 1089 0998	1379 1274 1174 1079 0989	1368 1264 1164 1070 0981	1357 1253 1155 1061 0972	1347 1243 1145 1052 0963	1336 1233 1136 1043 0955	2 2 2 2 2 1	4 3 3 3 3 3	55554	7 7 6 6 6	99887
1·152 1·169 1·187 1·204 1·222	66 67 68 69 70	0946 0864 0785 0711 0642	0938 0856 0778 0704 0635	0929 0848 0770 0697 0628	0921 0840 0763 0690 0622	0913 0832 0755 0683 0615	0904 0824 0748 0676 0608	0396 0816 0740 0669 0602	0888 0808 0733 0662 0595	0880 0801 0726 0655 0589	0872 0793 0719 0649 0583	1 1 1 1	33222	44443	65554	7 6 6 6 6
1·239 1·257 1·274 1·292 1·309	71 72 73 74 75	0576 0515 0457 0403 0358	0570 0509 0451 0398 0348	0564 0503 0446 0393 0343	0557 0497 0440 0388 0338	0551 0491 0435 0382 0334	0545 0485 0429 0377 0329	0539 0480 0424 0372 0324	0533 0474 0419 0367 0320	0527 0468 0413 0363 0315	0521 0463 0408 0358 0311	1 1 1 1 1	22222	3 3 3 3 3 2	44433	55444
1·326 1·344 1·361 1·379 1·396	76 77 78 79 80	0306 0263 0223 0187 0154	0302 0259 0220 0184 0151	0297 0255 0216 0180 0148	0293 0251 0212 0177 0145	0288 0247 0209 0174 0142	0284 0243 0205 0170 0139	0280 0239 0201 0167 0136	0276 0235 0198 0164 0133	0271 0231 0194 0161 0130	0267 0227 0191 0157 0127	1 1 1 1 0	1 1 1 1 1	2 2 2 2 2 2 2 1	33222 2	43332
1·414 1·431 1·449 1·466 1·484	81 82 83 84 85	0125 0098 0075 0055 0038	0122 0096 0073 0053 0037	0119 0093 0071 0051 0035	0116 0091 0069 0050 0034	0114 0089 0067 0048 0032	0111 0086 0065 0046 0031	0108 0084 0063 0045 0030	0106 0082 0061 0043 0028	0103 0079 0059 0041 0027	0101 0077 0057 0040 0026	0 0 0 0 0	1 1 1 1 0	1 1 1 1	2 2 1 1 1	2 2 2 1 1
1·501 1·518 1·536 1·553 1·553 1·571	86 87 88 89 90	0024 0014 0006 0002 1.0000	0023 0013 0006 0001	0022 0012 0005 0001	0021 0011 0004 0001	0020 0010 0004 0001	0019 0010 0003 0000	0018 0009 0003 0000	0017 0008 0003 0000	0016 0007 0002 0000	0015 0007 0002 0000	0 0 0 0	0 0 0 0	1 0 0 0	1 1 0 0	1 1 0 0

ARCS AND CHORDS.

	0'	20'	40'	0	0'	20	40'		0'	20'	40'
0	0.0000	0.0058	0.0116	60	1:0000	1.0050	1.0101	120	1.7321	1.7350	1.7378
1	0.0175	0.0233	0.0291	61	1:0151	1.0201	1.0251	121	1.7407	1.7436	1.7464
2	0.0349	0.0407	0.0465	62	1:0301	1.0351	1.0400	122	1.7492	1.7521	1.7549
3	0.0524	0.0582	0.0640	63	1:0450	1.0500	1.0549	123	1.7576	1.7604	1.7632
4	0.0698	0.0756	0.0814	64	1:0598	1.0648	1.0697	124	1.7659	1.7686	1.7713
5	0.0872	0.0931	0.0989	65	1:0746	1.0795	1.0844	125	1.7740	1.7767	1.7794
6	0·1047	0.1105	0.1163	66	1.0893	1.0942	1.0990	126	1.7820	1.7846	1.7873
7	0·1221	0.1279	0.1337	67	1.1039	1.1087	1.1136	127	1.7899	1.7925	1.7950
8	0·1395	0.1453	0.1511	68	1.1184	1.1232	1.1280	128	1.7976	1.8001	1.8027
9	0·1569	0.1627	0.1685	69	1.1328	1.1376	1.1424	129	1.8052	1.8077	1.8101
10	0·1743	0.1801	0.1859	70	1.1472	1.1519	1.1567	130	1.8126	1.8151	1.8175
11	0·1917	0·1975	0.2033	71	1.1614	1.1661	1·1709	131	1.8199	1.8223	1.8247
12	0·2091	0·2148	0.2206	72	1.1756	1.1803	1·1850	132	1.8271	1.8294	1.8318
13	0·2264	0·2322	0.2380	73	1.1896	1.1943	1·1990	133	1.8341	1.8364	1.8387
14	0·2437	0·2495	0.2553	74	1.2036	1.2083	1·2129	134	1.8410	1.8433	1.8455
15	0·2611	0·2668	0.2726	75	1.2175	1.2221	1·2267	135	1.8478	1.8500	1.8522
16	0.2783	0·2841	0·2899	76	1·2313	1.2359	1·2405	136	1.8544	1.8565	1.8587
17	0.2956	0·3014	0·3071	77	1·2450	1.2496	1·2541	137	1.8608	1.8630	1.8651
18	0.3129	0·3186	0·3244	78	1·2586	1.2632	1·2677	138	1.8672	1.8692	1.8713
19	0.3301	0·3358	0·3416	79	1·2722	1.2766	1·2811	139	1.8733	1.8754	1.8774
20	0.3473	0·3530	0·3587	80	1·2856	1.2900	1·2945	140	1.8794	1.8814	1.8833
21	0·3645	0·3702	0·3759	81	1.2989	1·3033	1·3077	141	1.8853	1.8872	1.8891
22	0·3816	0·3873	0·3930	82	1.3121	1·3165	1·3209	142	1.8910	1.8929	1.8948
23	0·3987	0·4044	0·4101	83	1.3252	1·3296	1·3339	143	1.8966	1.8985	1.9003
24	0·4158	0·4215	0·4272	84	1.3383	1·3426	1·3469	144	1.9021	1.9039	1.9057
25	0·4329	0·4386	0·4442	85	1.3512	1·3555	1·3597	145	1.9074	1.9092	1.9109
26	0.4499	0.4556	0.4612	86	1·3640	1·3682	1·3725	146	1.9126	1.9143	1.9160
27	0.4669	0.4725	0.4782	87	1·3767	1·3809	1·3851	147	1.9176	1.9193	1.9209
28	0.4838	0.4895	0.4951	88	1·3893	1·3935	1·3977	148	1.9225	1.9241	1.9257
29	0.5008	0.5064	0.5120	89	1·4018	1·4060	1·4101	149	1.9273	1.9288	1.9303
30	0.5176	0.5233	0.5289	90	1·4142	1·4183	1·4224	150	1.9319	1.9333	1.9348
31	0.5345	0.5401	0·5457	91	1·4265	1·4306	1·4346	151	1 9363	1.9377	1.9392
32	0.5513	0.5569	0·5625	92	1·4387	1·4427	1·4467	152	1 9406	1.9420	1.9434
33	0.5680	0.5736	0·5792	93	1·4507	1·4547	1·4587	153	1 9447	1.9461	1.9474
34	0.5847	0.5903	0·5959	94	1·4627	1·4667	1·4706	154	1 9487	1.9500	1.9513
35	0.6014	0.6070	0·6125	95	1·4746	1·4785	1·4824	155	1 9526	1.9538	1.9551
36	0.6180	0.6236	0.6291	96	1·4863	1.4902	1·4941	156	1.9563	1.9575	1.9587
37	0.6346	0.6401	0.6456	97	1·4979	1.5018	1·5056	157	1.9598	1.9610	1.9621
38	0.6511	0.6566	0.6621	98	1·5094	1.5132	1·5170	158	1.9633	1.9644	1.9654
39	0.6676	0.6731	0.6786	99	1·5208	1.5246	1·5283	159	1.9665	1.9676	1.9686
40	0.6840	0.6895	0.6950	100	1·5321	1.5358	1·5395	160	1.9696	1.9706	1.9716
41	0.7004	0.7059	0.7113	101	1.5432	1·5469	1.5506	161	1.9726	1.9735	1.9745
42	0.7167	0.7222	0.7276	102	1.5543	1·5579	1.5616	162	1.9754	1.9763	1.9772
43	0.7330	0.7384	0.7438	103	1.5652	1·5688	1.5724	163	1.9780	1.9789	1.9797
44	0.7492	0.7546	0.7600	104	1.5760	1·5796	1.5832	164	1.9805	1.9813	1.9821
45	0.7654	0.7707	0.7761	105	1.5867	1·5902	1.5938	165	1.9829	1.9836	1.9844
46	0.7815	0.7868	0.7922	106	1.5973	1.6008	1.6042	166	1.9851	1.9858	1.9865
47	0.7975	0.8028	0.8082	107	1.6077	1.6112	1.6146	167	1.9871	1.9878	1.9884
48	0.8135	0.8188	0.8241	108	1.6180	1.6214	1.6248	168	1.9890	1.9896	1.9902
49	0.8294	0.8347	0.8400	109	1.6282	1.6316	1.6350	169	1.9908	1.9913	1.9919
50	0.8452	0.8505	0.8558	110	1.6383	1.6416	1.6450	170	1.9924	1.9929	1.9934
51	0.8610	0.8663	0.8715	111	1.6483	$\begin{array}{r} 1.6515 \\ 1.6613 \\ 1.6710 \\ 1.6805 \\ 1.6899 \end{array}$	1.6548	171	1.9938	1.9943	1 9947
52	0.8767	0.8820	0.8872	112	1.6581		1.6646	172	1.9951	1.9955	1 9959
53	0.8924	0.8976	0.9028	113	1.6678		1.6742	173	1.9963	1.9966	1 9969
54	0.9080	0.9132	0.9183	114	1.6773		1.6836	174	1.9973	1.9976	1 9978
55	0.9235	0.9287	0.9338	115	1.6868		1.6930	175	1.9981	1.9983	1 9986
56	0.9389	0.9441	0.9492	116	1.6961	1.6992	1.7022	176	1.9988	1 ·9990	1 9992
57	0.9543	0.9594	0.9645	117	1.7053	1.7083	1.7113	177	1.9993	1 ·9995	1 9996
58	0.9696	0.9747	0.9798	118	1.7143	1.7173	1.7203	178	1.9997	1 ·9998	1 9999
59	0.9848	0.9899	0.9950	119	1.7233	1.7262	1.7291	179	1.9999	2 ·0000	2 0000
60	1.0000	1.0050	1.0101	120	1.7321	1.7350	1.7378	180	2.0000	2 ·0000	2 0000

CIRCULAR FUNCTIONS TO RADIANS.

4

Degues	Radian.	Sine.	Descent	Charling		Logarithm of	
Degree.	Ladian.	,	Tangent.	Cosme,	Sine.	Tangent.	Cosine.
5.73	·10	•0998		·9950	2-9993	1.0015	1.9978
6.30	.11	·1098	•1104	•9940	1.0405	m°0431	11.9974
6.88	.12	.1197	.1206	•9928	11.0781	11'0813	11*9969
7·45 8·02	·13 ·14	·1296 ·1395	·1307 ·1409	*9916 *9902	u*1127 u*1447	1164 11°1490	11*9963 11*9957
8.59	.15	1395	1405	•9888	11745	nº1794	"·9951
9·17 9·74	·16 ·17	•1593	.1614	·9872	11.2023	11-2078	n-9944
10.31	18	·1692 ·1790	·1717 ·1820	•9856 •9839	11°2284 11°2529	11°2347 11°2600	11*9937 11*9929
10.89	.19	.1889	1923	·9820	11'2761	1º2840	11 9921
11.46	•20	·1987	2027	-9801	ıı [•] 2981	11*3069	ıı 9913
12.03 12.61	·21 ·22	•2085 •2182	·2131 ·2236	•9780 •9759	11·3190 11·3389	11.3287 11.3495	11.9904 11.9894
13.18	23	*2280	*2341	9737	11.3579	11.3695	11 9884
13.75	-24	•2377	•2447	9713	11.3760	u'3887	11 9874
14.32	•25	•2474	*2553	•9689	11.3934	H*4071	u [•] 9863
14.90	-26	.2571	•2660	*9664	w·4101	11.4249	11.9852
15·47 16·04	·27 ·28	•2667 •2764	*2768 *2876	·9638 ·9611	11.4261 11.4415	11°4421 11°4587	# 9840 # 9827
16.62	-29	•2859	•2984	.9583	1.4563	11-4748	11 9815
17.19	.30	•2955	•3093	*9553	n·4706	n*4904	11*9802
17.76	·31 ·32	•3051	*3203	·9523 ·9492	11-4844	11*5056 11*5203	11°9788
18.33 18.91	-32	·3146 ·3240	*2314 *3425	·9492 ·9460	11.4977 11.5106	11.5203	11.9774 11.9759
19.48	•34	•3335	*3537	.9428	11.5231	11.5487	11.9744
20.05	•35	•3429	•3650	·9394	11*5352	n*5623	11*9728
20.63	•36	•3523	•3764	·9359	11.5469	11*5757	H*9712
21 20 21 77	·37 ·38	*3616 *3709	·3879 ·3994	*9323 *9287	11*5582 11*5693	11°5887 11°6014	11°9696 11°9679
22.34	.39	*3802	•4111	9249	11.2800	1.6139	1.9661
22.92	•40	.3894	•4228	·9211	11.5904	u*6261	11 9643
23.49	•41	•3986	•4346	•9171	n*6005	11.6381	11'9624
24.06 24.64	·42 ·43	·4078 ·4169	*4466 *4586	·9131 ·9090	10°6104 11°6200	11.6499 11.6615	11.960(i 11.9586
25.21	•44	•4259	•4708	•9048	11.6293	11.6728	11.9565
25.78	.45	•4350	•4831	*9005	nº6385	ıı 6840	ıı*9545
26.36	•46	•4439	•4954	*8961	nº6473	n 6950	11 9523
26·93 27·50	·47 ·48	·4529 ·4618	*5080 *5206	*8916 *8870	11°6560 11°6644	n 7058 n 7165	11 9502 11 9479
28.07	-49	•4706	•5334	*8823	11.6727	117270	1.9456
28.65	•50	•4794	•5463	*8776	···6807	11 7374	n·9433
29.22	.51	*4882	•5594	·8727	11.6886	11.7477	11-9409
29·79 30·37	·52 ·53	·4969 ·5055	*5726	*8678 *8628	n 6962 n 7037	n 7578 n 7678	11*9384 11*9359
30.94	.54	.5141	*5994	*8577	11.7111	11-7777	11 9333
31.51	·55	•5227	•6131	*8525	11.7182	ıı 7875	11*9307
32.09	•56	•5312	•6269	•8473	11.7253	···7972	n 9280
32.66	·57 ·58	*5396	*6410	·8419	11 7321	n*8068	11-9253 11-9224
							11°9224
34 37	.60	•5646	•6841	*8253	"7518	11.8351	11.9166
33 ·23 33 ·80 34 37	.59	*5564 *5646	•6552 •6696 •6841	*8365 *8309 *8253	"*7388 "*7454 "*7518	11 ⁸¹⁶⁴ 11 ⁸²⁵⁸ 11 ⁸³⁵¹	11.919

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CIRCULAR FUNCTIONS TO RADIANS.

D	Radian.	Sine.	Tananh	Classica	Contra 12	Logarithms o	ſ
Degree.	Radian.	Sine.	Tangent.	Cosine.	Sine.	Tangent.	Cosine.
34·38 34·95 35·52 36·10 36·67 37·24	·60 ·61 ·62 ·63 ·64 ·65	*5646 *5729 *5810 *5891 *5972 *6052	0.6841 0.6989 0.7139 0.7291 0.7445 0.7602	*8253 *8196 *8139 *8080 *8021 *7961	1·7518 ···7581 ···7642 ···7702 ···7761 ···7819	1-8351 	1.9166 9136 9106 9074 9042 9010
37.82	-66	•6131	0.7761	·7900	11.7875	11 ⁻⁸⁸⁹⁹	11*8976
38.39	-67	•6210	0.7923	·7838	11.7931	11 ⁻⁸⁹⁸⁹	11*8942
38.96	-68	•6288	0.8087	·7776	11.7985	11 ⁻⁹⁰⁷⁸	11*8907
39.53	-69	•6365	0.8253	·7712	11.8038	11 ⁻⁹¹⁶⁶	11*8872
40.11	-70	•6442	0.8423	·7648	11.8090	11 ⁻⁹²⁵⁵	11*8836
40.68	·71	•6518	0.8595	·7584	11*8141	11 ⁻⁹³⁴³	11*8799
41.25	·72	•6594	0.8771	·7518	11*8191	11 ⁻⁹⁴³⁰	11*8761
41.83	·73	•6669	0.8949	·7452	11*8240	11 ⁻⁹⁵¹⁸	11*8723
42.40	·74	•6743	0.9131	·7385	11*8288	11 ⁻⁹⁶⁰⁵	11*8683
42.97	·75	•6816	0.9316	·7317	11*8336	11 ⁻⁹⁶⁹²	11*8643
43.54	·76	-6889	0-9505	·7248	11*8382	11 ⁻⁹⁷⁷⁹	11*8602
44.12	·77	-6961	0-9697	·7179	11*8427	11 ⁻⁹⁸⁶⁶	11*8561
44.69	·78	-7033	0-9893	·7109	11*8471	11 ⁻⁹⁹⁵³	11*8518
45.26	·79	-7104	1-0092	·7038	11*8515	0 ⁻⁰⁰⁴⁰	11*8475
45.84	·80	-7174	1-0296	·6967	11*8557	0 ⁻⁰¹²⁷	11*8430
46.41 46.98 47.56 48.13 48.70	-81 -82 -83 -84 -85	·7243 ·7311 ·7379 ·7446 ·7513	1.0505 1.0717 1.0934 1.1156 1.1383	*6895 *6822 *6749 *6675 *6600	11 ^{*8599} 11 ^{*8640} 11 ^{*8680} 11 ^{*8720} 11 ^{*8758}	0.0214 0.0301 0.0388 0.0475 0.0563	11*8385 11*8339 11*8292 11*8292 11*8244 11*8195
49.27 49.85 50.42 50.99 51.57	-86 -87 -88 -89 -90	•7578 •7643 •7707 •7771 •7833	1·1616 1·1853 1·2097 1·2346 1·2602	*6524 *6448 *6372 *6294 *6216	11*8796 11*8833 11*8869 11*8905 11*8939	0.0650 0.0738 0.0827 0.0915 0.1004	11.8145 11.8094 11.8042 11.7989 11.7989 11.7935
52.14	-91	·7895	1.2864	*6137	11*8974	0·1094	11*7880
52.71	-92	·7956	1.3133	*6058	11*9007	0·1184	11*7823
53.29	-93	·8016	1.3409	*5978	11*9040	0·1274	11*7766
53.86	-94	·8076	1.3392	*5898	11*9072	0·1365	11*7707
54.43	-95	·8134	1.3984	*5817	11*9103	0·1456	11*7647
55.00	-96	·8192	1·4284	*5735	"*9134	0·1548	11*7585
55.58	-97	·8249	1·4592	*5653	"*9164	0·1641	11*7523
56.15	-98	·8305	1·4909	*5570	"*9193	0·1785	11*7459
56.72	-99	·8360	1·5237	*5487	"*9222	0·1829	11*7393
57.30	1.00	·8415	1·5574	*5403	"*9250	0·1924	11*7326
57.87	1.01	*8468	1.5922	·5319	11*9278	0·2020	"*7258
58.44	1.02	*8521	1.6281	·5234	11*9305	0·2117	"*7188
59.01	1.03	*8573	1.6653	·5148	11*9331	0·2215	"*7117
59.59	1.04	*8624	1.7036	·5062	11*9357	0·2314	"*7043
60.16	1.05	*8674	1.7433	·4976	11*9382	0·2414	"*6969
60.73	1.06	*8724	1.7844	· •4889	11*9407	0.2515	11.6892
61.31	1.07	*8772	1.8270	•4801	11*9431	0.2618	11.6814
61.88	1.08	*8820	1.8712	•4713	11*9454	0.2721	11.6733
62.45	1.09	*8866	1.9171	•4625	11*9477	0.2826	11.6651
63.03	1.10	*8912	1.9648	•4536	11*9500	0.2933	11.6567

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CIRCULAR FUNCTIONS TO RADIANS.

Damma	Dedian	<u>(11</u>	Tourset	Cardina		Logarithms o	f
Degree.	Radian.	Sine.	Tangent.	Cosine.	Sine.	Tangent.	Cosine.
63.03	1·10	-8912	1.965	*4536	1·9500	0 ^{.2933}	1.6567
63.60	1·11	-8957	2.014	*4447	••'9522	0 ^{.3041}	6480
64.17	1·12	-9001	2.066	*4357	••'9543	0 ^{.3151}	6392
64.74	1·13	-9044	2.120	*4267	••'9564	0 ^{.3263}	6301
65.32	1·14	-9086	2.176	*4176	••'9584	0 ^{.3376}	6208
65.89	1·15	-9128	2.234	*4085	••'9604	0 ^{.3376}	6112
66.46	1·16	•9168	2·296	·3993	11 ^{•9623}	0.3609	"*6013
67.04	1·17	•9208	2·360	·3902	11 ^{•9641}	0.3729	"*5912
67.61	1·18	•9246	2·427	·3809	11 ^{•9660}	0.3851	"*5808
68.18	1·19	•9284	2·498	·3717	11 ^{•9677}	0.3976	"*5701
68.75	1·20	•9320	2·572	·3624	11 ^{•9694}	0.4103	"*5591
69·33 69·90 70·47 71·05 71·62	1·21 1·22 1·23 1·24 1·25	-9356 -9391 -9425 -9458 -9490	2.650 2.733 2.820 2.912 3.010	•3530 •3436 •3342 •3248 •3153	"*9711 "*9727 "*9743 "*9758 "*9773	0.4233 0.4366 0.4502 0.4642 0.4642 0.4785	"5478 "5361 "5241 "5116 "4988
72·19	1.26	-9521	3·113	*3058	11 [•] 9787	0.4932	"4855
72·77	1.27	-9551	3·224	*2963	11 [•] 9800	0.5083	"4717
73·34	1.28	-9580	3·341	*2867	11 [•] 9814	0.5239	"4575
73·91	1.29	-9608	3·467	*2771	11 [•] 9826	0.5400	"4427
74·48	1.30	-9636	3·602	*2675	11 [•] 9839	0.5566	"4273
75.06 75.63 76.20 76.78 77.35	1.31 1.32 1.33 1.34 1.35	-9662 -9687 -9712 -9735 -9757	3.747 3.903 4.072 4.256 4.455	·2579 ·2482 ·2385 ·2288 ·2190	11*9851 11*9862 11*9873 11*9883 11*9883 11*9893	0.5737 0.5914 0.6098 0.6290 0.6489	"4114 "3948 "3774 "3594 "3594 "3405
77.92	1:36	-9779	4.674	*2092	"*9903	0.6696	"*3206
78.50	1:37	-9799	4.913	*1995	"*9912	0.6914	"*2998
79.07	1:38	-9819	5.177	*1896	"*9920	0.7141	"*2779
79.64	1:39	-9837	5.471	*1798	"*9929	0.7380	"*2548
80.21	1:40	-9854	5.798	*1700	"*9936	0.7633	"*2304
80.79	1·41	·9871	6·165	·1601	"*9944	0 ^{.7900}	"2044
81.36	1·42	·9886	6·581	·1502	"*9950	0 ^{.8183}	"1767
81.93	1·43	·9901	7·055	·1403	"*9957	0 ^{.8485}	"1472
82.51	1·44	·9915	7·619	·1304	"*9963	0 ^{.8819}	"1154
83.08	1·45	·9927	8·238	·1205	"*9968	0 ^{.9158}	"0810
83.65	1:46	*9939	8.989	·1106	"*9973	0 [.] 9537	"•0436
84.23	1:47	*9949	9.887	·1006	"*9978	0 [.] 9951	<u>"</u> •0027
84.80	1:48	*9959	10.984	·0907	"*9982	1 [.] 0407	2•9575
85.37	1:49	*9967	12.350	·0807	"*9986	1 [.] 0917	"•9069
85.94	1:50	*9975	14.101	·0707	"*9986	1 [.] 1493	"•8497
86.52	1.51	-9982	16:428	*0608	11*9992	1.2156	"*7836
87.09	1.52	-9987	19:670	*0508	11*9994	1.2938	"*7056
87.66	1.53	-9992	24:499	*0408	11*9996	1.3891	"*6105
83.24	1.54	-9995	33:138	*0302	11*9998	1.5203	"*4795
88.81	1.55	-9998	48:101	*0208	11*9999	1.6821	"*3178
89·38 89·95 90·00	1·56 1·57 <i>π</i> /2	-9999 1.0000 1.0000	92.623 1255.866 ∞	•0108 •0080 •0000	0.0000 0.0000	1.9667 3.0989 +∞	0333 3∙9011 -∞

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POWERS OF NUMBERS.

n	n-1	<u>n</u> 2	n ⁸	√n	√10n	∛n -	~10n	Diff.	*/100n
1 2 3 4 5	1 •5 •8333338 *25 *2	1 4 9 16 25	1 8 • 27 64 125	1 1·4142 1·7321 2 2·2361	3·1623 4·4721 5·4772 6·3246 7·0711	1 1·2599 1·4422 1·5874 1·7100	2·1544 2·7144 3·1072 3·4200 3·6840	th the preced- , this table of may be used lation.	4.6416 5.8480 6.6943 7.3681 7.9370
6 7 8 9 10	·166667 ·142857 ·125 ·111111 ·1	36 49 64 81 1 00	216 343 512 729 1 000	2:4495 2:6458 2:8284 3 3:1623	7.7460 8.3666 8.9443 9.4868 10	1.8171 1.9129 2 2.0801 2.1544	3-9149 4-1213 4-3089 4-4814 4-6416	Along with the pi the ing column, this ta differences may be for interpolation.	8·4343 8·8790 9·2832 9·6549 10
11	*090909	1 21	1 331	3·3166	10·488	2·2240	4·7914	1410	10:323
12	*083333	1 44	1 728	3·4641	10·954	2·2894	4·9324	1334	10:627
13	*076923	1 69	2 197	3·6056	11·402	2·3513	5·0658	1267	10:914
14	*071429	1 96	2 744	3·7417	11·832	2·4101	5·1925	1208	11:187
15	*066667	2 25	8 375	3·8730	12·247	2·4662	5·3133	1155	11:447
16	*0625	2 56	4 096	4	12.649	2.5198	5-4288	1109	11.696
17	*058824	2 89	4 913	4·1231	13.038	2.5713	5-5397	1065	11.985
18	*055556	3 24	5 832	4·2426	13.416	2.6207	5-6462	1027	12.164
19	*052632	3 61	6 859	4·3589	13.784	2.6684	5-7489	991	12.386
20	*05	4 00	8 000	4·4721	14.142	2.7144	5-8480	959	12.599
21	047619	4 41	9 261	4.5826	14·491	2.7589	5-9439	929	12:806
22	*045455	4 84	10 648	4.6904	14·832	2.8020	6-0368	901	13:006
23	*043478	5 29	12 167	4.7958	15·166	2.8439	6-1269	876	13:200
24	*041667	5 76	13 824	4.8990	15·492	2.8845	6-2145	851	13:389
25	*04	6 25	15 625	5	15·811	2.9240	6-2996	829	13:572
26	*038462	6 76	17 576	5.0990	16·125	2.9625	6·3825	808	13.751
27	*037037	7 29	19 683	5.1962	16·432	3	6·4633	788	13.925
28	*035714	7 84	21 952	5.2915	16·733	3.0366	6·5421	770	14.095
29	*034483	8 41	24 389	5.3852	17·029	3.0723	6·6191	752	14.260
3 0	*033333	9 00	27 000	5.4772	17·321	3.1072	6·6943	736	14.422
31	-032258	9 61	29 791	5.5678	17.607	3·1414	6.7679	720	14·581
32	-03125	10 24	32 768	5.6569	17.889	3·1748	6.8399	705	14·736
33	-030303	10 89	35 937	5.7446	18.166	3·2075	6.9104	691	14·888
34	-029412	11 56	39 304	5.8310	18.439	3·2396	6.9795	688	15·037
35	-028571	12 25	42 875	5.9161	18.708	3·2711	7.0473	665	15·183
36	-027778	12 96	46 656	6	18.974	8·3019	7 1138	653	15·326
37	-027027	13 69	50 653	6·0828	19.235	3·3322	7 1791	641	15·467
38	-026316	14 44	54 872	6·1644	19.494	3·3620	7 2432	629	15·605
39	-025641	15 21	59 319	6·2450	19.748	3·3912	7 3001	620	15·741
40	-025	16 00	64 000	6·3246	20	3·4200	7 3681	609	15·874
41	*024390	16 81	68 921	6 • 4031	20*248	8-4482	7 •4290	599	16:005
42	*023810	17 64	74 088	6 • 4807	20*494	3-4760	7 •4889	589	16:134
43	*023256	18 49	79 507	6 • 5574	20*736	3-5034	7 •5478	581	16:261
44	*022727	19 36	85 184	6 • 6332	20*976	3-5303	7 •6059	572	16:386
45	*0222222	20 25	91 125	6 • 7082	21*213	8-5569	7 •6631	563	16:510
46	*021739	21 16	97.336	6.7823	21·448	3.5830	7·7194	556	16.631
47	*021277	22 09	103.823	6.8557	21·679	3.6088	7·7750	547	16.751
48	*020833	23 04	110.592	6.9282	21·909	3.6342	7·8297	540	16.869
49	*020408	24 01	117.649	7	22·136	3.6593	7·8837	533	16.985
50	*02	25 00	125.000	7.0711	22·361	3.6840	7·9370	526	17.100

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POWERS OF NUMBERS.

n	<u>n</u> -1	n ³	<u>n</u> \$	√n	√10n	∛n	∛ <u>10n</u>	Diff.	*100n
51	-019608	26 01	132 651	7·1414	22.593	3·7084	7:9896	519	17·213
52	-019231	27 04	140 608	7·2111	22.804	3·7325	8:0415	512	17·325
53	-018868	28 09	148 877	7·2801	23.022	3·7563	8:0927	506	17·435
54	-018519	29 16	157 464	7·3485	23.238	3·7798	8:1433	499	17·544
55	-018182	30 25	166 375	7·4162	23.452	3·8030	8:1932	494	17·652
56	-017857	81 86	175 616	7·4833	23.664	8.8259	8·2426	487	17.758
57	-017544	32 49	185 193	7·5498	23.875	3.8485	8·2913	483	17.863
58	-017241	33 64	195 112	7·6158	24.083	3.8709	8·3396	476	17.967
59	-016949	34 81	205 379	7·6811	24.290	3.8930	8·3872	471	18.070
60	-016667	36 00	216 000	7·7460	24.495	3.9149	8·4343	466	18.171
61	*016393	37 21	226 981	7.8102	24.698	3.9365	8:4809	461	18.272
62	*016129	38 44	238 328	7.8740	24.900	3.9579	8:5270	456	18.371
63	*015873	39 69	250 047	7.9373	25.100	3.9791	8:5726	451	18.469
64	*015625	40 96	262 144	8	25.298	4	8:6177	447	18.566
65	*015385	42 25	274 625	8.0623	25.495	4.0207	8:6624	442	18.663
66	·015152	43 56	287 496	8·1240	25.690	4.0412	8.7066	437	18*758
67	·014925	44 89	300 763	8·1854	25.884	4.0615	8.7503	434	18*852
68	·014706	46 24	814 432	8·2462	26.077	4.0817	8.7937	429	18*945
69	·014493	47 61	328 509	8·3066	20.268	4.1016	8.8366	424	19*038
70	·014286	49 00	343 000	8·3666	26.458	4.1213	8.8790	421	19*129
71	-014085	50 41	357 911	8:4261	26.646	4.1408	8-9211	417	19:220
72	-013889	51 84	373 248	8:4853	26.833	4.1602	8-9628	413	19:310
73	-013699	53 29	389 017	8:5440	27.019	4.1793	9-0041	409	19:399
74	-013514	54 76	405 224	8:6023	27.203	4.1983	9-0450	406	19:487
75	-013333	56 25	421 875	8:6603	27.386	4.2172	9-0856	402	19:574
76	-013158	57 76	438 976	8-7178	27.568	4·2358	9·1258	399	19.661
77	-012987	59 29	456 533	8-7750	27.749	4·2543	9·1657	395	19.747
78	-012821	60 84	474 552	8-8318	27.928	4·2727	9·2052	391	19.832
79	-012658	62 41	493 039	8-8882	28.107	4·2908	9·2443	389	19.916
80	-0125	64 00	512 000	8-9443	28.284	4·3089	9·2832	385	20
81	012346	65 61	531 441	9	28:460	4·3267	9:3217	382	20*083
82	•012195	67 24	551 368	9·0554	28:636	4·3445	9:3599	379	20*165
83	•012048	63 89	571 787	9·1104	28:810	4·3621	9:3978	376	20*247
84	•011905	70 56	592 704	9·1652	28:983	4·3795	9:4354	373	20*328
85	•011765	72 25	614 125	9·2195	29:155	4·3968	9:4727	370	20*408
86	*011628	73 96	636 056	9·2736	29·326	4.4140	9:5097	367	20.488
87	*011494	75 69	658 503	9·3274	29·496	4.4310	9:5464	364	20.567
83	*011364	77 44	681 472	9·3808	29·665	4.4480	9:5828	362	20.646
89	*011236	79 21	704 969	9·4340	29·833	4.4647	9:6190	359	20.724
90	*011111	81 00	729 000	9·4868	30	4.4814	9:6549	357	20.801
91	-010989	82 81	753 571	9.5394	30°166	4·4979	9.6905	354	20.878
92	-010870	84 64	778 688	9.5917	30°332	4·5144	9.7259	351	20.954
93	-010753	86 49	804 357	9.6437	80°496	4·5307	9.7610	349	21.029
94	-010638	83 36	830 584	9.6954	80°659	4·5468	9.7959	346	21.105
95	-010526	90 25	857 375	9.7468	30°822	4·5629	9.8305	343	21.179
96 97 98 99 100	-010417 -010309 -010204 -010101 -01	92 16 94 09 96 04 98 01 100 00	884 736 912 673 941 192 970 299 1000 000	9.7980 9.8489 9.8995 9.9499 10	30.984 31.145 31.305 31.464 81.623	4.5789 4.5947 4.6104 4.6261 4.6416	9-8648 9-8990 9-9329 9-9666 10	342 339 337 334	21·253 21·327 21·400 21·472 21·544

RECIPROCALS OF NUMBERS.

The reciprocals are given to the first four figures, no account being taken of 'place-value.'

umber.	0	1	2	3	4	5	6	7	8	9		M		Dif				b b	e
Num			-								1	2	3	4	5	6	7	8	9
- 03			100		1		1000			14,1	-				-		-	3	-
10 11 12 13 14 15	1000 9091 8333 7692 7143 6667	9901 9009 8264 7634 7092 6623	9804 8929 8197 7576 7042 6579	9709 8850 8130 7519 6993 6536	9615 8772 8065 7463 6944 6494	9524 8696 8000 7407 6897 6452	9434 8621 7937 7353 6849 6410	9346 8547 7874 7299 6803 6369	9259 8475 7813 7246 6757 6329	9174 8403 7752 7194 6711 6289	986554	18 15 13 11 10 8	27 23 19 16 14 13	36 30 26 22 19 17	45 38 32 27 24 21	55 45 38 33 29 25	64 53 45 38 33 29	73 61 51 44 38 33	82 68 58 49 43 38
16 17 18 19 20	6250 5882 5556 5263 5000	6211 5848 5525 5236 4975	6173 5814 5495 5208 4950	6135 5780 5464 5181 4926	6098 5747 5435 5155 4902	6061 5714 5405 5128 4878	6024 5682 5376 5102 4854	5988 5650 5348 5076 4831	5952 5618 5319 5051 4808	5917 5587 5291 5025 4785	433322	77655	11 10 9 8 7	15 13 12 11 10	18 16 15 13 12	20 18 16	26 23 21 18 17	29 26 23 21 19	33 29 26 24 21
21 22 23 24 25	4762 4545 4348 4167 4000	4739 4525 4329 4149 3984	4717 4505 4310 4132 3968	4695 4484 4292 4115 3953	4673 4464 4274 4098 3937	4651 4444 4255 4082 3922	4630 4425 4237 4065 3906	4608 4405 4219 4049 3891	4587 4386 4202 4032 3876	4566 4367 4184 4016 3861	222222	44433	76555	98776	10 9	13 12 11 10 9	15 14 13 12 11		16 15
26 27 28 29 30	3846 3704 3571 3448 3333	3831 3690 3559 3436 3322	3817 3676 3546 3425 3311	3802 3663 3534 3413 3300	3788 3650 3521 3401 3289	3774 3636 3509 3390 3279	3759 3623 3497 3378 3268	3745 3610 3484 3367 3257	3731 3597 3472 3356 3247	3717 3584 3460 3344 3236	111111	33222	44433	6555 54	77865	98776	10 9 9 8 7	11 11 10 9 9	13 12 11 10 10
31 32 33 34 35	3226 3125 3030 2941 2857	3215 3115 3021 2933 2849	3205 3106 3012 2924 2841	3195 3096 3003 2915 2833	3185 3086 2994 2907 2825	3175 3077 2985 2899 2817	316 5 3067 2976 2890 2 809	3155 3058 2967 2882 2801	3145 3049 2959 2874 2793	3135 3040 2950 2865 2786	111111	22222	00 00 00 00	44433	55444	66555	7 7 6 6 6	88776	000007
36 37 38 39 40	2778 2703 2632 2564 2500	2770 2695 2625 2558 2494	2762 2688 2618 2551 2488	2755 2681 2611 2545 2481	$\begin{array}{r} .\\ 2747\\ 2674\\ 2604\\ 2538\\ 2475\end{array}$	2740 2667 2597 2532 2469	$\begin{array}{r} 2732 \\ 2660 \\ 2591 \\ 2525 \\ 2463 \end{array}$	2725 2653 2584 2519 2457	2717 2646 2577 2513 2451	2710 2639 2571 2506 2445	111111	2 1 1 1 1	91 92 92 92 92 9	333332	44333	54444	55544	66555 5	76665
41 42 43 44 45	2439 2381 2326 2273 2222	2433 2375 2320 2268 2217	2427 2370 2315 2262 2212	2421 2364 2309 2257 2208	2415 2358 2304 2252 2203	2410 2353 2299 2247 2198	2404 2347 2294 2242 2193	2398 2342 2288 2237 2188	2392 2336 2283 2232 2183	2387 2331 2278 2227 2179	1 1 1 1 0	111111	222221	22222	333332	00 00 00 00	44443	54444	555554
46 47 48 49 50	2174 2128 2083 2041 2000	2169 2123 2079 2037 1996	2165 2119 2075 2033 1992	2160 2114 2070 2028 1988	2155 2110 2066 2024 1984	2151 2105 2062 2020 1980	2146 2101 2058 2016 1976	2141 2096 2053 2012 1972	2137 2092 2049 2008 1969	2132 2088 2045 2004 1965	0000000	111111	111111	222222	22222	333322	හ හ හ හ හ	443330	44444
51 52 53 54 55	1961 1923 1887 1852 1818	1957 1919 1883 1848 1815	1953 1916 1880 1845 1812	1949 1912 1876 1842 1808	1946 1908 1873 1838 1805	1942 1905 1869 1835 1802	1938 1901 1866 1832 1799	1934 1898 1862 1828 1795	1931 1894 1859 1825 1792	1927 1890 1855 1821 1789	000000	111111	1111111	2 1 1 1 1	22222	222222	33222	හ හ හ හ හ	00 00 00 00
56 57 58 59 60	1786 1754 1724 1695 1667	1783 1751 1721 1692 1664	1779 1748 1718 1689 1661	1776 1745 1715 1686 1658	1773 1742 1712 1684 1656	1770 1739 1709 1681 1653	1767 1736 1706 1678 1650	1764 1733 1704 1675 1647	1761 1730 1701 1672 1645	1757 1727 1698 1669 1642	000000	111111	1111111	111111	2 2 1 1 1	222222	222222	32222	30000

RECIPROCALS OF NUMBERS; AND PRIMES.

The reciprocals are given to the first four figures, no account being taken of 'place-value.'

Ľ.		1	1	1		1			1			Prime Nos. from 101 to 201				2011.
Number.	0	1	2	3	4	5	6	7	8	9	Diff.	101 108 107 109 113	421 431 433 439 443	787 797 809 811 821	1181 1187 1193 1201 1213	1583 1597 1601 1607 1609
60	1667	1664	1661	1658	1656	1653	1650	1647	1645	1642	******	127	449	823	1217	1613
61	1639	1637	1634	1631	1629	1626	1623	1621	1618	1616		131	457	827	1223	1619
62	1613	1610	1608	1605	1603	1600	1597	1595	1592	1590		137	461	829	1229	1621
63	1587	1585	1582	1580	1577	1575	1572	1570	1567	1565		139	463	839	1231	1627
64	1563	1560	1558	1555	1553	1550	1548	1546	1543	1541		149	467	853	1237	1637
65	1538	1536	1534	1531	1529	1527	1524	1522	1520	1517		151	479	853	1249	1657
66	1515	1513	1511	1508	1506	1504	1502	1499	1497	1495	22222	157	487	859	1259	1663
67	1493	1490	1488	1486	1484	1481	1479	1477	1475	1473		163	491	863	1277	1667
68	1471	1468	1466	1464	1462	1460	1458	1456	1453	1451		167	499	877	1279	1669
69	1449	1447	1445	1443	1441	1439	1437	1435	1433	1431		173	503	881	1283	1693
70	1429	1427	1425	1422	1420	1418	1416	1414	1412	1410		179	509	883	1283	1697
71	1408	1406	1404	1403	1401	1399	1397	1995	1393	1391	22220	181	521	887	1291	1699
72	1389	1387	1385	1383	1381	1379	1877	1376	1374	1872		191	523	907	1297	1709
73	1370	1368	1366	1364	1362	1361	1359	1857	1355	1353		193	541	911	1301	1721
74	1351	1350	1348	1346	1344	1342	1340	1339	1337	1335		197	547	919	1303	1723
75	1333	1332	1330	1328	1326	1325	1323	1321	1319	1318		199	557	- 929	1307	1733
76	1316	1314	1812	1311	1309	1307	1305	1304	1302	1300	20000	211	563	937	1319	1741
77	1299	1297	1295	1294	1292	1290	1289	1287	1285	1284		223	569	941	1321	1747
78	1282	1280	1279	1277	1276	1274	1272	1271	1269	1267		227	571	947	1327	1753
79	1266	1264	1263	1261	1259	1258	1256	1255	1253	1252		229	577	953	1361	1759
80	1250	1248	1247	1245	1244	1242	1241	1239	1238	1286		233	587	967	1367	1777
81	1235	1233	1232	1230	1229	1227	$1225 \\ 1211 \\ 1196 \\ 1182 \\ 1168$	1224	1222	1221	2	239	593	971	1373	1783
82	1220	1218	1217	1215	1214	1212		1209	1208	1206	2	241	599	977	1381	1787
83	1205	1208	1202	1200	1199	1198		1195	1193	1192	1	251	601	983	1399	1789
84	1190	1189	1188	1186	1185	1183		1181	1179	1178	1	257	607	991	1409	1801
85	1176	1175	1174	1172	1171	1170		1167	1166	1164	1	263	613	997	1423	1811
86	1163	1161	1160	1159	1157	1156	1155	1153	1152	1151	111111	269	617	1009	1427	1823
87	1149	1148	1147	1145	1144	1143	1142	1140	1189	1138		271	619	1013	1429	1831
88	1136	1135	1134	1133	1131	1130	1129	1127	1126	1125		277	631	1019	1433	1847
89	1124	1122	1121	1120	1119	1117	1116	1115	1114	1112		281	641	1021	1439	1861
90	1111	1110	1109	1107	1106	1105	1104	1103	1101	1100		283	643	1031	1447	1867
91	1099	1098	1096	1095	1094	1093	1092	1091	1089	1088	1111111	293	647	1033	1451	1871
92	1087	1086	1085	1083	1082	1081	1080	1079	1078	1076		307	653	1039	1453	1873
93	1075	1074	1073	1072	1071	1070	1068	1067	1066	1065		311	659	1049	1459	1877
94	1064	1063	1062	1060	1059	1058	1057	1056	1055	1054		313	661	1051	1471	1879
95	1053	1052	1050	1049	1048	1047	1046	1045	1044	1043		317	673	1061	1481	1889
96	1042	1041	1040	1038	1037	1036	1035	1034	1033	1032	1	331	677	1063	1483	1901
97	1031	1030	1029	1028	1027	1026	1025	1024	1022	1021	1	337	683	1069	1487	1907
98	1020	1019	1018	1017	1016	1015	1014	1013	1012	1011	1	347	691	1087	1489	1913
99	1010	1009	1008	1007	1006	1005	1004	1003	1002	1001	1	349	701	1091	1493	1931
100	1000	9990	9980	9970	9960	9950	9940	9930	9921	9911	10	353	709	1093	1499	1933
101	9901	9891	9881	9872	9862	9852	9843	9833	9823	9814	10	359	719	1097	1511	1949
102	9804	9794	9785	9775	9766	9756	9747	9737	9728	9718	10	367	727	1103	1523	1951
103	9709	9699	9690	9681	9671	9662	9653	9643	9634	9625	9	373	733	1109	1531	1973
104	9615	9606	9597	9588	9579	9569	9560	9551	9542	9533	9	379	739	1117	1543	1979
105	9524	9515	9506	9497	9488	9479	9470	9461	9452	9443	9	383	743	1123	1549	1987
106	9434	9425	9416	9407	9398	9390	9381	9372	9363	9355	99988	389	751	1129	1553	1993
107	9346	9337	9328	9320	9311	9302	9294	9285	9276	9268		397	757	1151	1559	1997
108	9259	9251	9242	9284	9225	9217	9208	9200	9191	9183		401	761	1153	1567	1999
109	9174	9166	9158	9149	9141	9132	9124	9116	9107	9099		409	769	1163	1571	2003
110	9091	9083	9074	9066	9058	9050	9042	9033	9025	9017		419	778	1171	1579	2011

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SQUARES OF NUMBERS.

The squares are given to the first four figures, no account being taken of 'place-value.'

ber.	0	1	2	3	4	5	6	7	8	9	Mean Differences.			3.					
Number.	0		4	9			0		0	9	1	2	3	4	5	6	7	8	9
10 11 12 13 14 15	1000 1210 1440 1690 1960 2250	1020 1232 1464 1716 1988 2280	1040 1254 1488 1742 2016 2310	1061 1277 1513 1769 2045 2341	1082 1300 1538 1796 2074 2372	1103 1323 1563 1823 2103 2403	1124 1346 1588 1850 2132 2434	1145 1369 1613 1877 2161 2465	1166 1392 1638 1904 2190 2496	1188 1416 1664 1932 2220 2528	2233333	455566	678899	8 9 10 11 12 12	11 12 13 14 15 16	14 15 16 17	15 16 18 19 20 22	17 18 20 22 23 25	21 22 24 26
16 17 18 19 20	2560 2890 3240 3610 4000	2592 2924 3276 3648 4040	2624 2958 3312 3686 4080	2657 2993 3349 3725 4121	2690 3028 3386 3764 4162	2723 3063 3423 3803 4203	2756 3098 3460 3842 4244	2789 3133 3497 3881 4285	2822 3168 3534 3920 4326	2856 3204 3572 3960 4368	34444	77788	10 11 11 12 12	14 15 16	17 18 19 20 21	21 22 23	23 25 26 27 29	26 28 30 31 33	38
21 22 23 24 25	4410 4840 5290 5760 6250	4452 4884 5336 5808 6300	4494 4928 5382 5856 6350	4537 4973 5429 5905 6401	4580 5018 5476 5954 6452	4623 5063 5523 6003 6503	4666 5108 5570 6052 6554	4709 5153 5617 6101 6605	4752 5198 5664 6150 6656	4796 5244 5712 6200 6708		9			23		32 33 34	34 36 38 39 41	41 42 44
26 27 28 29 30	6760 7290 7840 8410 9000	6812 7344 7896 8468 9060	6864 7398 7952 8526 9120	6917 7453 8009 8585 9181	6970 7508 8066 8644 9242	7023 7563 8123 8703 9303	7076 7618 8180 8762 9364	7129 7673 8237 8821 9425	7182 7728 8294 8880 9486	7236 7784 8352 8940 9548	6 6 6	11 11 11 12 12	17 17 18	23 24	27 28 29 30 31		39 40 41	46 47	50 51
31 31 32 33 34 35	9610 1024 1089 1156 1225	9672 1030 1096 1163 1232	9734 1037 1102 1170 1239	9797 1043 1109 1176 1246	9860 1050 1116 1183 1253	9923 1056 1122 1190 1260	99986 1063 1129 1197 1267	1005 1069 1136 1204 1274	1011 1076 1142 1211 1282	1018 1082 1149 1218 1289	6 1 1 1 1 1	13 1 1 1 1 1	19 2 2 2 2 2 2	25. 3 3 3 3 3 3 3 3	32 3 3 3 3 3 4	38 4 4 4 4 4	44 4 5 5 5 5 5	50 5 5 5 6 6	56 6 6 6 6
36 37 38 39 40	1296 1369 1444 1521 1600	1303 1376 1452 1529 1608	1310 1384 1459 1537 1616	1318 1391 1467 1544 1624	1325 1399 1475 1552 1632	1332 1406 1482 1560 1640	1340 1414 1490 1568 1648	1347 1421 1498 1576 1656	1354 1429 1505 1584 1665	1362 1436 1513 1592 1673	111111	1 2 2 2 2 2	2 2 2 2 2 2 2 2	3 3 3 3 3	44444	4 5 5 5 5	5 5 5 6 6	6 6 6 6 6	67777
41 42 43 44 45	1681 1764 1849 1936 2025	1689 1772 1858 1945 2034	1697 1781 1866 1954 2043	1706 1789 1875 1962 2052	1714 1798 1884 1971 2061	1722 1806 1892 1980 2070	1731 1815 1901 1989 2079	1739 1823 1910 1998 2088	1747 1832 1918 2007 2098	1756 1840 1927 2016 2107	111111	22222	2 3 3 3 3	3 3 3 3 4 4	44445	55555	6 6 6 6 6	777777	1~000000
46 47 48 49 50	2116 2209 2304 2401 2500	2125 2218 2314 2411 2510	2134 2228 2323 2421 2520	2144 2237 2333 2430 2530	2153 2247 2343 2440 2540	2162 2256 2352 2450 2550	2172 2266 2362 2460 2560	2181 2275 2372 2470 2570	2190 2285 2381 2480 2581	2200 2294 2391 2490 2591	111111	22222	3 3 3 3 3	444444	55555	6 6 6 6 6	77777	78888	w w w w w
51 52 53 54 55	2601 2704 2809 2916 3025	2611 2714 2820 2927 3036	2621 2725 2830 2938 3047	2632 2735 2841 2948 3058	2642 2746 2852 2959 3069	2652 2756 2862 2970 3080	2663 2767 2873 2981 3091	2673 2777 2884 2992 3102	2683 2788 2894 3003 3114	2694 2798 2905 3014 3125	111111	22222	00 00 00 00	4 4 4 4 4	55556	66677	77788	88999	9 9 10 10 10

SQUARES OF NUMBERS.

ber.	0	1			4	5	6	7	8	9	Mean Differences.								
Number.	-	1	2	3	*	0	0		•	9	1	2	3	4	5	6	7	8	9
55 56 57 58 59 60	3025 3136 3249 3364 3481 3600	3036 3147 3260 3376 3493 3612	3047 3158 3272 3387 3505 3624	3058 3170 3283 3399 3516 3636	3069 3181 3295 3411 3528 3648	3080 3192 3306 3422 3540 3660	3091 3204 3318 3434 3552 3672	3102 3215 3329 3446 3564 3684	3114 3226 3341 3457 3576 3697	3125 3238 3352 3469 3588 3709	1 1 1 1 1 1 1	22222222	3333444	455555	66666	777777		.9 9 9	10 11 11
61 62 63 64 65	3721 3844 3969 4096 4225	3733 3856 3982 4109 4238	3745 3869 3994 4122 4251	3758 3881 4007 4134 4264	3770 3894 4020 4147 4277	3782 3906 4032 4160 4290	3795 3919 4045 4173 4303	3807 3931 4058 4186 4316	3819 3944 4070 4199 4330	3832 3956 4083 4212 4343	1111111	24 23 23 23 23	4444	55555	6 6 6 7	78888	9 9 9 9 9 9	10 10 10	
66 67 68 69 70	4356 4489 4624 4761 4900	4360 4502 4638 4775 4914	4382 4516 4651 4789 4928	4396 4529 4665 4802 4942	4409 4543 4679 4816 4956	4422 4556 4692 4830 4970	4436 4570 4706 4844 4984	4449 4583 4720 4858 4998	4462 4597 4733 4872 5013	4476 4610 4747 4886 5027	1 1 1 1 1	හ හ හ හ හ	44444	55566	777777	00 00 00 00	9 10 10	11 11 11	12 12 12 13 13
71 72 73 74 75	5041 5184 5329 5476 5625	5055 5198 5344 5491 5640	5069 5213 5358 5506 5655	5084 5227 5373 5520 5670	5098 5242 5388 5535 5685	5112 5256 5402 5550 5700	5127 5271 5417 5565 5715	5141 5285 5432 5580 5730	5155 5300 5446 5595 5746	5170 5314 5461 5610 5761	1 1 1 1 2	3 3 3 3 3	44445	6 6 6 6 6	77778	99999	10 10 10	11 12 12 12 12	13 13
76 77 78 79 80	5776 5929 6084 6241 6400	5791 5944 6100 6257 6416	5806 5960 6115 6273 6432	5822 5975 6131 6288 6448	5837 5991 6147 6304 6464	5852 6006 6162 6320 6480	5868 6022 6178 6336 6496	5883 6037 6194 6352 6512	5898 6053 6209 6368 6529	5914 6068 6225 6384 6545	22222	3 3 3 3 3	555555	6 6 6 6		9 9 9 10 10	11 11	12 12 13 13 13	14 14 14
81 82 83 84 85	6561 6724 6889 7056 7225	6577 6740 6906 7073 7242	6593 6757 6922 7090 7259	6610 6773 6939 7106 7276	6626 6790 6956 7123 7293	6642 6806 6972 7140 7310	6659 6823 6989 7157 7327	6675 6839 7006 7174 7344	6691 6856 7022 7191 7362	6708 6872 7039 7208 7379	22222	00 00 00 00	55555	77777	8 8 8	10 10 10 10 10	12 12 12	13 13 13 14 14	15 15 15
86 87 88 89 90	7396 7569 7744 7921 8100	7413 7586 7762 7939 8118	7430 7604 7779 7957 8136	7448 7621 7797 7974 8154	7465 7639 7815 7992 8172	7482 7656 7832 8010 8190	7500 7674 7850 8028 8208	7517 7691 7868 8046 8226	7534 7709 7885 8064 8245	7552 7726 7903 8082 8263	22222	34444	55555	777777	9999	10 11 11 11 11	12 12 13	14 14 14 14 14	16 16 16
91 92 93 94 95	8281 8464 8649 8836 9025	8299 8482 8668 8855 9044	8317 8501 8686 8874 9063	8336 8519 8705 8892 9082	8354 8538 8724 8911 9101	8372 8556 8742 8930 9120	8391 8575 8761 8949 9139	8409 8593 8780 8968 9158	8427 8612 8798 8987 9178	8446 8630 8817 9006 9197	222222	44444	5 6 6 6 6	77788	9	11 11 11	13 13	15 15 15 15 15	16 17 17 17 17
96 97 98 99	9216 9409 9604 9801	9235 9428 9624 9821	9254 9448 9643 9841	9274 9467 9663 9860	9293 9487 9683 9880	9312 9506 9702 9900	9332 9526 9722 9920	9351 9545 9742 9940	9370 9565 9761 9960	9390 9584 9781 9980	2222.	4444	6 6 6	8	10	12 12 12 12		16	17 18 18 18

CUBES OF NUMBERS.

The cubes are given to the first four figures, no account being taken of 'place-value.'

ber.				3		5	6	7	0	9	Mean Differences.				š.				
Number.	0	1	2	3	4	D	0		8	9	1	2	3	4	5	6	7	8	9
10 11 12 13 14 15	1000 1331 1728 2197 2744 3375	1030 1368 1772 2248 2803 3443	1061 1405 1816 2300 2863 3512	1098 1443 1861 2353 2924 3582	1125 1482 1907 2406 2986 3652	1158 1521 1953 2460 3049 3724	1191 1561 2000 2515 3112 3796	1225 1602 2048 2571 8177 3870	1260 1643 2097 2628 3242 3944	1295 1685 2147 2686 3308 4020	345567	7 8 9 11 13 14	10 12 14 16 19 22	13 16 19 22 25 29	17 20 23 27 32 36	20 24 28 33 38 43	23 28 33 38 44 50	26 32 38 44 50 58	30 36 42 49 57 65
16 17 18 19 20	4096 4913 5832 6859 8000	4173 5000 5930 6968 8121	4252 5088 6029 7078 8242	4331 5178 6128 7189 8365	4411 5268 6230 7301 8490	4492 5859 6332 7415 8615	4574 5452 6435 7530 8742	4657 5545 6539 7645 8870	4742 5640 6645 7762 8999	4827 5735 6751 7881 9129	8 9 10 11 13	16 18 20 23 25	25 28 31 34 38	37 41	41 46 52 57 63	49 55 62 68 76	57 64 72 80 88	65 74 82 91 101	74 83 92 103 113
21 21 22 23 24 25	9261 1065 1217 1382 1563	9394 1079 1233 1400 1581	9528 1094 1249 1417 1600	9664 1109 1265 1435 1619	9800 1124 1281 1453 1639	9938 1139 1298 1471 1658	1008 1154 1314 1489 1678	1022 1170 1331 1507 1697	1036 1185 1348 1525 1717	1050 1201 1365 1544 1737	14 1 2 2 2 2	27 33344	41 55556	54 6 7 7 8	68 7 8 8 9 10	82 9 9 10 11 12	95 10 11 12 13 14	109 12 12 13 14 16	122 13 14 15 16 18
26 27 28 29 30	1758 1963 2195 2439 2700	1778 1990 2219 2464 2727	1798 2012 2243 2490 2754	1819 2035 2267 2515 2782	1840 2057 2291 2541 2809	1861 2080 2315 2567 2837	1882 2102 2339 2593 2865	1903 2125 2364 2620 2893	1925 2148 2389 2646 2922	1947 2172 2414 2673 2950	22233	45556	6 7 7 8 8	8 9 10 10 11	11 11 12 13 14	13 14 15 16 17	15 16 17 18 20	17 18 20 21 22	19 20 22 23 25
31 32 33 34 35	2979 3277 3594 3930 4288	3008 3308 3626 3965 4324	3087 3339 3659 4000 4361	3066 3370 3693 4035 4399	3096 3401 3726 4071 4436	3126 3433 3760 4106 4474	3155 3465 3793 4142 4512	3186 3497 3827 4178 4550	3216 3529 3861 4214 4588	3246 3561 3896 4251 4627	3 3 3 4 4	6 6 7 7 8	9 10 10 11 11	12 13 13 14 15	15 16 17 18 19	18 19 20 21 23	21 22 24 25 26	24 25 27 29 30	27 29 30 32 34
36 37 38 39 40	4666 5065 5487 5932 6400	4705 5106 5531 5978 6448	4744 5148 5574 6024 6496	4783 5190 5618 6070 6545	4823 5231 5662 6116 6594	4863 5273 5707 6163 6643	4903 5316 5751 6210 6692	4943 5358 5796 6257 6742	4984 5401 5841 6304 6792	5024 5444 5886 6352 6842	4 4 4 5 5	8 8 9 9 10	12 13 13 14 15	16 17 18 19 20	20 21 22 23 25	24 25 27 28 30	28 30 31 33 34	32 34 36 37 39	36 38 40 42 44
41 42 43 44 45	6892 7409 7951 8518 9113	6943 7462 8006 8577 9173	6993 7515 8062 8635 9285	7044 7569 8118 8694 9296	7096 7623 8175 8753 9358	7147 7677 8231 8812 9420	7199 7731 8288 8872 9482	7251 7785 8345 8931 9544	7303 7840 8403 8992 9607	7356 7895 8460 9052 9670	5 5 6 6	11 11 12		21 22 23 24 25	26 27 28 30 31	31 33 34 36 37	36 38 40 42 43	41 43 45 48 50	47 49 51 54 56
46 46 47 48 49 50	9734 1038 1106 1176 1250	9797 1045 1113 1184 1258	9861 1052 1120 1191 1265	9925 1058 1127 1198 1273	9990 1065 1134 1206 1280	1005 1072 1141 1213 1288	1012 1079 1148 1220 1296	1018 1085 1155 1228 1303	1025 1092 1162 1235 1311	1032 1099 1169 1243 1319	6 1 1 1 1 1	13 1 1 1 1 2	19 2 2 2 2 2 2 2	26 3 3 3 3 3 3	32 3 3 4 4 4	38 4 4 4 4 5	45 5 5 5 5 5 5	51 5 5 6 6 6	7
51 52 53 54 55	1489 1575	1334 1414 1497 1583 1673	1342 1422 1506 1592 1682	1350 1431 1514 1601 1691	1358 1439 1523 1610 1700	1366 1447 1531 1619 1710	1374 1455 1540 1628 1719	1382 1464 1549 1637 1728	1390 1472 1557 1646 1737	1398 1480 1566 1655 1747	111111	2 2 2 2 2 2 2 2 2	20000000	33344	4445	55556	6 6 6 6 6	67777	77888

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CUBES OF NUMBERS.

ber.	0	1	2	3	4	5	6	7	8	9	Mean Differences.				s.				
Number.	0	1	2	3	-	0	0		0		1	2	3	4	5	6	7	8	9
55 56 57 58 59 60	1664 1756 1852 1951 2054 2160	1673 1766 1862 1961 2064 2171	1682 1775 1871 1971 2075 2182	1691 1785 1881 1982 2085 2193	1700 1794 1891 1992 2096 2203	1710 1804 1901 2002 2106 2214	1719 1813 1911 2012 2117 2225	1728 1823 1921 2023 2128 2236	1737 1833 1931 2033 2138 2248	1747 1842 1941 2043 2149 2259	1 1 1 1 1 1	2222222	80 80 80 80 80	44444	555556	666667	677778 8	788889	9 9 9
61 62 63 64 65	2270 2383 2500 2621 2746	2281 2395 2512 2634 2759	2292 2406 2524 2646 2772	2303 2418 2536 2658 2784	2315 2430 2548 2671 2797	2326 2441 2560 2683 2810	2337 2453 2573 2696 2823	2349 2465 2585 2708 2836	2360 2477 2597 2721 2849	2372 2489 2609 2734 2862	1111111	22233	44444	55555	6 6 6 6 6	77788	88899 99	10	
66 67 68 69 70	2875 3008 3144 3285 3430	2888 3021 3158 3299 3445	2901 3035 3172 3314 3459	2914 3048 3186 3328 3474	2928 3062 3200 3343 3489	2941 3075 3214 3357 3504	2954 3089 3228 3372 3519	2967 3103 3242 3386 3534	2981 3117 3257 3401 3549	2994 8130 3271 3415 3564	1 1 1 1 1	83 83 83 83 83	44444	55666	77777	888999	9 10 10 10 10	11 11 12	13
71 72 73 74 75	3579 3732 3890 4052 4219	3594 3748 3906 4069 4236	3609 3764 3922 4085 4253	3625 3779 3938 4102 4270	3640 3795 3954 4118 4287	3655 3811 3971 4135 4304	3671 3827 3987 4152 4321	3686 3842 4003 4168 4338	3701 3858 4019 4185 4355	3717 3874 4036 4202 4372	22222	33 33 33 33	55555	6 6 7 7	78889	9 9 10 10 10	11 11 11 12 12	12 13 13 13 13	15 15
76 77 78 79 80	4390 4565 4746 4930 5120	4407 4583 4764 4949 5139	4425 4601 4782 4968 5158	4442 4619 4800 4987 5178	4459 4637 4819 5006 5197	4477 4655 4837 5025 5217	4495 4673 4856 5044 5236	4512 4691 4874 5063 5256	4530 4709 4893 5082 5275	4548 4727 4912 5101 5295	222222	44444	55666	77788	9 9 9 10 10	11 11 11 11 11 12	12 13 13 13 14	14	17
81 82 83 84 85	5314 5514 5718 5927 6141	5334 5534 5739 5948 6163	5354 5554 5759 5969 6185	5374 5574 5780 5991 6207	5394 5595 5801 6012 6228	5413 5615 5822 6034 6250	5433 5636 5843 6055 6272	5453 5656 5864 6076 6294	5473 5677 5885 6098 6316	5494 5697 5906 6120 6338	22222	4444	6 6 6 6 7	83879		12 17 13	14 15 15	16 17 17	
86 87 88 89 90	6361 6585 6815 7050 7290	6383 6608 6838 7073 7314	6405 6631 6861 7097 7339	6427 6653 6885 7121 7363	6450 6676 6908 7145 7388	6472 6699 6932 7169 7412	6495 6722 6955 7193 7437	6517 6745 6979 7217 7461	6540 6768 7002 7242 7486	6562 6792 7026 7266 7511	22222	55555	77777	9	12 12	13 14 14 14 14	16 16 16 17 17	18 18 19 19 20	20 21 21 22 22 22
91 92 93 94 95	7536 7787 8044 8306 8574	7561 7812 8070 8332 8601	7586 7838 8096 8359 8628	7610 7863 8122 8386 8655	7636 7889 8148 8412 8683	7661 7915 8174 8439 8710	7686 7940 8200 8466 8737	7711 7966 8227 8493 8765	7736 7992 8253 8520 8792	7762 8018 8279 8547 8820	00 00 00 00	55555	00 00 00 00	10 10 11		15 16 16	18 18	20 21 21 21 21 22	23 23 24 24 24 25
96 97 98 99	8847 9127 9412 9703	8875 9155 9441 9732	8903 9183 9470 9762	8931 9212 9499 9791	8958 9240 9528 9821	8986 9269 9557 9851	9014 9297 9586 9880	9042 9326 9615 9910	9070 9354 9644 9940	9099 9383 9674 9970	00 00 00 00	6 6 6 6	80999	12	14 15	17 17 17 18	20	22 23 23 24	25 26 26 27

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COMPOUND INTEREST TABLE,

Showing 'Amount' of £1, after from 1 to 50 years (or other equal periods), at

		1	and the second				-	Portoc	
Tear or Period.	1 %.	1.5 %.	2 °/.	2.5 */.	3 °/.	3.5 %.	4 %	4·5 °/。	5°/.
1 2 3 4 5	1.01000	1.01500	1.02000	1.02500	1.03000	1.03500	1.04000	1.04500	1.05000
	1.02010	1.03023	1.04040	1.05063	1.06090	1.07123	1.08160	1.09208	1.10250
	1.03030	1.04568	1.06121	1.07689	1.09273	1.10872	1.12486	1.14117	1.15763
	1.04060	1.06136	1.08243	1.10381	1.12551	1.14752	1.16986	1.19252	1.21551
	1.05101	1.07728	1.10408	1.13141	1.15927	1.18769	1.21665	1.24618	1.27628
6	1.06152	1.09344	1.12616	1.15969	1:19405	1-22926	1*26532	1·30226	1·34010
7	1.07214	1.10984	1.14869	1.18869	1:22987	1-27228	1*31593	1·36086	1·40710
8	1.08286	1.12649	1.17166	1.21840	1:26677	1-31681	1*36857	1·42210	1·47746
9	1.09369	1.14339	1.19509	1.24886	1:30477	1-36290	1*42331	1·48610	1·55133
10	1.10462	1.16054	1.21899	1.28008	1:34392	1-41060	1*48024	1·55297	1·62889
11	1.11567	1.17795	1.24337	1·31209	1.88423	1.45997	1:53945	1.62285	1.771034
12	1.12683	1.19562	1.26824	1·34489	1.42576	1.51107	1:60103	1.69588	1.79586
13	1.13809	1.21355	1.29361	1·37851	1.46853	1.56396	1:66507	1.77220	1.88565
14	1.14947	1.23176	1.31948	1·41297	1.51259	1.61869	1:73168	1.85194	1.97993
15	1.16097	1.25023	1.34587	1·44830	1.55797	1.67535	1:80094	1.93528	2.07898
16	1·17258	1-26899	1·37279	1-48451	1.60471	1-73399	1.87298	2.02237	2·18287
17	1·18430	1-28802	1·40024	1-52162	1.65285	1-79468	1.94790	2.11338	2·29202
18	1·19615	1-30734	1·42825	1-55966	1.70243	1-85749	2.02582	2.20848	2·40662
19	1·20811	1-82695	1·45681	1-59865	1.75851	1-92250	2.10685	2.30786	2·52695
20	1·22019	1-84686	1·48595	1-63862	1.80611	1-98979	2.19112	2.41171	2·65330
21	1-23239	1.36706	1.51567	1.67958	1 86029	2.05943	2-27877	2.52024	2-78596
22	1-24472	1.38756	1.54598	1.72157	1 91610	2.13151	2-36992	2.63365	2-92526
23	1-25716	1.40838	1.57690	1.76461	1 97359	2.20611	2-46472	2.75217	8-07152
24	1-26973	1.42950	1.60844	1.80873	2 03279	2.28333	2-56330	2.87601	3-22510
25	1-28243	1.45095	1.64061	1.85894	2 09378	2.36324	2-66584	3.00543	8-38635
26	1·29526	1·47271	1.67342	1 90029	2·15659	2·44596	2-77247	3·14068	3.55567
27	1·30821	1·49480	1.70689	1 94780	2·22129	2·53157	2-88337	3·28201	3.73346
28	1·32129	1·51722	1.74102	1 99650	2·28798	2·62017	2-99870	3·42970	8.92013
29	1·33450	1·53998	1.77584	2 04641	2·35657	2·71188	3-11865	3·58404	4.11614
30	1·34785	1·56308	1.81136	2 09757	2·42726	2·80679	3-24340	3·74532	4.32194
31	1·36133	1.58653	1.84759	2-15001	2·50008	2.90503	3·37313	3-91386	4.53804
32	1·37494	1.61032	1.88454	2-20376	2·57508	3.00671	3·50806	4-08998	4.76494
33	1·38869	1.63448	1.92223	2-25885	2·65234	3.11194	3·64838	4-27403	5.00319
34	1·40258	1.65900	1.96068	2-31532	2·73191	8.22086	3·79432	4-46636	5.25335
35	1·41660	1.68388	1.99989	2-87321	2·81386	8.83359	3·94609	4-66735	5.51602
36	1.43077	1-70914	2.03989	2·43254	2.89828	3·45027	4·10393	4.87738	5·79182
37	1.44508	1-73478	2.08069	2·49335	2.98523	3·57103	4·26809	5.09686	6·08141
38	1.45953	1-76080	2.12230	2·55568	3.07478	3·69601	4·43881	5.32622	6·35848
39	1.47412	1-78721	2.16474	2·61957	3.16703	3·82537	4·61637	5.56590	6·70475
40	1.48886	1-81402	2.20804	2·68506	8.26204	8·95926	4·80102	5.81636	7·03999
41	1.50375	1.84123	2·25220	2-75219	3·35990	4.09783	4 99306	6.07810	7·39199
42	1.51879	1.86885	2·29724	2-82100	3·46070	4.24126	5 19278	6.35162	7·76159
43	1.53398	1.89688	2·34319	2-89152	3·56452	4.38970	5 40050	6.63744	8·14967
44	1.54932	1.92533	2·39005	2-96381	8·67145	4.54334	5 61652	6.93612	8·55715
45	1.56481	1.95421	2·43785	3-03790	3·78160	4.70236	5 84118	7.24825	8·98501
46	1.58046	1 98353	2:48661	3·11385	3-89504	4*86694	6.07482	7·57442	9:43426
47	1.59626	2 01328	2:53634	3·19170	4-01190	5*03728	6.31782	7·91527	9:90597
48	1.61223	2 04348	2:58707	3·27149	4-13225	5*21359	6.57053	8·27146	10:40127
49	1.62835	2 07413	2:63881	3·35828	4-25622	5*39606	6.83335	8·64367	10:92133
50	1.64463	2 10524	2:69159	3·43711	4-38391	5*58493	7.10668	9·03264	11:46740

COMPOUND INTEREST TABLE.

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Present Value of £1 due 1 to 50 years (or other equal periods) hence, at

1 %.	1.2 %.	2 °/.	2.5 °/.	3 °/.	3.2 %	4 %	4.5 %.	5 °/.
-59010	*98522	•98039	*97561	-97087	-96618	*96154	*95694	.95238
-98030	*97066	•96117	*95181	-94260	-93351	*92456	*91573	'90703
-97059	*95632	•94232	*92860	-91514	-90194	*88900	*87630	'86384
-96098	*94218	•92385	*90595	-88849	-87144	*85480	*83856	'82270
-95147	*92826	•90573	*88385	-86261	-84197	*82193	*80245	'78353
*94205	•91454	*88797	*86230	*83748	•81350	•79031	•76790	•74622
*93272	•90103	*87056	*84127	*81309	•78599	•75992	•73483	•71068
*92348	•88771	*85349	*82075	*78941	•75941	•73069	•70819	•67684
*91434	•87459	*83676	*80073	*76642	•73373	•70259	•67290	•64461
*90529	•86167	*82035	*78120	*74409	•70892	•67556	•64393	•61391
*89632	*84893	*80426	•76214	•72242	-68495	•64958	•61620	*58468
*88745	*83639	*78849	•74356	•70138	-66178	•62460	•58966	*55684
*87866	*82403	*77303	•72542	•68095	-63940	•60057	•56427	*53032
*86996	*81185	*76788	•70773	•66112	-61778	•57748	•53997	*50507
*86135	*79985	*74301	•69047	•64186	-69689	•55526	•51672	*48102
*85282	•78808	•72845	-67363	•62317	•57671	•53391	*49447	•45811
*84438	•77639	•71416	-65720	•60502	•55720	•51337	*47318	•43630
*83602	•76491	•70016	-64117	•58739	•53836	•49363	*45280	•41552
*82774	•75361	•68643	-62553	•57029	•52016	•47464	*43330	•39573
*81954	•74247	•67297	-61027	•55368	•50257	•45639	*41464	•37689
-81143	-78150	•65978	*59539	•53755	*48557	*43883	•39679	•35894
·80340	-72069	•64684	*58086	•52189	*46915	*42196	•37970	•34185
·79544	-71004	•63416	*56670	•50669	*45329	*40573	•36335	•32557
·78757	-69954	•62172	*55288	•49193	*43796	*39012	•34770	•31007
·77977	-68921	•60953	*53939	•47761	*42315	*37512	•33273	•29530
•77205	*67902	•59758	•52623	*46369	*40884	•36069	*31840	*28124
•76440	*66899	•58586	•51340	*45019	*39501	•34682	*30469	*26785
•75684	*65910	•57437	•50088	*43708	*38165	•33348	*29157	*25509
•74934	*64936	•56311	•48866	*42435	*36875	•32065	*27902	*24295
•74192	*63976	•55207	•47674	*41199	*35628	•30832	*26700	*23138
•73458	*63031	•54125	*46511	*39999	•34423	*29646	*25550	-22036
•72780	*62099	•53063	*45377	*38834	•33259	*28506	*24450	-20987
•72010	*61182	•52023	*44270	*37703	•32134	*27409	*23397	-19987
•71297	*60277	•51003	*43191	*36604	•81048	*26355	*22390	-19035
•70591	*59387	•50003	*42137	*35538	•29998	*25342	*21425	-18129
-69892	*58509	*49022	*41109	•34503	*28983	*24367	*20503	•17266
-69200	*57644	*48061	*40107	•33498	*28003	*23430	*19620	•16444
-68515	*56792	*47119	*39128	•32523	*27056	*22529	*18775	•15661
-67837	*55953	*46195	*38174	•31575	*26141	*21662	*17967	•14915
-67165	*55126	*45289	*37243	•30656	*25257	*20829	*17193	•14205
*66500	•54312	•44401	·36335	*29763	*24403	*20028	·16453	·13528
*65842	•53509	•43530	·35448	*28896	*23578	*19257	·15744	·12884
*65190	•52718	•42677	·34584	*28054	*22781	*18517	·15066	·12270
*64545	•51939	•41840	·33740	*27237	*22010	*17805	·14417	·11686
*63906	•51171	•41020	·32917	*26444	*21266	*17120	·13796	·11130
*63273	•50415	*40215	*32115	*25674	*20547	·16461	·13202	*10600
*62646	•49670	*39427	*31331	*24926	*19852	·15828	·12634	*10095
*62026	•48936	*38654	*30567	*24200	*19181	·15219	·12090	*09614
*61412	•48213	*37896	*29822	*23495	*18532	·14634	·11569	*09156
*60804	•47500	*37153	*29094	*22811	*17905	·14071	·11071	*08720
	59010 98030 97039 96032 95147 924205 93272 92348 90529 88632 88766 86096 86135 85282 88766 86096 86135 85282 88764 84143 83602 88774 83604 77954 77077 77077 77077 77077 77077 77077 77077 77077 77077 77077 77077 77077 77097 77051 608802 67857 67877 67877 67877 67877 67877 67877 67877 67877 67877 67877 67877		South 98522 98039 90090 97066 96117 97059 97632 92326 90093 94218 92326 9017 92327 90133 94216 92326 96073 94217 92326 90673 94216 9377 83742 92327 90103 87066 924216 83771 85349 90529 96167 82035 89632 84933 80426 83745 83339 778849 935786 82403 77303 86996 81185 777385 93632 78849 76297 81355 79985 74301 85274 75841 70016 82774 75841 86435 78450 79954 74247 90543 7104 63416 73707 68921 60331 774977 68921 65207 <	South South South South South 59010 98522 98039 97561 99131 99030 97066 96117 99131 99235 99235 99235 99147 92335 90073 85355 90163 85355 94205 91444 *85797 36230 93272 92327 90103 57056 84127 923252 90103 57056 84127 923252 90103 58076 50073 90529 86167 82035 78120 *89632 94893 80426 76214 *87666 82403 77303 72542 *80996 81185 76788 70773 *8438 77630 72846 67783 *8438 77693 71416 66720 *8474 70046 64117 7016 *8143 73150 65978 65293 *77907 769924 62172	1 1			1 1

40 EXPONENTIALS & HYPERBOLIC FUNCTIONS.

x	θ ^x	0 - x	cosh x	sinh x	tanh x	log cosh x	log sinh :
•1	1.1052	·9048	1.0050	.1002	.0997	0.0022	1.0007
·1 ·2 ·3	1.2214	.8187	1.0201	*2013	1974	.0086	1.3039
.3	1.3499	.7408	1.0453	3045	2913	-0193	11-4836
.4	1.4918	.6703	1.0811	.4108	3799	.0339	11.6136
.5	1.6487 .	*6065	1.1276	•5211	4621	0522	1.7169
·6 ·7	1.8221	•5488	1.1855	*6367	.5370	.0739	n 8039
.7	2.0138	.4966	1.2552	*7586	.6044	.0987	11.8800
.8	2.2255	•4493	1.3374	*8881	·6640	1263	11 9485
.9	2.4596	•4066	1.4331	1.0265	.7163	.1563	0.0114
1.0	2.7183	•3679	1.5431	1.1752	•7616	·1884	0.0701
1.1	3.0042	•3329	1.6685	1.3357	·8005	*2223	0.1257
1.2	3.3201	•3012	1.8107	1.2095	.8337	-2578	0.1788
1.3	3.6693	.2725	1.9709	1.6984	*8617	-2947	0.2300
1.4	4.0552	·2466	2.1209	1.9043	*8854	•3326	0.2797
1.2	4.4817	•2231	2.3524	2.1293	•9051	•3715	0.3282
1.6	4.9530	·2019	2.5775	2.3756	·9217	•4112	0.3758
1.7	5.4739	1827	2.8283	2.6456	.9354	•4515	0.4225
1.8	6.0496	·1653	3.1075	2.9422	9468	•4924	0.4687
1.9	6.6859	·1496	3.4177	3.2682	•9563	•5337	0.5143
2.0	* 7.3891	·1353	3.7622	3.6269	•9640	•5754	0.5595
2.1	8.1662	.1225	4.1443	4.0219	-9704	•6175	0.6044
2.2	9.0251	.1108	4.5679	4.4571	·9758	•6597	0.6491
2.3	9.9742	•1003	5.0372	4.9370	*9801	.7022	0.6935
2.4	11.0232	.0907	5.5570	5.4662	.9837	•7448	0.7377
2.2	12.1825	.0821	6.1323	6.0202	.9866	•7876	0.7818
2.6	13.4638	.0743	6.7690	6.6947	•9890	*8305	0.8257
2.7	14.8797	.0672	7.4735	7.4063	9910	.8735	0.8696
2.8	16.4446	•0608	8.2527	8.1919	•9926	·9166	0.9134
2.9	18.17.11	•0550	9.1146	9.0596	.9940	•9597	0.9571
3.0	20.0855	•0498	10.068	10.018	•9951	1.0029	1.0008
3.1	22.1980	·0450	11.122	11.076	.9959	1.0462	1.0444
3.2	24.5325	.0408	12.287	12.246	-9967	1.0894	1.0880
3.3	27.1126	•0369	13.575	13.538	•9973	1.1327	1.1316
3.4	29.9641	.0334	14.999	14.965	.9978	1.1761	1·1751 1·2186
3.2	33.1155	•0302	16.573	16.543	9982	1.2194	1.2180
3.6	36.5982	·0273	18.313	18.285	-9985	1.2628	1.2621
3.7	40.4473	.0247	20.236	20.211	.9988	1.3061	1·3056 1·3491
3.8	44.7012	·0224	22:362	22:339	·9990 ·9992	1.3495	1.3491 1.3925
3·9 4·0	49·4024 54·5982	·0202 ·0183	24.711 27.308	24.691 27.290	.9993	1.4363	1 3925
4.1	60.9409	-0166	30.178	30.162	-9995	1.4797	1.4795
42	60·3403 66·6863	·0166 ·0150	33.351	30.102	.9996	1.5231	1.5229
4.3	73.6998	0136	36.857	36.843	.9996	1.5665	1.5664
4.4	81.4509	-0123	40.732	40.719	.9997	1.6099	1.6098
4.2	90.0171	·0111	45.014	45.003	·9997	1.6533	1.6532
4.6	99.4843	·0101	49.747	49.737	·9998	1.6968	1.6967
4.7	109.9472	.0091	54.978	54.969	.9998	1.7402	1.7401
4.8	121.5104	.0082	60.759	60.751	.99999	1.7836	1.7836
4.9	134.2898	.0074	67.149	67.141	-9999	1.8270	1.8270
5.0	148.4132	-0067	74.210	74.203	-99999	1.8705	1.8704



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	Constant e (=2.71828), with the closely related	311 2 44
	Hyperbolic Sines, Cosines, and Tangents (sinh, cosh,	ALCONTRACT,
	tanh), and the Logarithms of the Sines and Cosines	
	(log sinh and log cosh)	4
	A CARLES AND A CARLE	
As	pecial feature of the Tables of the Circular Functions is	the prom
	given to the true scientific unit of angle-namely, t	

The pupil cannot be introduced too soon to this conception; and moe of the Tables included in Parts III. and V. give the angles in both th natural and conventional units. Table V., which, so far as the compile knows, is now (1905) published for the first time, will be found of grea service in graphical construction and in the graphical solution of equations involving the circular functions.

M.T.

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