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A reconstruction of Edward Sang's
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1 Introduction

Edward Sang (1805–1890) was probably the greatest calculator of logarithms of the 19th century [4, 12, 13, 14, 25, 30]. Sang spent 40 years computing tables of logarithms and trigonometric functions, with the assistance from his daughters Flora (1838-1925) and Jane (1834-1878). The result fills about 50 manuscript volumes, plus a number of transfer duplicates, which are kept at Edinburgh University Library and at the National Library of Scotland, Edinburgh. I have reconstructed a number of these tables and an overview of the tables and reconstructions can be found in a separate guide [34].

Sang’s purpose was in particular to provide fundamental tables, including for the decimal division of the quadrant. In 1890 [4, p. 189], he wrote that

In addition to the results being accurate to a degree far beyond what can ever be needed in practical matters, [the collection of computations] contains what no work of the kind has contained before, a complete and clear record of all the steps by which those results were reached. Thus we are enabled at once to verify, or if necessary, to correct the record, so making it a standard for all time.

For these reasons it is proposed that the entire collection be acquired by, and preserved in, some official library, so as to be accessible to all interested in such matters; so that future computers may be enabled to extend the work without the need of recomputing what has been already done; and also so that those extracts which are judged to be expedient may be published.

2 The first myriad of logarithms (K5)

Volume K5, here reconstructed, contains the logarithms to 28 places of the integers from 1 to 10000. The current volume is in fact a later copy of an earlier volume. According to Sang’s introduction to this volume, the logarithms initially made up folio pages with 50 values per page. This volume became very torn by manipulation, and it was revised into the present volume with 25 values per page. In the original volume, the pages are numbered from 0 to 399 and are only one-sided. In the reconstruction, they are two-sided. The blocks of eight pages are numbered from 0 to 49 and this numbering has been repeated here.

In the first version, logarithms were recorded in the order of computation. In the revised version, all logarithms of primes computed up to August 1871 were written together, with their powers. The logarithms of the primes were presumably taken from volume K4. Then the logarithms of the remaining composite numbers were obtained by addition, starting with the prime 97 and going on in decreasing order. Sang went downward until 2.

Therefore, after the primes and their powers, Sang must have entered the logarithms of 97×89 , 97×83 , etc., until 97×2 , 89×83 , 89×79 , etc., and later probably products of three integers such as $19^2 \times 17$, $19^2 \times 13$, etc., $19 \times 17 \times 13$, and so on.

This revised volume was completed in December 1871.

References

The following list covers the most important references¹ related to Sang's table. Not all items of this list are mentioned in the text, and the sources which have not been seen are marked so. I have added notes about the contents of the articles in certain cases.

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¹**Note on the titles of the works:** Original titles come with many idiosyncrasies and features (line splitting, size, fonts, etc.) which can often not be reproduced in a list of references. It has therefore seemed pointless to capitalize works according to conventions which not only have no relation with the original work, but also do not restore the title entirely. In the following list of references, most title words (except in German) will therefore be left uncapitalized. The names of the authors have also been homogenized and initials expanded, as much as possible.

The reader should keep in mind that this list is not meant as a facsimile of the original works. The original style information could no doubt have been added as a note, but I have not done it here.

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N	logarithm	ref
0		
1	.00000 00000 00000 00000 00000 000	
2	.30102 99956 63981 19521 37388 947	(8)
3	.47712 12547 19662 43729 50279 033	(7)
4	.60205 99913 27962 39042 74777 894	
5	.69897 00043 36018 80478 62611 053	(8)
6	.77815 12503 83643 63250 87667 980	
7	.84509 80400 14256 83071 22162 586	(9)
8	.90308 99869 91943 58564 12166 842	
9	.95424 25094 39324 87459 00558 065	
10	.00000 00000 00000 00000 00000 000	
11	.04139 26851 58225 04075 01999 712	(7)
12	.07918 12460 47624 82772 25056 927	
13	.11394 33523 06836 76920 65051 579	(10)
14	.14612 80356 78238 02592 59551 533	
15	.17609 12590 55681 24208 12890 085	
16	.20411 99826 55924 78085 49555 789	
17	.23044 89213 78273 92854 01698 943	(13)
18	.25527 25051 03306 06980 37947 012	
19	.27875 36009 52828 96153 63334 758	(12)
20	.30102 99956 63981 19521 37388 947	
21	.32221 92947 33919 26800 72441 618	
22	.34242 26808 22206 23596 39388 660	
23	.36172 78360 17592 87886 77771 123	(15)
24	.38021 12417 11606 02293 62445 874	

(0)

N	logarithm	ref
25	.39794 00086 72037 60957 25222 106	
26	.41497 33479 70817 96442 02440 527	
27	.43136 37641 58987 31188 50837 098	
28	.44715 80313 42219 22113 96940 480	
29	.46239 79978 98956 08733 28467 630	(16)
30	.47712 12547 19662 43729 50279 033	
31	.49136 16938 34272 67966 67041 001	(17)
32	.50514 99783 19905 97606 86944 736	
33	.51851 39398 77887 47804 52278 745	
34	.53147 89170 42255 12375 39087 891	
35	.54406 80443 50275 63549 84773 639	
36	.55630 25007 67287 26501 75335 960	
37	.56820 17240 66994 99680 84506 895	(10)
38	.57978 35966 16810 15675 00723 705	
39	.59106 46070 26499 20650 15330 612	
40	.60205 99913 27962 39042 74777 894	
41	.61278 38567 19735 49450 94118 500	(18)
42	.62324 92903 97900 46322 09830 566	
43	.63346 84555 79586 52640 50881 532	(15)
44	.64345 26764 86187 43117 76777 607	
45	.65321 25137 75343 67937 63169 118	
46	.66275 78316 81574 07408 15160 070	
47	.67209 78579 35717 46441 42193 994	(20)
48	.68124 12373 75587 21814 99834 822	
49	.69019 60800 28513 66142 44325 172	

N	logarithm	ref
50	.69897 00043 36018 80478 62611 053	(17)
51	.70757 01760 97936 36583 51977 976	
52	.71600 33436 34799 15963 39829 474	
53	.72427 58696 00789 04563 29922 916	
54	.73239 37598 22968 50709 88226 045	
55	.74036 26894 94243 84553 64610 765	(21)
56	.74818 80270 06200 41635 34329 428	
57	.75587 48556 72491 39883 13613 790	
58	.76342 79935 62937 28254 65856 577	
59	.77085 20116 42144 19026 06563 845	
60	.77815 12503 83643 63250 87667 980	(18)
61	.78532 98350 10767 03388 57485 138	
62	.79239 16894 98253 87488 04429 948	
63	.79934 05494 53581 70530 22720 651	
64	.80617 99739 83887 17128 24333 683	
65	.81291 33566 42855 57399 27662 632	(19)
66	.81954 39355 41868 67325 89667 692	
67	.82607 48027 00826 43414 91316 292	
68	.83250 89127 06236 31896 76476 838	
69	.83884 90907 37255 31616 28050 155	
70	.84509 80400 14256 83071 22162 586	(22)
71	.85125 83487 19075 28609 28294 350	
72	.85733 24964 31268 46023 12724 907	
73	.86332 28601 20455 90107 43869 005	(23)
74	.86923 17197 30976 19202 21895 843	

N	logarithm	ref
75	.87506 12633 91700 04686 75501 138	(8)
76	.88081 35922 80791 35196 38112 652	
77	.88649 07251 72481 87146 24162 298	
78	.89209 46026 90480 40171 52719 559	
79	.89762 70912 90441 42799 48213 865	
80	.90308 99869 91943 58564 12166 842	(24)
81	.90848 50188 78649 74918 01116 130	
82	.91381 38523 83716 68972 31507 447	
83	.91907 80923 76073 90383 27603 520	
84	.92427 92860 61881 65843 47219 513	
85	.92941 89257 14292 73332 64309 996	(20)
86	.93449 84512 43567 72161 88270 480	
87	.93951 92526 18618 52462 78746 662	
88	.94448 26721 50168 62639 14166 554	
89	.94939 00066 44912 78472 35433 697	
90	.95424 25094 39324 87459 00558 065	
91	.95904 13923 21093 59991 87214 165	
92	.96378 78273 45555 26929 52549 017	
93	.96848 29485 53935 11696 17320 034	
94	.97312 78535 99698 65962 79582 942	
95	.97772 36052 88847 76632 25945 810	(25)
96	.98227 12330 39568 41336 37223 769	
97	.98677 17342 66244 85178 43618 117	
98	.99122 60756 92494 85663 81714 119	
99	.99563 51945 97549 91534 02557 778	

N	logarithm	ref
100	.00000 00000 00000 00000 00000 000	
01	.00432 13737 82642 57427 51881 782	(26)
02	.00860 01717 61917 56104 89366 923	
03	.01283 72247 05172 20517 10711 946	(29)
04	.01703 33392 98780 35484 77218 421	
105	.02118 92990 69938 07279 35052 671	
06	.02530 58652 64770 24084 67311 864	
07	.02938 37776 85209 64083 45412 395	(23)
08	.03342 37554 86949 70231 25614 992	
09	.03742 64979 40623 63520 05133 076	(18)
110	.04139 26851 58225 04075 01999 712	
11	.04532 29787 86657 43410 34785 928	
12	.04921 80226 70181 61156 71718 375	
13	.05307 84434 83419 72279 52270 286	(27)
14	.05690 48513 36472 59404 51002 737	
115	.06069 78403 53611 68365 40382 175	
16	.06445 79892 26918 47776 03245 524	
17	.06818 58617 46161 64379 65609 645	
18	.07188 20073 06125 38547 43952 793	
19	.07554 69613 92530 75925 23861 529	
120	.07918 12460 47624 82772 25056 927	
21	.08278 53703 16450 08150 03999 425	
22	.08635 98306 74748 22909 94874 085	
23	.08990 51114 39397 93180 44397 532	
24	.09342 16851 62235 07009 41818 896	

N	logarithm	ref
125	.09691 00130 08056 41435 87833 158	(30)
26	.10037 05451 17562 90051 60109 598	
27	.10380 37209 55956 86424 69874 218	
28	.10720 99696 47868 36649 61722 631	
29	.11058 97102 99248 96370 01160 565	
130	.11394 33523 06836 76920 65051 579	(48)
31	.11727 12956 55764 26081 00542 707	
32	.12057 39312 05849 86847 27056 639	
33	.12385 16409 67085 79224 85497 343	
34	.12710 47983 64807 62936 28705 240	
135	.13033 37684 95006 11667 13448 150	(26)
36	.13353 89083 70217 51418 13865 785	
37	.13672 05671 56406 76856 29266 271	
38	.13987 90864 01236 51137 65439 102	
39	.14301 48002 54095 08045 64332 023	
140	.14612 80356 78238 02592 59551 533	(43)
41	.14921 91126 55379 90170 92473 027	
42	.15228 83443 83056 48130 65683 298	
43	.15533 60374 65061 80995 67051 292	
44	.15836 24920 95249 65544 50113 854	
145	.16136 80022 34974 89211 91078 682	(50)
46	.16435 28557 84437 09628 81257 952	
47	.16731 73347 48176 09871 94604 204	
48	.17026 17153 94957 38723 59284 790	
49	.17318 62684 12274 03825 73635 426	

N	logarithm	ref
150	.17609 12590 55681 24208 12890 085	(53)
51	.17897 69472 93169 43686 90730 553	
52	.18184 35879 44772 54717 75501 599	
53	.18469 14308 17598 80313 02257 008	
54	.18752 07208 36463 06667 61551 246	
155	.19033 16981 70291 48445 29652 054	(54)
56	.19312 45983 54461 59692 90108 506	
57	.19589 96524 09233 73676 14811 299	
58	.19865 70869 54422 62320 85602 812	
59	.20139 71243 20451 48292 80201 949	
160	.20411 99826 55924 78085 49555 789	(24)
61	.20682 58760 31849 70957 99933 708	
62	.20951 50145 42630 94439 38505 077	
63	.21218 76044 03957 80764 00914 359	
64	.21484 38480 47697 88493 68896 394	
165	.21748 39442 13906 28283 14889 798	(56)
66	.22010 80880 40055 09904 64992 468	
67	.22271 64711 47583 27998 40759 099	
68	.22530 92817 25862 85364 84608 460	
69	.22788 67046 13673 53841 30103 159	
170	.23044 89213 78273 92854 01698 943	(58)
71	.23299 61103 92153 83612 63892 823	
72	.23552 84469 07548 91683 25659 427	
73	.23804 61031 28795 41456 05302 588	
74	.24054 92482 82599 71984 16135 609	

N	logarithm	ref
175	.24303 80486 86294 44028 47384 691	
76	.24551 26678 14149 82160 51555 501	
77	.24797 32663 61806 62755 56842 878	
78	.25042 00023 08893 97993 72822 644	
79	.25285 30309 79893 16957 03826 918	(59)
180	.25527 25051 03306 06980 37947 012	
81	.25767 85748 69184 51028 97436 764	(36)
82	.26007 13879 85074 79513 24603 113	
83	.26245 10897 30429 47118 07764 170	
84	.26481 78230 09536 46450 89937 964	
185	.26717 17284 03013 80159 47117 948	
86	.26951 29442 17916 31217 54708 981	
87	.27184 16065 36498 96929 03698 656	
88	.27415 78492 63679 85484 16971 889	
89	.27646 18041 73244 14259 72999 684	
190	.27875 36009 52828 96153 63334 758	
91	.28103 33672 47727 53763 50435 983	(62)
92	.28330 12287 03549 60857 74612 716	
93	.28555 73090 07773 76059 72386 464	(64)
94	.28780 17299 30226 04699 81007 064	
195	.29003 46113 62518 01128 77941 665	
96	.29225 60713 56476 05185 19103 066	
97	.29446 62261 61592 92737 17443 177	(25)
98	.29666 51902 61531 11055 39946 725	
99	.29885 30764 09706 65010 00217 844	(36)

N	logarithm	ref	
200	.30102 99956 63981 19521 37388 947	(18)	
01	.30319 60574 20488 87144 41595 325		
02	.30535 13694 46623 76948 89270 729		
03	.30749 60379 13212 91804 50630 216		
04	.30963 01674 25898 75626 26755 870		
205	.31175 38610 55754 29929 56729 552		
06	.31386 72203 69153 40038 48100 893		
07	.31597 03454 56917 75345 78329 188		
08	.31806 33349 62761 55006 14607 368		
09	.32014 62861 11054 00228 65334 470		
210	.32221 92947 33919 26800 72441 618		
11	.32428 24552 97692 66508 15581 299		
12	.32633 58609 28751 43606 04700 811		
13	.32837 96034 38737 72338 78573 383		
14	.33041 37733 49190 83604 82801 342		
215	.33243 84599 15605 33119 13492 585		
16	.33445 37511 50930 89752 63003 939		
17	.33645 97338 48529 51037 89203 587		
18	.33845 64936 04604 83041 42522 023		
19	.34044 41148 40118 33836 94148 037		
220	.34242 26808 22206 23596 39388 660		(67)
21	.34439 22736 85110 69774 66750 523		
22	.34635 29744 50638 62931 72174 875		
23	.34830 48630 48160 67347 51762 162		
24	.35024 80183 34162 80678 09107 322		

(1)

N	logarithm	ref
225	.35218 25181 11362 48416 25780 171	
26	.35410 84391 47400 91800 89659 233	
27	.35602 58571 93122 72010 30489 648	(68)
28	.35793 48470 00453 78925 88391 685	
29	.35983 54823 39887 99412 79298 655	(48)
230	.36172 78360 17592 87886 77771 123	
31	.36361 19798 92144 30875 74441 331	
32	.36548 79848 90899 67297 40634 471	
33	.36735 59210 26018 97218 91388 355	(33)
34	.36921 58574 10142 83901 02998 592	
235	.37106 78622 71736 26920 04805 047	
36	.37291 20029 70106 58068 81341 740	
37	.37474 83460 10103 86528 98492 897	
38	.37657 69570 56511 95446 61250 476	
39	.37839 79009 48137 68500 16611 601	(33)
240	.38021 12417 11606 02293 62445 874	
41	.38201 70425 74868 38407 68839 665	(33)
42	.38381 53659 80431 27671 41388 372	
43	.38560 62735 98312 18647 51395 163	
44	.38738 98263 38729 42431 32263 032	
245	.38916 60843 64532 46621 06936 225	
46	.39093 51071 03379 12701 81786 479	
47	.39269 69532 59665 73074 28386 337	
48	.39445 16808 26216 26530 79207 843	
49	.39619 93470 95736 34112 77882 553	

N	logarithm	ref
250	.39794 00086 72037 60957 25222 106	(70)
51	.39967 37214 81038 13934 05493 167	
52	.40140 05407 81544 09572 97498 546	
53	.40312 05211 75817 91961 79770 835	
54	.40483 37166 19938 05946 07263 166	
255	.40654 01804 33955 17062 14589 029	(72)
56	.40823 99653 11849 56170 99111 578	
57	.40993 31233 31294 53716 28954 659	
58	.41161 97059 63230 15891 38549 512	
59	.41329 97640 81251 82752 06669 481	
260	.41497 33479 70817 96442 02440 527	(28)
61	.41664 05073 38280 96192 29025 695	
62	.41830 12913 19745 45602 37931 654	
63	.41995 57484 89757 86897 22335 839	
64	.42160 39268 69831 06368 64445 587	
265	.42324 58739 36807 85041 92533 969	(44)
66	.42488 16366 31066 98746 22886 291	
67	.42651 12613 64575 22201 85712 730	
68	.42813 47940 28788 82457 66094 187	
69	.42975 22800 02407 98008 72285 159	
270	.43136 37641 58987 31188 50837 098	(35)
71	.43296 92908 74405 72952 11801 949	
72	.43456 89040 34198 70939 51254 732	
73	.43616 26470 40756 03721 37493 198	
74	.43775 05628 20387 96377 66655 218	

N	logarithm	ref
275	.43933 26938 30262 65032 27221 818	
76	.44090 90820 65217 70659 02828 050	
77	.44247 97690 64448 55377 77563 196	(21)
78	.44404 47959 18076 27567 01720 970	
79	.44560 42032 73597 55425 67599 066	
280	.44715 80313 42219 22113 96940 480	
81	.44870 63199 05079 89286 39179 163	(22)
82	.45024 91083 19361 09692 29861 974	
83	.45178 64355 24290 23555 89519 106	(74)
84	.45331 83400 47037 67652 03072 245	
285	.45484 48600 08510 20361 76224 843	
86	.45636 60331 29043 00517 04440 239	
87	.45788 18967 33992 32522 16281 086	
88	.45939 24877 59230 85065 87502 801	
89	.46089 78427 56547 85708 03397 887	
290	.46239 79978 98956 08733 28467 630	
91	.46389 29889 85907 28907 93897 149	
92	.46538 28514 48418 29150 18646 899	
93	.46686 76203 54109 45624 37585 126	(55)
94	.46834 73304 12157 29393 31993 152	
295	.46982 20159 78162 99504 69174 898	
96	.47129 17110 58938 58244 96673 737	
97	.47275 64493 17212 35263 52836 810	
98	.47421 62640 76255 23347 11024 374	
99	.47567 11883 24429 64807 42822 702	

N	logarithm	ref
300	.47712 12547 19662 43729 50279 033	
01	.47856 64955 93843 35711 73044 118	
02	.48000 69429 57150 63208 28119 501	
03	.48144 26285 02305 01157 02160 815	
04	.48287 35836 08753 74239 12890 547	
305	.48429 98393 46785 83867 20096 190	
06	.48572 14264 81579 99834 39645 956	
07	.48713 83754 77186 48475 46084 365	(76)
08	.48855 07165 00444 26188 98940 193	
09	.48995 84794 24834 64246 60990 978	
310	.49136 16938 34272 67966 67041 001	
11	.49276 03890 26837 50555 30231 833	(47)
12	.49415 45940 18442 79214 27497 454	
13	.49554 43375 46448 48480 81265 049	(77)
14	.49692 96480 73214 93197 52200 246	
315	.49831 05537 89600 51008 85331 704	
16	.49968 70826 18403 81842 22991 759	
17	.50105 92622 17751 49455 32290 164	(65)
18	.50242 71199 84432 67814 17590 896	
19	.50379 06830 57181 12808 30467 342	
320	.50514 99783 19905 97606 86944 736	
21	.50650 50324 04872 07812 95691 427	
22	.50785 58716 95830 90479 37322 656	
23	.50920 25223 31102 89007 65033 701	
24	.51054 50102 06612 13960 75894 025	

N	logarithm	ref
325	.51188 33609 78874 37877 90273 685	
26	.51321 76000 67939 00285 38303 307	
27	.51454 77526 60286 07249 55412 109	
28	.51587 38437 11679 08015 06285 341	
29	.51719 58979 49974 29512 64356 580	
330	.51851 39398 77887 47804 52278 745	
31	.51982 79937 75718 73860 81406 073	(79)
32	.52113 80837 04036 29426 02381 415	
33	.52244 42335 06319 87139 85064 960	
34	.52374 64668 11564 47519 78148 046	
335	.52504 48070 36845 23893 53927 345	
36	.52633 92773 89844 04886 21997 407	
37	.52762 99008 71338 62619 00147 902	(81)
38	.52891 67002 77654 73362 67492 106	
39	.53019 96982 03082 16009 02549 319	
340	.53147 89170 42255 12375 39087 891	
41	.53275 43789 92497 72041 69040 714	
42	.53402 61060 56135 03134 01281 770	
43	.53529 41200 42770 49213 66487 758	
44	.53655 84425 71530 11204 63048 374	
345	.53781 90950 73274 12094 90661 208	
46	.53907 60987 92776 60977 42691 535	
47	.54032 94747 90873 71853 53573 032	(22)
48	.54157 92439 46580 91505 53524 557	
49	.54282 54269 59179 89654 01719 772	(84)

N	logarithm	ref
350	.54406 80443 50275 63549 84773 639	(85)
51	.54530 71164 65824 08109 15888 677	
52	.54654 26634 78131 01681 88944 449	
53	.54777 47053 87822 56549 70693 160	
54	.54900 32620 25787 82276 94231 825	
355	.55022 83530 55094 09087 90905 403	(83)
56	.55144 99979 72875 17515 10211 592	
57	.55266 82161 12193 19654 74140 562	
58	.55388 30266 43874 36478 41215 865	
59	.55509 44485 78319 14781 65293 944	
360	.55630 25007 67287 26501 75335 960	
61	.55750 72019 05657 92307 26669 515	
62	.55870 85705 33165 70550 34825 711	
63	.55990 66250 36112 51879 54278 457	
64	.56110 13836 49055 99034 61992 060	
365	.56229 28644 56474 70586 06480 057	(87)
66	.56348 10853 94410 66639 45153 117	
67	.56466 60642 52089 33798 75290 930	
68	.56584 78186 73517 65972 27326 911	
69	.56702 63661 59060 36909 94676 565	
370	.56820 17240 66994 99680 84506 895	(89)
71	.56937 39096 15045 87634 52085 502	
72	.57054 29398 81897 50738 92097 928	
73	.57170 88318 08687 60550 68969 387	
74	.57287 16022 00480 16450 41087 603	

N	logarithm	ref
375	.57403 12677 27718 85165 38112 191	
76	.57518 78449 27661 05005 54360 836	
77	.57634 13502 05792 85653 93519 209	
78	.57749 17998 37225 33781 10388 631	
79	.57863 92099 68072 34193 14620 595	(77)
380	.57978 35966 16810 15675 00723 705	
81	.58092 49756 75619 30154 20153 251	
82	.58206 33629 11708 73284 87824 930	
83	.58319 87739 68622 74037 90461 295	(73)
84	.58433 12243 67530 80379 12001 663	
385	.58546 07295 08500 67624 86773 351	
86	.58658 73046 71754 95581 09775 411	
87	.58771 09650 18911 40099 51439 597	
88	.58883 17255 94207 24221 18396 011	
89	.58994 96013 25707 73624 49469 117	(90)
390	.59106 46070 26499 20650 15330 612	
91	.59217 67573 95866 80740 79470 066	
92	.59328 60670 20457 24706 56492 014	
93	.59439 25503 75426 69810 50821 740	
94	.59549 62218 25574 12258 54832 124	
395	.59659 70956 26460 23278 10824 918	
96	.59769 51859 25512 30576 77335 672	
97	.59879 05067 63115 06587 68482 407	
98	.59988 30720 73687 84531 37606 791	
99	.60097 28956 86748 22954 35776 376	(93)

N	logarithm	ref
400	.60205 99913 27962 39042 74777 894	(12)
01	.60314 43726 20182 30654 46411 481	
02	.60422 60530 84470 06665 78984 272	
03	.60530 50461 41109 44887 32092 581	
04	.60638 13651 10604 96470 26659 677	
405	.60745 50232 14668 55396 63727 183	(95)
06	.60852 60335 77194 11325 88019 163	
07	.60959 44092 25220 03755 86506 608	
08	.61066 01630 89879 95147 64144 818	
09	.61172 33080 07341 80360 95027 177	
410	.61278 38567 19735 49450 94118 500	
11	.61384 18218 76069 20585 79545 304	
12	.61489 72160 33134 59559 85489 840	
13	.61595 00516 56401 02097 28726 431	
14	.61700 03411 20898 94867 15718 135	
415	.61804 80967 12092 70861 90214 573	(84)
16	.61909 33306 26742 74527 51996 316	
17	.62013 60549 73757 51775 14611 056	
18	.62117 62817 75035 19750 02723 417	
19	.62221 40229 66295 30985 07395 994	
420	.62324 92903 97900 46322 09830 566	(30)
21	.62428 20958 35668 30744 40669 234	
22	.62531 24509 61673 86029 52970 247	
23	.62634 03673 75042 33900 42752 060	
24	.62736 58565 92732 63127 42089 758	

(2)

N	logarithm	ref
425	.62838 89300 50311 53811 26921 049	
26	.62940 95991 02718 91860 15962 330	
27	.63042 78750 25023 86459 79647 723	
28	.63144 37690 13172 03126 20190 289	
29	.63245 72921 84724 24725 17330 324	
430	.63346 84555 79586 52640 50881 532	
31	.63447 72701 60731 60075 02803 262	(88)
32	.63548 37468 14912 09274 00392 887	
33	.63648 78963 53365 44269 80664 497	(97)
34	.63748 97295 12510 70559 26592 534	
435	.63848 92569 54637 32941 41357 715	
36	.63948 64892 68586 02562 79910 971	
37	.64048 14369 70421 84040 41105 880	
38	.64147 41105 04099 53358 31536 984	
39	.64246 45202 42121 37063 37411 506	(73)
440	.64345 26764 86187 43117 76777 607	
41	.64443 85894 67838 53601 44883 237	
42	.64542 22693 49091 89296 04139 470	
43	.64640 37262 23069 56023 01044 897	(100)
44	.64738 29701 14619 82453 09563 822	
445	.64836 00109 80931 58950 98044 750	
46	.64933 48587 12141 86868 89151 110	
47	.65030 75231 31936 47555 23914 459	
48	.65127 80139 98144 00199 46496 269	
49	.65224 63410 03323 17491 90263 537	(103)

N	logarithm	ref
450	.65321 25137 75343 67937 63169 118	
51	.65417 65418 77960 53525 96118 212	
52	.65513 84348 11382 11322 27048 181	
53	.65609 82020 12831 87416 41009 586	
54	.65705 58528 57103 91531 67878 595	
455	.65801 13966 57112 40470 49825 218	
56	.65896 48426 64434 98447 25780 632	
57	.65991 62000 69850 22235 35461 452	(66)
58	.66086 54780 03869 18934 16687 603	
59	.66181 26855 37261 24042 52536 041	
460	.66275 78316 81574 07408 15160 070	
61	.66370 09253 89648 14507 46818 185	(46)
62	.66464 19755 56125 50397 11830 278	
63	.66558 09910 17953 13567 41931 084	(106)
64	.66651 79805 54880 86818 78023 419	
465	.66745 29528 89953 92174 79931 086	
66	.66838 59166 90000 16740 28777 302	
67	.66931 68805 66112 16308 80510 898	(82)
68	.67024 58530 74124 03422 40387 539	
69	.67117 28427 15083 26486 13478 878	
470	.67209 78579 35717 46441 42193 994	
71	.67302 09071 28896 17405 65090 332	
72	.67394 19986 34087 77590 18730 687	
73	.67486 11407 37811 56715 52881 245	
74	.67577 83416 74085 06050 35881 845	

N	logarithm	ref
475	.67669 36096 24866 57110 88556 863	(107)
76	.67760 69527 20493 14967 98639 424	
77	.67851 83790 40113 92022 30480 981	
78	.67942 78966 12118 88021 54000 549	
79	.68033 55134 14563 22009 69639 670	
480	.68124 12373 75587 21814 99834 822	(108)
81	.68214 50763 73831 76601 49558 475	
82	.68304 70382 38849 57929 06228 612	
83	.68394 71307 51512 14687 50212 741	
84	.68484 53616 44412 47192 78777 319	
485	.68574 17386 02263 65657 06229 169	(108)
86	.68663 62692 62293 38168 88784 110	
87	.68752 89612 14634 33246 32050 644	
88	.68841 98220 02710 61952 69651 979	
89	.68930 88591 23620 24493 51193 392	
490	.69019 60800 28513 66142 44325 172	(40)
91	.69108 14921 22968 47275 36909 835	
92	.69196 51027 67360 32223 19175 427	
93	.69284 69192 77230 01587 30166 573	
94	.69372 69489 23646 92595 65775 284	
495	.69460 51989 33568 72012 65168 830	(56)
96	.69548 16764 90197 46052 16596 790	
97	.69635 63887 33332 11680 50456 936	
98	.69722 93427 59717 53634 15271 500	
99	.69810 05456 23389 91416 59050 360	

N	logarithm	ref
500	.69897 00043 36018 80478 62611 053	(88)
01	.69983 77258 67245 71727 91038 132	
02	.70070 37171 45019 33455 42882 114	
03	.70156 79850 55927 39709 82240 903	
04	.70243 05364 45525 29094 34887 493	
505	.70329 13781 18661 37906 14492 835	(112)
06	.70415 05168 39799 11483 17159 782	
07	.70500 79593 33335 97570 80382 191	
08	.70586 37122 83919 25467 44652 113	
09	.70671 77823 36758 74656 80767 116	
510	.70757 01760 97936 36583 51977 976	
11	.70842 09001 34712 73178 66031 591	
12	.70926 99609 75830 75692 36500 525	
13	.71011 73651 11816 27342 14171 855	
14	.71096 31189 95275 73237 66343 606	
515	.71180 72290 41191 00995 73322 999	
16	.71264 97016 27211 35412 75938 459	
17	.71349 05430 93942 50516 44193 707	
18	.71432 97597 45233 02273 44058 429	
19	.71516 73578 48457 85185 55581 620	
520	.71600 33436 34799 15963 39829 474	(111)
21	.71683 77232 99524 47423 63411 866	
22	.71767 05030 02262 15713 66414 642	(114)
23	.71850 16888 67274 23926 01265 789	
24	.71933 12869 83726 65123 75320 601	

N	logarithm	ref
525	.72015 93034 05956 87757 97663 724	
26	.72098 57441 53739 06418 59724 786	
27	.72181 06152 12546 60820 68739 944	
28	.72263 39225 33812 25890 01834 534	
29	.72345 56720 35185 75773 55542 245	
530	.72427 58696 00789 04563 29922 916	
31	.72509 45210 81469 06485 07121 910	
32	.72591 16322 95048 18267 60275 238	
33	.72672 72090 26572 26371 59170 079	
34	.72754 12570 28556 41723 23101 677	
535	.72835 37820 21228 44562 08023 447	
36	.72916 47896 92770 01979 03483 134	
37	.72997 42856 99555 60686 54105 950	
38	.73078 22756 66389 17530 09674 106	
39	.73158 87651 86738 70217 46324 884	
540	.73239 37598 22968 50709 88226 045	
41	.73319 72651 06569 43687 93482 439	(110)
42	.73399 92865 38386 92473 49190 896	
43	.73479 98295 88846 94758 47715 797	
44	.73559 88996 98179 90460 88643 680	
545	.73639 65022 76642 43998 67744 129	
46	.73719 26427 04737 23242 74882 145	
47	.73798 73263 33430 77381 26473 725	(48)
48	.73878 05584 84369 15899 04044 166	
49	.73957 23444 50091 90847 58043 203	

N	logarithm	ref
550	.74036 26894 94243 84553 64610 765	
51	.74115 15988 51785 04886 91802 387	
52	.74193 90777 29198 90180 40216 997	
53	.74272 51313 04698 25870 70376 451	
54	.74350 97647 28429 74899 14952 143	
555	.74429 29831 22676 23888 97396 981	
56	.74507 47915 82057 47088 39109 918	
57	.74585 51951 73728 90044 34334 989	(116)
58	.74663 41989 37578 74947 04988 014	
59	.74741 18078 86423 29561 15933 112	
560	.74818 80270 06200 41635 34329 428	
61	.74896 28612 56161 40658 53977 688	
62	.74973 63155 69061 08807 76568 110	
63	.75050 83948 51346 22909 45827 078	(118)
64	.75127 91039 83342 29213 67250 922	
565	.75204 84478 19438 52758 14881 339	
66	.75281 64311 88271 43077 26908 053	
67	.75358 30588 92906 57989 23278 716	
68	.75434 83357 11018 87173 40461 192	
69	.75511 22663 95071 17228 70555 240	(120)
570	.75587 48556 72491 39883 13613 790	
71	.75663 61082 45848 05004 02841 300	(121)
72	.75739 60287 93024 20038 41829 186	
73	.75815 46219 67389 97493 00715 015	
74	.75891 18923 97973 52043 53670 033	

N	logarithm	ref
575	.75966 78446 89630 48844 02993 228	(83)
76	.76042 24834 23212 04587 24891 749	
77	.76117 58131 55731 42848 88336 676	
78	.76192 78384 20529 05229 40786 834	
79	.76267 85637 27436 19789 22665 496	
580	.76342 79935 62937 28254 65856 577	(83)
81	.76417 61323 90330 73454 49766 106	
82	.76492 29846 49888 48429 31286 096	
83	.76566 85547 59014 08638 31922 629	
84	.76641 28471 12399 48671 56035 846	
585	.76715 58660 82180 44858 28220 697	(123)
86	.76789 76160 18090 65145 74974 073	
87	.76863 81012 47614 47606 35592 986	
88	.76937 73260 76138 48914 69382 099	
89	.77011 52947 87101 64120 30375 759	
590	.77085 20116 42144 19026 06563 845	(125)
91	.77158 74808 81255 36466 67722 210	
92	.77232 17067 22919 77766 34062 684	
93	.77305 46933 64262 60639 66715 598	
94	.77378 64449 81193 54784 90225 757	
595	.77451 69657 28549 56403 86472 582	(126)
96	.77524 62597 40236 42868 48413 321	
97	.77597 43311 29369 08739 50496 877	
98	.77670 11839 88410 84328 80211 649	
99	.77742 68223 89311 37982 81725 691	

N	logarithm	ref
600	.77815 12503 83643 63250 87667 980	(126)
01	.77887 44720 02739 52088 58507 000	
02	.77959 64912 57824 55233 10433 065	
03	.78031 73121 40151 30873 91874 357	
04	.78103 69386 21131 82729 65508 448	
605	.78175 53746 52468 88628 66610 478	(128)
06	.78247 26241 66286 20678 39549 762	
07	.78318 86910 75257 58096 01956 305	
08	.78390 35792 72734 93760 50279 494	
09	.78461 72926 32875 35534 00909 248	
610	.78532 98350 10767 03388 57485 138	(112)
11	.78604 12102 42554 23362 07245 574	
12	.78675 14221 45561 19355 77034 903	
13	.78746 04745 18415 03774 22662 815	
14	.78816 83711 41167 67996 83473 313	
615	.78887 51157 75416 73659 07008 585	(68)
16	.78958 07121 64425 45710 36329 140	
17	.79028 51640 33241 68204 54661 673	
18	.79098 84750 88815 83767 98379 926	
19	.79169 06490 20117 97679 79674 344	
620	.79239 16894 98253 87488 04429 948	(98)
21	.79309 16001 76580 19075 28608 220	
22	.79379 03846 90818 70076 67620 780	
23	.79448 80466 59169 61543 57596 283	
24	.79518 45896 82423 98735 64886 401	

(3)

N	logarithm	ref
625	.79588 00173 44075 21914 50444 211	
26	.79657 43332 10429 68002 18653 996	
27	.79726 75408 30716 43958 15613 503	
28	.79795 96437 37196 12718 89589 193	
29	.79865 06454 45268 92534 86205 839	
630	.79934 05494 53581 70530 22720 651	
31	.80002 93592 44134 31301 69298 500	(45)
32	.80071 70782 82385 01363 60380 707	
33	.80140 37100 17355 10237 65860 332	
34	.80208 92578 81732 68976 69679 111	
635	.80277 37252 91975 66903 32485 271	
36	.80345 71156 48413 87335 54979 843	
37	.80413 94323 35350 43063 09376 751	
38	.80482 06787 21162 32329 67856 289	
39	.80550 08581 58400 16068 28852 415	
640	.80617 99739 83887 17128 24333 683	
41	.80685 80295 18817 42224 83770 096	(38)
42	.80753 50280 68853 27334 33080 374	
43	.80821 09729 24222 07249 19385 055	(94)
44	.80888 58673 59812 10000 74711 603	
645	.80955 97146 35267 76848 63771 618	
46	.81023 25179 95084 08529 02422 648	
47	.81090 42806 68700 38445 84305 628	(65)
48	.81157 50058 70593 33482 13282 972	
49	.81224 46968 00369 23101 08563 558	

N	logarithm	ref
650	.81291 33566 42855 57399 27662 632	(129)
51	.81358 09885 68191 94767 39482 620	
52	.81424 75957 31920 19806 75692 254	
53	.81491 31812 75073 92142 93105 655	
54	.81557 77483 24267 26770 92801 056	
655	.81624 12999 91783 06559 63153 760	(129)
56	.81690 38393 75660 27536 43674 289	
57	.81756 53695 59780 77566 44427 070	
58	.81822 58936 13955 49034 01745 528	
59	.81888 54145 94009 86128 04846 071	
660	.81954 39355 41868 67325 89667 692	(124)
61	.82020 14594 85640 23664 65718 977	
62	.82085 79894 39699 93382 18795 021	
63	.82151 35284 04773 13504 17029 555	
64	.82216 80793 68017 48947 39770 362	
665	.82282 16453 03104 59703 48108 396	
66	.82347 42291 70301 06661 22453 908	
67	.82412 58339 16548 96620 06238 752	
68	.82477 64624 75545 67041 15536 994	
69	.82542 61177 67823 11077 02041 195	
670	.82607 48027 00826 43414 91316 292	(122)
71	.82672 25201 68992 07463 59484 850	
72	.82736 92730 53825 24407 59386 355	
73	.82801 50642 23976 84647 61709 948	
74	.82865 98965 35319 82140 37536 849	

N	logarithm	ref
675	.82930 37728 31024 92145 76059 203	(130)
76	.82994 66959 41635 92884 04881 053	
77	.83058 86686 85144 31600 60170 603	
78	.83122 96938 67063 35530 39938 266	
79	.83186 97742 80501 68249 65780 703	
680	.83250 89127 06236 31896 76476 838	(103)
81	.83314 71119 12785 15739 80768 680	
82	.83378 43746 56478 91563 06429 661	
83	.83442 07036 81532 56339 98239 410	
84	.83505 61017 20116 22655 38670 717	
685	.83569 05714 92425 57334 91877 324	
86	.83632 41157 06751 68735 03876 705	
87	.83695 67370 59550 43142 29577 688	
88	.83758 84382 35511 30726 00437 321	
89	.83821 92219 07625 81483 94974 496	
690	.83884 90907 37255 31616 28050 155	(130)
91	.83947 80473 74198 40758 33677 243	
92	.84010 60944 56757 80498 80080 482	
93	.84073 32346 11806 74605 24720 363	
94	.84135 94704 54854 91374 90961 979	
695	.84198 48045 90113 88524 26943 076	
96	.84260 92396 10562 11026 90913 504	
97	.84323 27780 98009 42304 95817 443	
98	.84385 54226 23161 09175 39108 719	
99	.84447 71757 45681 40948 41667 387	

N	logarithm	ref
700	.84509 80400 14256 83071 22162 586	(131)
01	.84571 80179 66658 65706 40223 373	
02	.84633 71121 29805 27630 53277 624	
03	.84695 53250 19823 95834 47841 653	
04	.84757 26591 42112 21203 26333 396	
705	.84818 91169 91398 70649 55084 080	(131)
06	.84880 47010 51803 76071 08082 107	
07	.84941 94137 96899 40498 74044 368	
08	.85003 32576 89769 01798 31620 772	
09	.85064 62351 83066 54285 38844 798	
710	.85125 83487 19075 28609 28294 350	(131)
11	.85186 96007 29766 30258 48771 930	
12	.85247 99936 36856 37036 47600 539	
13	.85308 95298 51865 55853 44812 124	
14	.85369 82117 76174 39176 11529 509	
715	.85430 60418 01080 61474 29662 345	(132)
16	.85491 30223 07855 55999 78604 812	
17	.85551 91556 67800 12229 66890 634	
18	.85612 44442 42300 34303 02682 891	
19	.85672 88903 82882 60776 76506 514	
720	.85733 24964 31268 46023 12724 907	(132)
21	.85793 52647 19429 03588 32874 532	
22	.85853 71975 69639 11828 64058 462	
23	.85913 82972 94530 82137 19118 697	
24	.85973 85661 97146 90071 72214 659	

N	logarithm	ref
725	.86033 80065 70993 69690 53689 735	(132)
26	.86093 66207 00093 71400 91667 405	
27	.86153 44108 59037 83621 34642 487	
28	.86213 13793 13037 18555 99381 007	
29	.86272 75283 17974 62377 01674 195	
730	.86332 28601 20455 90107 43869 005	(133)
31	.86391 73769 57860 45494 52580 476	
32	.86451 10810 58391 86160 82542 065	
33	.86510 39746 41127 94317 28131 026	
34	.86569 60599 16070 53320 12679 877	
735	.86628 73390 84194 90350 57215 257	(133)
36	.86687 78143 37498 85493 64715 859	
37	.86746 74878 59051 47489 93316 005	
38	.86805 63618 23041 56431 32065 512	
39	.86864 44383 94825 73669 35855 143	
740	.86923 17197 30976 19202 21895 843	(134)
41	.86981 82079 79328 16803 78665 370	
42	.87040 39052 79027 07155 89474 449	
43	.87098 88137 60575 29242 26723 412	
44	.87157 29355 45878 70260 29486 875	
745	.87215 62727 48292 84304 36246 479	
46	.87273 88274 72668 80072 06358 334	
47	.87332 06018 15398 77842 28161 585	
48	.87390 15978 64461 35971 78476 550	
49	.87448 18176 99466 47154 67574 981	

N	logarithm	ref
750	.87506 12633 91700 04686 75501 138	(107)
51	.87563 99370 04168 38974 59851 093	
52	.87621 78405 91642 24526 91749 783	
53	.87679 49762 00700 57663 55772 200	
54	.87737 13458 69774 05175 30908 156	
755	.87794 69516 29188 24165 53341 606	(135)
56	.87852 17955 01206 53302 47777 578	
57	.87909 58795 00072 75709 02275 463	
58	.87966 92056 32053 53714 52009 542	
59	.88024 17758 95480 35691 30049 867	
760	.88081 35922 80791 35196 38112 652	(135)
61	.88138 46567 70572 82636 87243 356	
62	.88195 49713 39600 49675 57542 198	
63	.88252 45379 54880 46591 27295 662	
64	.88309 33585 75689 92806 25213 877	
765	.88366 14351 53617 60791 64868 061	(136)
66	.88422 87696 32603 93559 27850 242	
67	.88479 53639 48980 95946 71615 425	
68	.88536 12200 31511 99900 49390 611	
69	.88592 63398 01431 03960 42922 400	
770	.88649 07251 72481 87146 24162 298	(136)
71	.88705 43780 50956 97445 79233 692	
72	.88761 73003 35736 15102 47164 358	
73	.88817 94939 18324 90897 46881 272	
74	.88874 09606 82892 59620 88828 545	

N	logarithm	ref
775	.88930 17025 06310 28923 92263 107	
76	.88986 17212 58188 43742 55784 958	
77	.89042 10188 00914 26481 56948 514	
78	.89097 95969 89688 93145 86858 065	
79	.89153 74576 72564 45604 57453 257	
780	.89209 46026 90480 40171 52719 559	
81	.89265 10338 77300 32684 30294 063	
82	.89320 67530 59848 00262 16859 013	
83	.89376 17620 57943 39921 79304 727	
84	.89431 60626 84438 44227 93880 961	
785	.89486 96567 45252 54154 77422 352	
86	.89542 25460 39407 89331 88210 687	
87	.89597 47323 59064 55847 49105 931	(137)
88	.89652 62174 89555 31779 92221 072	
89	.89707 70032 09420 30626 72614 871	
790	.89762 70912 90441 42799 48213 865	
91	.89817 64834 97676 55350 74432 872	
92	.89872 51815 89493 50098 14724 619	
93	.89927 31873 17603 80309 22536 717	
94	.89982 05024 27096 26109 05871 354	
795	.90036 71286 56470 28771 42813 002	
96	.90091 30677 37669 04052 74995 739	
97	.90145 83213 96112 34726 66008 272	(63)
98	.90200 28913 50729 42475 73165 323	
99	.90254 67793 13991 39295 43892 938	

N	logarithm	ref
800	.90308 99869 91943 58564 12166 842	
01	.90363 25160 84237 65931 35991 762	
02	.90417 43682 84163 50175 83800 429	
03	.90471 55452 78680 94182 45868 717	
04	.90525 60487 48451 26187 16373 219	
805	.90579 58803 67868 51436 62544 761	
06	.90633 50418 05090 64408 69481 528	
07	.90687 35347 22070 41738 22564 191	
08	.90741 13607 74586 15991 64048 624	
09	.90794 85216 12272 30432 36285 459	(77)
810	.90848 50188 78649 74918 01116 130	
11	.90902 08542 11156 03069 03308 483	(51)
12	.90955 60292 41175 30847 25408 110	
13	.91009 05455 94068 16681 62080 981	
14	.91062 44048 89201 23277 23895 555	
815	.91115 76087 39976 61242 63525 412	
16	.91169 01587 53861 14669 01533 765	
17	.91222 20565 32415 48794 14216 290	
18	.91275 33036 71322 99882 32416 125	
19	.91328 39017 60418 47450 87772 230	
820	.91381 38523 83716 68972 31507 447	
21	.91434 31571 19440 77180 40593 417	(127)
22	.91487 18175 40050 40107 16934 251	
23	.91539 98352 12269 83976 77077 566	(49)
24	.91592 72116 97115 79081 22878 788	

(4)

N	logarithm	ref
825	.91645 39485 49925 08761 77500 850	
26	.91698 00473 20382 21618 66115 379	
27	.91750 55095 52546 67071 16671 845	(137)
28	.91803 03367 84880 14388 53107 082	
29	.91855 45305 50273 55311 51367 881	(125)
830	.91907 80923 76073 90383 27603 520	
31	.91960 10237 84110 99107 27842 229	
32	.92012 33262 90723 94048 89385 263	
33	.92064 50014 06787 58996 46024 115	
34	.92116 60506 37738 71296 52000 003	
835	.92168 64754 83602 08477 03370 152	
36	.92220 62774 39016 39271 40112 364	
37	.92272 54579 93259 99155 17878 099	
38	.92324 40186 30276 50506 44784 941	
39	.92376 19608 28700 27499 86012 269	(69)
840	.92427 92860 61881 65843 47219 513	
41	.92479 59957 97912 17466 56935 259	
42	.92531 20914 99649 50265 78058 181	
43	.92582 75746 24742 33015 89458 195	
44	.92634 24466 25655 05550 90359 194	
845	.92685 67089 49692 34319 92714 212	
46	.92737 03630 39023 53421 80141 007	
47	.92788 34103 30706 91221 26162 011	
48	.92839 58522 56713 82648 79478 705	
49	.92890 76902 43952 67285 39798 138	

N	logarithm	ref
850	.92941 89257 14292 73332 64309 996	
51	.92992 95600 84587 87567 62278 018	
52	.93043 95947 66700 11381 53351 277	
53	.93094 90311 67523 02999 84110 763	(59)
54	.93145 78706 89005 05981 17036 671	
855	.93196 61147 28172 64091 26503 875	
56	.93247 37646 77153 22647 57579 236	
57	.93298 08219 23198 16429 25296 947	(85)
58	.93348 72878 48705 44246 54719 272	
59	.93399 31638 31242 30262 85442 123	(137)
860	.93449 84512 43567 72161 88270 480	
61	.93500 31514 53654 76251 66560 118	
62	.93550 72658 24712 79596 40192 209	
63	.93601 07957 15209 59266 36308 698	(31)
64	.93651 37424 78893 28795 37781 834	
865	.93701 61074 64814 21934 67913 640	
66	.93751 78920 17346 63791 18053 444	
67	.93801 90974 76210 29437 53676 919	
68	.93851 97251 76491 90080 63981 482	
69	.93901 97764 48666 46874 50213 577	
870	.93951 92526 18618 52462 78746 662	
71	.94001 81550 07663 20335 56367 872	
72	.94051 64849 32567 22084 17299 918	
73	.94101 42437 05569 72637 44176 182	
74	.94151 14326 34403 03561 78494 827	

N	logarithm	ref
875	.94200 80530 22313 24507 09995 744	
76	.94250 41061 68080 72879 68925 932	
77	.94299 95933 66040 51822 80278 381	(138)
78	.94349 45159 06102 56584 74800 453	
79	.94398 88750 73771 89353 87864 159	
880	.94448 26721 50168 62639 14166 554	
81	.94497 59084 12047 91274 23677 895	(138)
82	.94546 85851 31819 73122 82272 184	
83	.94596 07035 77568 58561 59053 733	(53)
84	.94645 22650 13073 08817 41528 417	
885	.94694 32706 97825 43234 19453 931	
86	.94743 37218 87050 75544 38433 844	
87	.94792 36198 31726 39219 65090 149	(52)
88	.94841 29657 78601 01974 46952 770	
89	.94890 17609 70213 69495 92036 804	
890	.94939 00066 44912 78472 35433 697	
91	.94987 77040 36874 78993 03115 843	
92	.95036 48543 76123 06390 26540 057	
93	.95085 14588 88546 42595 05528 752	
94	.95133 75187 95917 67076 61303 406	
895	.95182 30353 15911 97435 66437 970	
96	.95230 80096 62125 19720 83885 217	
97	.95279 24430 44092 08536 93101 734	
98	.95327 63366 67304 37013 27652 485	
99	.95375 96917 33228 76699 95508 631	

N	logarithm	ref
900	.95424 25094 39324 87459 00558 065	
01	.95472 47909 79062 97417 31621 860	
02	.95520 65375 41941 73047 33507 159	
03	.95568 77503 13505 79441 23323 151	
04	.95616 84304 75363 30843 64437 128	
905	.95664 85792 05203 31507 60047 817	
06	.95712 81976 76813 06937 78398 533	
07	.95760 72870 60095 25584 72139 016	(139)
08	.95808 58485 21085 11053 05267 542	
09	.95856 38832 21967 44886 52439 847	
910	.95904 13923 21093 59991 87214 165	
11	.95951 83769 72998 24763 28008 178	(139)
12	.95999 48383 28416 17968 63169 579	
13	.96047 07775 34298 94458 29603 233	
14	.96094 61957 33831 41756 72850 399	
915	.96142 10940 66448 27596 70375 223	
16	.96189 54736 67850 38455 54076 550	
17	.96236 93356 70021 09152 22705 293	
18	.96284 26812 01242 43563 89924 988	
19	.96331 55113 86111 26519 69202 086	(139)
920	.96378 78273 45555 26929 52549 017	
21	.96425 96301 96848 92204 96363 398	
22	.96473 09210 53629 34028 84207 132	
23	.96520 17010 25912 05529 93345 930	
24	.96567 19712 20106 69918 49219 225	

N	logarithm	ref
925	.96614 17327 39032 60638 09729 001	(140)
26	.96661 09866 81934 33088 79320 032	
27	.96707 97341 44497 07976 11270 011	
28	.96754 79762 18862 06340 15412 366	
29	.96801 57139 93641 76318 47673 879	
930	.96848 29485 53935 11696 17320 034	(140)
31	.96894 96809 81342 62296 07659 929	
32	.96941 59123 53981 36261 66166 249	
33	.96988 16437 46499 94284 80510 865	
34	.97034 68762 30093 35830 17899 845	
935	.97081 16108 72517 77407 66309 708	(140)
36	.97127 58487 38105 22943 77776 486	
37	.97173 95908 87778 26302 75767 321	
38	.97220 28383 79064 46007 50867 825	
39	.97266 55922 66110 92210 31544 081	
940	.97312 78535 99698 65962 79582 942	(140)
41	.97358 96234 27256 90834 22975 106	
42	.97405 09027 92877 36927 02479 279	
43	.97451 16927 37328 37337 71889 622	
44	.97497 19942 98068 97111 56119 634	
945	.97543 18085 09262 94738 35610 736	(120)
46	.97589 11364 01792 76236 90270 192	
47	.97634 99790 03273 41875 01137 759	
48	.97680 83373 38066 25571 73270 792	
49	.97726 62124 27292 67028 08920 584	

N	logarithm	ref
950	.97772 36052 88847 76632 25945 810	(141)
51	.97818 05169 37413 93184 82569 196	
52	.97863 69483 84474 34489 36028 371	
53	.97909 29006 38326 40853 29398 477	
54	.97954 83747 04095 11543 67869 929	
955	.98000 33715 83746 34242 13047 035	
56	.98045 78922 76100 07542 91389 496	
57	.98091 19377 76843 56537 80746 375	
58	.98136 55090 78544 41531 07028 617	
59	.98181 86071 70663 59927 51428 857	
960	.98227 12330 39568 41336 37223 769	
61	.98272 33876 68545 35933 34082 002	
62	.98317 50720 37812 96122 86947 422	
63	.98362 62871 24534 51542 45970 460	
64	.98407 70339 02830 77450 43617 559	
965	.98452 73133 43792 56538 34997 516	(67)
66	.98497 71264 15493 34208 87601 688	
67	.98542 64740 83001 67359 77060 212	
68	.98587 53573 08393 66714 16166 267	
69	.98632 37770 50765 32737 15312 733	
970	.98677 17342 66244 85178 43618 117	(141)
71	.98721 92299 08004 86280 31389 065	
72	.98766 62649 26274 57690 26173 057	
73	.98811 28402 68351 91116 86494 609	
74	.98855 89568 78615 52767 69439 592	

N	logarithm	ref
975	.98900 46156 98536 81607 40552 717	(141)
76	.98944 98176 66691 81474 07040 927	
77	.98989 45637 18773 07091 48028 111	
78	.99033 88547 87601 44014 88582 339	
79	.99078 26918 03137 82547 37433 409	
980	.99122 60756 92494 85663 81714 119	(142)
81	.99166 90073 79948 50979 05691 141	
82	.99211 14877 86949 66796 74298 783	
83	.99255 35178 32135 62274 96349 247	
84	.99299 50984 31341 51744 56564 374	
985	.99343 62304 97611 73215 80054 230	(65)
86	.99387 69149 41211 21108 67555 520	
87	.99431 71526 69636 73242 14635 613	
88	.99475 69445 87628 12117 03164 231	
89	.99519 62915 97179 40527 28652 655	
990	.99563 51945 97549 91534 02557 778	(142)
91	.99607 36544 85275 32836 44343 788	
92	.99651 16721 54178 65573 53985 737	
93	.99694 92484 95381 17590 31685 106	
94	.99738 63843 97313 31201 87845 884	
995	.99782 30807 45725 45488 62828 897	(142)
96	.99825 93384 23698 73155 52660 447	
97	.99869 51583 11655 71988 13717 028	
98	.99913 05412 87371 10937 96439 308	
99	.99956 54882 25982 30869 35343 993	

N	logarithm	ref
1000	.00000 00000 00000 00000 00000 000	
01	.00043 40774 79318 64066 89213 878	
02	.00086 77215 31226 91249 28427 079	
03	.00130 09330 20418 11880 08262 789	
04	.00173 37128 09000 52976 80271 062	
1005	.00216 60617 56507 67623 04206 378	
06	.00259 79807 19908 59231 19629 850	
07	.00302 94705 53618 00716 93257 674	
08	.00346 05321 09506 48615 72276 440	
09	.00389 11662 36910 52171 52813 165	(143)
1010	.00432 13737 82642 57427 51881 782	
11	.00475 11555 91001 06348 50426 934	
12	.00518 05125 03780 31004 54548 729	
13	.00560 94453 60280 42845 01617 201	(143)
14	.00603 79549 97317 17092 17771 139	
1015	.00646 60422 49231 72283 13241 268	
16	.00689 37079 47900 44988 82041 060	
17	.00732 09529 22744 59738 52828 351	
18	.00774 77780 00739 94178 18156 063	
19	.00817 41840 06426 39490 49899 223	(64)
1020	.00860 01717 61917 56104 89366 923	
21	.00902 57420 86910 24724 81480 370	(132)
22	.00945 08957 98693 92700 03420 538	
23	.00987 56337 12160 15771 19319 746	
24	.01029 99566 39811 95213 73889 472	

(5)

N	logarithm	ref
1025	.01072 38653 91773 10408 19340 605	
26	.01114 73607 75797 46863 51560 802	
27	.01157 04435 97278 19720 13265 444	
28	.01199 31146 59256 92759 03732 554	
29	.01241 53747 62432 92943 16766 790	
1030	.01283 72247 05172 20517 10711 946	
31	.01325 86652 83516 54690 96644 090	(143)
32	.01367 96972 91192 54934 13327 407	
33	.01410 03215 19620 57904 40100 627	(78,101)
34	.01452 05387 57923 70037 81582 654	
1035	.01494 03497 92936 55824 40940 240	
36	.01535 97554 09214 21794 81447 376	
37	.01577 87563 89040 96242 59184 081	
38	.01619 73535 12439 04706 92970 567	
39	.01661 55475 57177 41240 21010 014	(144)
1040	.01703 33392 98780 35484 77218 421	
41	.01745 07295 10536 15583 03852 065	
42	.01786 77189 63505 66945 00800 813	
43	.01828 43084 26530 86896 95798 012	
44	.01870 04986 66243 35235 03803 589	
1045	.01911 62904 47072 80707 27945 523	
46	.01953 16845 31255 43447 38654 736	
47	.01994 66816 78842 33383 51998 804	
48	.02036 12826 47707 84645 12709 549	
49	.02077 54881 93557 85990 72007 639	(144)

N	logarithm	ref
1050	.02118 92990 69938 07279 35052 671	(144)
51	.02160 27160 28242 22008 37688 891	
52	.02201 57398 17720 25939 97113 733	
53	.02242 83711 85486 51838 66167 710	
54	.02284 06108 76527 80342 06128 892	
1055	.02325 24596 33711 46986 78192 352	(145)
56	.02366 39181 97793 45411 39223 481	
57	.02407 49873 07426 26758 12893 139	
58	.02448 56676 99166 95294 92931 192	
59	.02489 59601 07485 00279 20972 192	
1060	.02530 58652 64770 24084 67311 864	(145)
61	.02571 53839 01340 66612 28844 740	
62	.02612 45167 45450 26006 44510 858	(145)
63	.02653 32645 23296 75697 14741 946	
64	.02694 16279 59029 37788 97664 185	
1065	.02734 96077 74756 52817 41184 436	(66,101)
66	.02775 72046 90553 45892 96559 026	
67	.02816 44194 24469 89253 45617 829	
68	.02857 12526 92537 61244 60490 624	
69	.02897 77052 08778 01749 01456 799	
1070	.02938 37776 85209 64083 45412 395	(66,101)
71	.02978 94708 31855 63384 24419 594	
72	.03019 47853 56751 21500 40872 081	
73	.03059 97219 65951 08414 12974 525	
74	.03100 42813 63536 80207 91494 898	

N	logarithm	ref
1075	.03140 84642 51624 13597 76103 638	
76	.03181 22713 30370 37051 47063 053	
77	.03221 57032 97981 58511 15572 977	
78	.03261 87608 50719 89738 83713 832	
79	.03302 14446 82910 67303 92655 100	
1080	.03342 37554 86949 70231 25614 992	
81	.03382 56939 53310 34328 19965 117	
82	.03422 72607 70550 63209 30871 386	
83	.03462 84566 25320 36036 76948 548	
84	.03502 92822 02368 11994 86579 843	
1085	.03542 97381 84548 31516 51814 640	
86	.03582 98252 52828 14279 85104 744	
87	.03622 95440 86294 53992 62573 763	(37)
88	.03662 88953 62161 09982 26032 627	
89	.03702 78797 55774 95609 04557 490	
1090	.03742 64979 40623 63520 05133 076	
91	.03782 47505 88341 87761 10634 293	(145)
92	.03822 26383 68718 42764 12271 092	
93	.03862 01619 49702 79226 92555 276	(146)
94	.03901 73219 97411 96902 63862 673	
1095	.03941 41191 76137 14315 56759 090	
96	.03981 05541 48350 35420 41433 113	
97	.04020 66275 74711 13221 54832 406	(146)
98	.04060 23401 14073 10368 95432 150	
99	.04099 76924 23490 56747 36973 885	

N	logarithm	ref
1100	.04139 26851 58225 04075 01999 712	(147)
01	.04178 73189 71751 77528 25569 963	
02	.04218 15945 15766 24408 29191 335	
03	.04257 55124 40190 59866 14696 639	
04	.04296 90733 93180 09701 77605 944	
1105	.04336 22780 21129 50253 29361 575	(148)
06	.04375 51269 68679 45392 07765 398	
07	.04414 76208 78722 80639 44955 597	
08	.04453 97603 92410 94420 52341 090	
09	.04493 15461 49160 06470 72064 222	
1110	.04532 29787 86657 43410 34785 928	
11	.04571 40589 40867 61502 53881 495	
12	.04610 47872 46038 66609 76498 865	
13	.04649 51643 34708 31364 02364 535	
14	.04688 51908 37710 09565 71723 936	
1115	.04727 48673 84179 47826 14373 215	(148,9)
16	.04766 41946 01559 94468 42376 961	
17	.04805 31731 15609 05701 59771 177	
18	.04844 18035 50404 49082 53322 059	
19	.04883 00865 28350 04280 19248 420	
1120	.04921 80226 70181 61156 71718 375	(118,149)
21	.04960 56125 94973 15179 69898 603	
22	.04999 28569 20142 60179 91366 636	
23	.05037 97562 61457 78468 70792 697	
24	.05076 63112 33042 28329 13957 057	

N	logarithm	ref
1125	.05115 25224 47381 28894 88391 223	(90,150)
26	.05153 83905 15327 42430 83216 025	
27	.05192 39160 46106 54029 22096 294	
28	.05230 90996 47323 48735 04639 869	
29	.05269 39419 24967 86114 43037 582	
1130	.05307 84434 83419 72279 52270 286	
31	.05346 26049 25455 29383 43798 242	
32	.05384 64268 52252 62598 64297 000	
33	.05422 99098 63397 24592 12711 658	
34	.05461 30545 56887 77510 60667 663	
1135	.05499 58615 29141 52488 93100 700	
36	.05537 83313 75000 06694 77850 139	
37	.05576 04646 87734 77922 64899 627	
38	.05614 22620 59052 36750 07944 188	
39	.05652 37240 79100 36268 93015 236	
1140	.05690 48513 36472 59404 51002 737	
41	.05728 56444 18214 63835 23076 945	
42	.05766 61039 09829 24525 40230 248	
43	.05804 62303 95281 73883 70432 283	
44	.05842 60244 57005 39559 79218 134	
1145	.05880 54866 75906 79891 41909 708	
46	.05918 46176 31371 17014 38103 963	
47	.05956 34179 01267 67647 51547 897	
48	.05994 18880 61954 71564 91058 980	
49	.06032 00286 88285 17767 40740 328	

N	logarithm	ref
1150	.06069 78403 53611 68365 40382 175	(150)
51	.06107 53236 29791 80184 89634 615	
52	.06145 24790 87193 24108 62280 696	
53	.06182 93072 94699 02164 09733 543	
54	.06220 58088 19712 62370 25725 623	
1155	.06258 19842 28163 11354 37052 384	(151)
56	.06295 78340 84510 24750 78175 781	
57	.06333 33589 51749 55393 00485 276	
58	.06370 85593 91417 39310 60054 443	
59	.06408 34359 63595 99542 20819 895	
1160	.06445 79892 26918 47776 03245 524	(151,2)
61	.06483 22197 38573 83829 01718 630	
62	.06520 61280 54311 92975 87155 053	
63	.06557 97147 28448 41139 04567 558	
64	.06595 29803 13869 67950 68675 044	
1165	.06632 59253 62037 77697 53999 408	(152)
66	.06669 85504 22995 28159 69311 576	
67	.06707 08560 45370 17353 99748 150	
68	.06744 28427 76380 68192 93424 794	
69	.06781 45111 61840 11069 62921 685	
1170	.06818 58617 46161 64379 65609 645	(152)
71	.06855 68950 72363 12990 20422 654	
72	.06892 76116 82071 84667 12363 021	
73	.06929 80121 15529 24470 29749 098	
74	.06966 80969 11595 67127 72981 933	

N	logarithm	ref
1175	.07003 78666 07755 07398 67416 100	
76	.07040 73217 40119 68436 06771 046	
77	.07077 64628 43434 68158 47412 107	
78	.07114 52904 51082 83641 67764 706	
79	.07151 38050 95089 13540 01100 772	
1180	.07188 20073 06125 38547 43952 793	
81	.07224 98976 13514 79908 36467 849	(82,153)
82	.07261 74765 45236 55988 05111 157	
83	.07298 47446 27930 36912 52265 745	
84	.07335 17023 86900 97287 71451 632	
1185	.07371 83503 46122 67007 61103 950	
86	.07408 46890 28243 80161 04104 545	
87	.07445 07189 54591 22046 74555 425	(135,153)
88	.07481 64406 45174 74306 27614 705	
89	.07518 18546 18691 58184 22586 129	
1190	.07554 69613 92530 75925 23861 529	
91	.07591 17614 82777 50317 18761 439	
92	.07627 62554 04217 62389 85802 268	
93	.07664 04436 70341 87278 41438 563	(115,153)
94	.07700 43267 93350 28260 87885 824	
1195	.07736 79052 84156 48978 79222 654	
96	.07773 11796 52392 03850 17600 596	
97	.07809 41504 06410 66683 86055 409	
98	.07845 68180 53292 57504 19114 638	
99	.07881 91830 98848 67595 07132 789	

N	logarithm	ref
1200	.07918 12460 47624 82772 25056 927	(154)
01	.07954 30074 02906 04892 71131 982	
02	.07990 44676 66720 71609 95895 947	
03	.08026 56273 39844 74383 96690 514	
04	.08062 64869 21805 74754 47822 013	
1205	.08098 70469 10887 18886 31450 717	
06	.08134 73078 04132 50395 29263 305	
07	.08170 72700 97349 21463 29993 294	
08	.08206 69342 85113 02251 02897 395	
09	.08242 63008 60771 88616 82371 613	
1210	.08278 53703 16450 08150 03999 425	(155)
11	.08314 41431 43052 24527 27465 174	
12	.08350 26198 30267 40199 76938 709	
13	.08386 08008 66572 97420 24742 057	
14	.08421 86867 39238 77617 39345 252	
1215	.08457 62779 34330 99126 14006 216	(155,6)
16	.08493 35749 36716 13281 87668 441	
17	.08529 05782 30064 98886 65060 039	
18	.08564 72882 96856 55055 38298 195	
19	.08600 37056 18381 92450 07694 039	
1220	.08635 98306 74748 22909 94874 085	(157)
21	.08671 56639 44882 47485 36785 640	
22	.08707 12059 06535 42883 44634 521	
23	.08742 64570 36285 46333 07314 004	
24	.08778 14178 09542 38877 14423 850	

(6)

N	logarithm	ref
1225	.08813 60887 00551 27099 69547 277	(157,8)
26	.08849 04701 82396 23295 60051 762	
27	.08884 45627 27004 24090 45306 210	
28	.08919 83668 05148 87518 20862 260	
29	.08955 18828 86454 08564 11830 946	
1230	.08990 51114 39397 93180 44397 532	(158)
31	.09025 80529 31316 30782 40156 789	
32	.09061 07078 28406 65231 73718 087	
33	.09096 30765 95731 64315 29824 336	
34	.09131 51596 97222 87725 92050 620	
1235	.09166 69575 95684 53552 90997 390	(159)
36	.09201 84707 52797 03289 35768 873	
37	.09236 96996 29120 65363 48429 892	
38	.09272 06446 84099 17201 17063 291	
39	.09307 13063 76063 45826 79005 464	
1240	.09342 16851 62235 07009 41818 896	
41	.09377 17814 98729 82961 45567 948	
42	.09412 15958 40561 38596 65997 167	
43	.09447 11286 41644 76354 54269 999	
44	.09482 03803 54799 89598 05009 727	
1245	.09516 93514 31755 14591 40493 606	(128,159)
46	.09551 80423 23150 81064 94985 230	
47	.09586 64534 78542 61373 79349 162	
48	.09621 45853 46405 18257 02275 348	
49	.09656 24383 74135 51204 20648 910	

N	logarithm	ref
1250	.09691 00130 08056 41435 87833 158	(160)
51	.09725 73096 93419 95504 64890 088	
52	.09760 43288 74410 87523 56042 943	
53	.09795 10709 94150 00028 25989 504	
54	.09829 75364 94697 63479 53002 450	
1255	.09864 37258 17056 94412 68104 220	
56	.09898 96394 01177 32240 26978 141	
57	.09933 52776 85957 74714 57675 026	
58	.09968 06411 09250 12056 23594 786	
59	.10002 57301 07862 59755 37665 686	
1260	.10037 05451 17562 90051 60109 598	
61	.10071 50865 73081 62099 08669 696	
62	.10105 93549 08115 50823 06687 447	
63	.10140 33505 55330 74473 90948 267	
64	.10174 70739 46366 20884 97769 654	
1265	.10209 05255 11836 72440 42381 888	
66	.10243 37056 81336 29759 03249 279	
67	.10277 66148 83441 34100 19599 350	
68	.10311 92535 45713 88498 07068 058	
69	.10346 16220 94704 77629 93031 092	
1270	.10380 37209 55956 86424 69874 218	
71	.10414 55505 54008 17417 61159 501	
72	.10448 71113 12395 06856 92368 791	
73	.10482 84036 53655 39568 54651 050	
74	.10516 94279 99331 62584 46765 699	

N	logarithm	ref
1275	.10551 01847 69973 97540 77200 081	
76	.10585 06743 85143 51851 05245 237	
77	.10619 08972 63415 28660 96640 239	(161)
78	.10653 08538 22381 35589 66241 363	
79	.10687 05444 78653 92263 77038 004	(161)
1280	.10720 99696 47868 36649 61722 631	
81	.10754 91297 44686 30189 29926 756	
82	.10788 80251 82798 61746 21159 044	
83	.10822 66563 74928 50365 60424 911	(115,162)
84	.10856 50237 32834 46855 70469 322	
1285	.10890 31276 67313 34194 91565 712	
86	.10924 09685 88203 26770 56774 002	
87	.10957 85469 04386 68454 67609 357	
88	.10991 58630 23793 29522 12100 550	
89	.11025 29173 53403 02416 64272 392	(162)
1290	.11058 97102 99248 96370 01160 565	
91	.11092 62422 66420 30879 70559 202	(106,163)
92	.11126 25136 59065 28050 39811 595	
93	.11159 85248 80394 03804 53082 294	
94	.11193 42763 32681 57967 21694 575	
1295	.11226 97684 17270 63230 69280 534	
96	.11260 50015 34574 53003 50671 919	
97	.11293 99760 84080 08149 60658 028	(163)
98	.11327 46924 64350 42622 45952 505	
99	.11360 91510 73027 87999 30943 529	

N	logarithm	ref
1300	.11394 33523 06836 76920 65051 579	(97,164)
01	.11427 72965 61586 25439 96785 569	
02	.11461 09842 32173 14288 76871 567	
03	.11494 44157 12584 69061 90128 413	
04	.11527 75913 95901 39328 13081 201	
1305	.11561 05116 74299 76670 91636 748	(96,165)
06	.11594 31769 39055 11664 30494 602	
07	.11627 55875 80544 29788 83332 880	
08	.11660 77439 88248 46292 30190 003	
09	.11693 96465 50755 80000 25861 242	
1310	.11727 12956 55764 26081 00542 707	
11	.11760 26916 90084 27769 91384 913	
12	.11793 38350 39641 47057 81063 236	
13	.11826 47260 89479 34348 16933 362	
14	.11859 53652 23761 97087 81816 017	
1315	.11892 57528 25776 67375 84946 891	(165)
16	.11925 58892 77936 68555 39134 475	
17	.11958 57749 61783 80792 87690 539	
18	.11991 54102 57991 05649 42235 018	
19	.12024 47955 46365 29648 90029 037	
1320	.12057 39312 05849 86847 27056 639	(166)
21	.12090 28176 14527 20407 70657 355	
22	.12123 14551 49621 43186 03107 924	
23	.12155 98441 87500 97330 95162 270	
24	.12188 79851 03681 12903 56183 968	

N	logarithm	ref
1325	.12221 58782 72826 65520 55145 022	(166,7)
26	.12254 35240 68754 33025 54418 503	
27	.12287 09228 64435 51192 95960 564	
28	.12319 80750 31998 68468 77159 309	
29	.12352 49809 42731 99752 51323 929	
1330	.12385 16409 67085 79224 85497 343	
31	.12417 80554 74675 12225 05999 137	
32	.12450 42248 34282 26182 59842 855	
33	.12483 01494 13859 20607 17922 533	
34	.12515 58295 80530 16141 43627 699	
1335	.12548 12657 00594 02680 48323 782	
36	.12580 64581 39526 86562 52925 941	
37	.12613 14072 61984 36834 72598 569	
38	.12645 61134 31804 30598 39430 142	
39	.12678 05770 12008 97437 75763 525	
1340	.12710 47983 64807 62936 28705 240	
41	.12742 87778 51598 91284 74193 491	
42	.12775 25158 32973 26984 96873 797	
43	.12807 60126 68715 35653 49912 808	
44	.12839 92687 17806 43928 96775 302	
1345	.12872 22843 38426 78487 34896 211	
46	.12904 50598 87958 04168 99098 895	
47	.12936 75957 22985 61221 40542 570	
48	.12968 98921 99301 01661 74925 796	
49	.13001 19496 71904 24762 91629 108	

N	logarithm	ref
1350	.13033 37684 95006 11667 13448 150	
51	.13065 53490 22030 59130 94549 049	
52	.13097 66916 05617 12405 42270 001	
53	.13129 77965 97622 97255 46397 245	
54	.13161 86643 49125 51121 97559 550	
1355	.13193 92952 10424 53430 74413 002	
56	.13225 96895 31044 55051 77327 213	
57	.13257 98476 59737 06912 84334 968	
58	.13289 97699 44482 87771 03169 650	
59	.13321 94567 32494 31145 91288 618	
1360	.13353 89083 70217 51418 13865 785	
61	.13385 81252 03334 69097 07833 026	(167,9)
62	.13417 71075 76766 35261 18157 627	
63	.13449 58558 34673 55174 70661 624	
64	.13481 43703 20460 11084 43818 608	
1365	.13513 26513 76774 84200 00104 251	
66	.13545 06993 45513 75861 35628 357	
67	.13576 85145 67822 27897 04938 656	(168)
68	.13608 60973 84097 42176 76059 664	
69	.13640 34481 33989 99361 69013 791	
1370	.13672 05671 56406 76856 29266 271	
71	.13703 74547 89512 65964 85740 485	
72	.13735 41113 70732 88256 41265 652	
73	.13767 05372 36755 11141 41544 748	(87,169)
74	.13798 67327 23531 62663 66966 635	

N	logarithm	ref
1375	.13830 26981 66281 45510 89832 871	(67,169)
76	.13861 84338 99492 50247 37826 269	
77	.13893 39402 56923 67772 02815 073	
78	.13924 92175 71607 01005 32363 443	
79	.13956 42661 75849 75808 39605 763	
1380	.13987 90864 01236 51137 65439 102	
81	.14019 36785 78631 28438 25294 744	
82	.14050 80430 38179 60279 71066 191	
83	.14082 21801 09310 58236 97097 217	
84	.14113 60901 20739 00020 17469 429	
1385	.14144 97734 00467 35856 40174 249	
86	.14176 32302 75787 94126 62109 311	
87	.14207 64610 73284 86261 07203 762	
88	.14238 94661 18836 10896 28350 927	
89	.14270 22457 37615 57296 92210 117	
1390	.14301 48002 54095 08045 64332 023	
91	.14332 71299 92046 41004 10463 974	
92	.14363 92352 74543 30548 28302 451	
93	.14395 11164 23963 48081 22380 430	
94	.14426 27737 61990 61826 33206 390	
1395	.14457 42076 09616 35904 30210 119	(170)
96	.14488 54182 87142 28696 76497 666	
97	.14519 64061 14181 90499 71873 931	
98	.14550 71714 09662 60469 79056 335	
99	.14581 77144 91827 62866 36476 776	

N	logarithm	ref	
1400	.14612 80356 78238 02592 59551 533	(78,170)	
01	.14643 81352 85774 60038 30789 930		
02	.14674 80136 30639 85227 77612 320		
03	.14705 76710 28359 91275 35256 260		
04	.14736 71077 93786 47151 90666 572		
1405	.14767 63242 41098 69765 01790 216		
06	.14798 53206 83805 15355 85230 600		
07	.14829 40974 34745 70215 63757 911		
08	.14860 26548 06093 40724 63722 343		
09	.14891 09931 09356 42716 50975 641		
1410	.14921 91126 55379 90170 92473 027		
11	.14952 70137 54347 83237 29302 464		
12	.14983 46967 15784 95592 45471 054		
13	.15014 21618 48558 61135 15369 364		
14	.15044 94094 60880 60020 11433 315		
1415	.15075 64398 60309 04034 52130 158		
16	.15106 32533 53750 21319 69009 720		
17	.15136 98502 47460 40440 70184 656		
18	.15167 62308 47047 73806 76233 745		
19	.15198 23954 57474 00445 03160 277		
1420	.15228 83443 83056 48130 65683 298		(52,171)
21	.15259 40779 27469 74875 72792 802		
22	.15289 95963 93747 49779 86160 877		
23	.15320 49000 84284 33245 10669 235		
24	.15350 99893 00837 56557 84989 486		

(7)

N	logarithm	ref
1425	.15381 48643 44529 00840 38835 896	
26	.15411 95255 15846 75374 82201 071	
27	.15442 39731 14646 95301 90583 153	(171)
28	.15472 82074 40155 58697 48918 456	
29	.15503 22287 90970 23029 15646 131	(172)
1430	.15533 60374 65061 80995 67051 292	
31	.15563 96337 59776 35751 80760 014	
32	.15594 30179 71836 75521 15993 759	
33	.15624 61903 97344 47599 46931 944	(172,3)
34	.15654 91513 31781 31751 04279 581	
1435	.15685 19010 70011 13000 78892 138	
36	.15715 44399 06281 53824 40071 839	
37	.15745 67681 34225 65739 19918 702	
38	.15775 88860 46863 80298 13895 461	
39	.15806 07939 36605 19489 46548 181	(22,173)
1440	.15836 24920 95249 65544 50113 854	
41	.15866 39808 13989 30156 02542 419	
42	.15896 52603 83410 23109 70263 479	
43	.15926 63310 93494 20330 99837 507	
44	.15956 71932 33620 31350 01447 410	
1445	.15986 78470 92566 66186 66008 939	
46	.16016 82929 58512 01658 56507 644	
47	.16046 85311 19037 47114 13005 643	(173)
48	.16076 85618 61128 09593 09603 606	
49	.16106 83854 71174 58417 00491 774	

N	logarithm	ref
1450	.16136 80022 34974 89211 91078 682	
51	.16166 74124 37735 87365 69047 381	(174)
52	.16196 66163 64074 90922 29056 352	
53	.16226 56142 98021 52915 23676 003	(63,174)
54	.16256 44065 23019 03142 72031 434	
1455	.16286 29933 21926 09386 56508 202	
56	.16316 13749 77018 38077 36769 954	
57	.16345 95517 69990 14408 09234 996	
58	.16375 75239 81955 81898 39063 143	
59	.16405 52918 93451 61411 90614 488	(175)
1460	.16435 28557 84437 09628 81257 952	
61	.16465 02159 34296 76975 82329 677	
62	.16494 73726 21841 65015 89969 423	
63	.16524 43261 25310 83299 87497 056	
64	.16554 10767 22373 05682 19931 012	
1465	.16583 76246 90128 26103 00196 179	
66	.16613 39703 05109 13838 65519 973	
67	.16643 01138 43282 68223 01472 424	
68	.16672 60555 80051 72841 50068 825	
69	.16702 17957 90256 49200 17321 866	
1470	.16731 73347 48176 09871 94604 204	
71	.16761 26727 27530 11122 07161 964	(175,6)
72	.16790 78100 01480 05015 02104 806	
73	.16820 27468 42630 91004 87188 868	
74	.16849 74835 23032 67011 30704 952	

N	logarithm	ref
1475	.16879 20203 14181 79983 31785 951	
76	.16908 63574 87022 75952 69454 459	
77	.16938 04953 11949 49579 37743 885	
78	.16967 44340 58806 93190 73244 090	
79	.16996 81739 96892 45316 80445 606	
1480	.17026 17153 94957 38723 59284 790	
81	.17055 50585 21208 47946 38325 834	(176)
82	.17084 82036 43309 36325 16054 317	
83	.17114 11510 28382 02544 11800 965	(177)
84	.17143 39009 43008 26677 26863 397	
1485	.17172 64536 53231 15742 15447 863	
86	.17201 88094 24556 48763 64112 359	
87	.17231 09685 21954 21349 77456 854	(177,8)
88	.17260 29312 09859 89781 66875 823	
89	.17289 46977 52176 14619 38262 724	(178,9)
1490	.17318 62684 12274 03825 73635 426	
91	.17347 76434 52994 55410 00735 969	
92	.17376 88231 36649 99593 43747 282	
93	.17405 98077 25025 40498 47363 628	(94,178)
94	.17435 05974 79379 97363 65550 533	
1495	.17464 11926 60448 45286 05433 755	
96	.17493 15935 28442 55493 15865 497	
97	.17522 18003 43052 35146 09329 393	
98	.17551 18133 63447 66676 04963 928	
99	.17580 16328 48279 46655 79606 786	(180)

N	logarithm	ref
1500	.17609 12590 55681 24208 12890 085	
01	.17638 06922 43270 38953 11548 622	
02	.17666 99326 68149 58495 97240 040	
03	.17695 89805 86908 15457 41317 164	
04	.17724 78362 55623 44048 29138 731	
1505	.17753 64999 29862 16190 35655 171	
06	.17782 49718 64681 77184 93161 147	
07	.17811 32523 14631 80931 31265 984	
08	.17840 13415 33755 24696 68297 104	
09	.17868 92397 75589 83439 32519 935	
1510	.17897 69472 93169 43686 90730 553	
11	.17926 44643 39025 36971 60954 471	(180,1)
12	.17955 17911 65187 72823 85166 525	
13	.17983 89280 23186 71326 37132 640	
14	.18012 58751 64053 95230 39664 410	
1515	.18041 26328 38323 81635 64771 868	
16	.18069 92012 96034 73235 89398 489	
17	.18098 55807 86730 49131 78625 395	
18	.18127 17715 59461 55212 67438 815	
19	.18155 77738 62786 34109 11366 173	
1520	.18184 35879 44772 54717 75501 599	
21	.18212 92140 52998 41300 30661 224	
22	.18241 46524 34554 02158 24632 303	
23	.18269 99033 36042 57884 95707 960	(112,181)
24	.18298 49670 03581 69196 94931 145	

N	logarithm	ref
1525	.18326 98436 82804 64345 82707 243	
26	.18355 45336 18861 66112 64684 609	
27	.18383 90370 56421 18386 31046 148	
28	.18412 33542 39671 12327 62602 824	
29	.18440 74854 12320 12120 66331 736	
1530	.18469 14308 17598 80313 02257 008	
31	.18497 51906 98261 02746 62831 313	(181,2)
32	.18525 87652 96585 13080 65239 190	
33	.18554 21548 54375 16908 16310 623	
34	.18582 53596 12962 15468 09004 372	
1535	.18610 83798 13205 28954 08695 418	
36	.18639 12156 95493 19421 86779 558	
37	.18667 38674 99745 13296 58390 546	
38	.18695 63354 65412 23481 80311 347	
39	.18723 86198 31478 71071 64450 888	
1540	.18752 07208 36463 06667 61551 246	
41	.18780 26387 18419 31301 69087 415	
42	.18808 43737 14938 16967 16622 639	
43	.18836 59260 63148 26758 81186 784	(182,3)
44	.18864 72959 99717 34623 84553 305	
1545	.18892 84837 60853 44725 23602 031	
46	.18920 94895 82306 10418 84270 219	
47	.18949 03136 99367 52845 88913 109	
48	.18977 09563 46873 79142 26217 492	
49	.19005 14177 59206 00266 12137 623	(29,183)

N	logarithm	ref
1550	.19033 16981 70291 48445 29652 054	(184)
51	.19061 17978 13604 94245 94472 739	
52	.19089 17169 22169 63263 93173 906	
53	.19117 14557 28558 52440 39547 805	
54	.19145 10144 64895 46002 94337 461	
1555	.19173 03933 62856 31033 92842 885	(187)
56	.19200 95926 53670 12667 24247 012	
57	.19228 86125 68120 28915 05860 653	
58	.19256 74533 36545 65125 94842 204	
59	.19284 61151 88841 68075 79307 539	
1560	.19312 45983 54461 59692 90108 506	
61	.19340 29030 62417 50418 73924 748	
62	.19368 10295 41281 52205 67683 010	
63	.19395 89780 19186 91153 13690 898	
64	.19423 67487 23829 19783 54247 960	
1565	.19451 43418 82467 28959 43876 101	(188)
66	.19479 17577 21924 59443 16693 675	
67	.19506 89964 68590 13100 45843 028	
68	.19534 60583 48419 63749 31269 908	
69	.19562 29435 86936 67655 51544 821	
1570	.19589 96524 09233 73676 14811 299	(188,9)
71	.19617 61850 39973 33052 43343 881	
72	.19645 25417 03389 08853 25599 634	
73	.19672 87226 23286 85070 69051 004	
74	.19700 47280 23045 75368 86494 878	

N	logarithm	ref
1575	.19728 05581 25619 31487 47942 757	(39,189)
76	.19755 62131 53536 51301 29610 019	
77	.19783 16933 28902 86536 90938 278	
78	.19810 69988 73401 50148 10003 818	
79	.19838 21300 08294 23351 07087 056	
1580	.19865 70869 54422 62320 85602 812	(189,90)
81	.19893 18699 32209 04550 19018 977	
82	.19920 64791 61657 74872 11821 819	
83	.19948 09148 62355 91147 62019 722	
84	.19975 51772 53474 69619 52113 567	
1585	.20002 92665 53770 29933 94901 217	
86	.20030 31829 81584 99830 59925 664	
87	.20057 69267 54848 19503 05821 278	
88	.20085 04980 91077 45630 43260 301	
89	.20112 38972 07379 55081 52652 233	
1590	.20139 71243 20451 48292 80201 949	
91	.20167 01796 46581 52321 35388 428	
92	.20194 30634 01650 23574 12384 686	
93	.20221 57758 01131 50214 57400 943	
94	.20248 83170 60093 54248 03397 219	
1595	.20276 06873 93199 93286 93078 395	(191)
96	.20303 28870 14710 61997 10554 271	
97	.20330 49161 38482 93226 41519 352	
98	.20357 67749 77972 58816 81281 885	
99	.20384 84637 46234 70101 09449 112	

N	logarithm	ref
1600	.20411 99826 55924 78085 49555 789	(191)
01	.20439 13319 19299 73319 31405 646	
02	.20466 25117 48218 85452 73380 709	
03	.20493 35223 54144 82484 01461 241	
04	.20520 43639 48144 69697 21189 376	
1605	.20547 50367 40890 88291 58302 480	(192)
06	.20574 55409 42662 13703 83257 664	
07	.20601 58767 63344 53624 34366 844	
08	.20628 60444 12432 45708 53762 167	
09	.20655 60440 99029 54984 49914 584	
1610	.20682 58760 31849 70957 99933 708	(193)
11	.20709 55404 19218 04416 04384 983	
12	.20736 50374 69071 83930 06870 475	
13	.20763 43673 88961 52059 90132 340	
14	.20790 35303 86051 61259 59953 139	
1615	.20817 25266 67121 69486 27644 754	(179)
16	.20844 13564 38567 35513 01437 571	
17	.20871 00199 06401 13946 96603 917	
18	.20897 85172 76253 49953 73674 406	
19	.20924 68487 53373 73689 13632 895	
1620	.20951 50145 42630 94439 38505 077	(193,4)
21	.20978 30148 48514 94470 85287 458	
22	.21005 08498 75137 22590 40697 430	
23	.21031 85198 26231 87417 43761 472	
24	.21058 60249 05156 50368 62797 057	

(8)

N	logarithm	ref
1625	.21085 33653 14893 18356 52884 738	(194)
26	.21112 05412 58049 36202 99469 929	
27	.21138 75529 36858 78768 53279 334	
28	.21165 44005 53182 42798 61284 502	
29	.21192 10843 08509 38487 97994 829	
1630	.21218 76044 03957 80764 00914 359	(195)
31	.21245 39610 40275 80290 13550 941	
32	.21272 01544 17842 34190 38922 712	
33	.21298 61847 36668 16496 06065 473	
34	.21325 20521 96396 68315 51605 237	
1635	.21351 77569 96304 87728 18023 161	(195)
36	.21378 32993 35304 19403 69805 072	
37	.21404 86794 11941 43947 28234 971	
38	.21431 38974 24399 66972 25161 178	
39	.21457 89535 70499 07900 75635 139	
1640	.21484 38480 47697 88493 68896 394	(195)
41	.21510 85810 53093 21110 76752 758	
42	.21537 31527 83421 96701 77982 364	
43	.21563 75634 35061 72529 96963 917	
44	.21590 18132 04031 59628 54323 198	
1645	.21616 59022 85993 09991 26967 633	(195)
46	.21642 98308 76251 03498 14466 513	
47	.21669 35991 69754 34577 08322 235	
48	.21695 72073 61096 98602 60267 735	
49	.21722 06556 44518 78032 45317 060	

N	logarithm	ref
1650	.21748 39442 13906 28283 14889 798	
51	.21774 70732 62793 63345 34925 798	
52	.21801 00429 84363 41140 03504 326	
53	.21827 28535 71447 48616 42081 420	
54	.21853 55052 16527 86592 54060 792	
1655	.21879 79981 11737 54339 44017 126	
56	.21906 03324 48861 33909 90496 029	
57	.21932 25084 19336 74212 64922 231	(195,6)
58	.21958 45262 14254 74832 88756 828	
59	.21984 63860 24360 69600 20655 483	
1660	.22010 80880 40055 09904 64992 468	
61	.22036 96324 51394 47761 92730 266	
62	.22063 10194 48092 18628 65231 176	
63	.22089 22492 19519 23968 51225 862	(196)
64	.22115 33219 54705 13570 26774 210	
1665	.22141 42378 42338 67618 47676 013	
66	.22167 49970 70768 78517 83413 062	
67	.22193 55998 28005 32472 01330 002	(196)
68	.22219 60463 01719 90817 89388 950	
69	.22245 63366 79246 71116 05462 276	(56,197)
1670	.22271 64711 47583 27998 40759 099	
71	.22297 64498 93391 33773 84614 022	
72	.22323 62731 02997 58792 77501 312	
73	.22349 59409 62394 51571 38774 187	
74	.22375 54536 57241 18676 55267 046	

N	logarithm	ref
1675	.22401 48113 72864 04372 16538 398	
76	.22427 40142 94257 70027 82173 888	
77	.22453 30626 06085 73290 66212 144	
78	.22479 19564 92681 47021 23401 216	
79	.22505 06961 38048 77994 21640 127	
1680	.22530 92817 25862 85364 84608 460	
81	.22556 77134 39470 98901 88236 999	
82	.22582 59914 61893 36987 94324 207	
83	.22608 41159 75823 84388 04256 721	
84	.22634 20871 63630 69787 15447 129	
1685	.22659 99052 07357 43097 62758 955	
86	.22685 75702 88723 52537 26847 143	
87	.22711 50825 89125 21478 91002 250	
88	.22737 24422 89636 25072 27748 141	
89	.22762 96495 71008 66638 96106 110	
1690	.22788 67046 13673 53841 30103 159	
91	.22814 36075 97741 74625 98768 455	
92	.22840 03587 03004 72943 17529 954	
93	.22865 69581 08935 24241 90592 650	(198,9)
94	.22891 34059 94688 10742 63550 958	
1695	.22916 97025 39100 96487 65160 371	
96	.22942 58479 20695 02170 16867 652	
97	.22968 18423 17675 79742 88374 531	(100,199)
98	.22993 76859 07933 86806 77187 085	
99	.23019 33788 69045 60780 89781 726	(199,0)

N	logarithm	ref
1700	.23044 89213 78273 92854 01698 943	
01	.23070 43136 12569 01718 73557 749	
02	.23095 95557 48569 07088 99666 965	
03	.23121 46479 62601 03001 65594 286	
04	.23146 95904 30681 30902 90740 225	
1705	.23172 43833 28516 52520 31651 766	
06	.23197 90268 31504 22521 21499 710	
07	.23223 35211 14733 60958 20834 273	
08	.23248 78663 52986 25502 54425 618	
09	.23274 20627 20736 83466 08689 457	(200)
1710	.23299 61103 92153 83612 63892 823	
11	.23325 00095 41100 27759 35031 475	
12	.23350 37603 41134 42168 94968 184	
13	.23375 73629 65510 48733 53120 333	
14	.23401 08175 87179 35950 62685 895	
1715	.23426 41243 78789 29692 29098 811	
16	.23451 72835 12686 63767 92108 219	
17	.23477 02951 60916 50281 53580 726	
18	.23502 31594 95223 49784 22831 070	
19	.23527 58766 87052 41222 50994 048	
1720	.23552 84469 07548 91683 25659 427	
21	.23578 08703 27560 25935 96701 821	(202)
22	.23603 31471 17635 95773 03949 065	
23	.23628 52774 48028 49148 77045 541	(202,3)
24	.23653 72614 88693 99117 77581 156	

N	logarithm	ref
1725	.23678 90994 09292 92573 53272 261	
26	.23704 07913 79190 78787 73697 645	
27	.23729 23375 67458 77751 16811 011	
28	.23754 37381 42874 48316 75170 781	
29	.23779 49932 73922 56145 50548 923	
1730	.23804 61031 28795 41456 05302 588	
31	.23829 70678 75393 86578 38615 708	
32	.23854 78876 81327 83312 55442 391	
33	.23879 85627 13917 00092 95709 855	(203)
34	.23904 90931 40191 48958 91065 866	
1735	.23929 94791 26892 52332 16184 085	
36	.23954 97208 40473 09602 01370 429	
37	.23979 98184 47098 63518 72944 529	
38	.24004 97721 12647 66395 87602 524	
39	.24029 95820 02712 46122 26700 890	
1740	.24054 92482 82599 71984 16135 609	
41	.24079 87711 17331 20298 37226 909	(204)
42	.24104 81506 71644 39856 93756 819	
43	.24129 73871 09993 17184 00045 139	
44	.24154 64805 96548 41605 54688 865	
1745	.24179 54312 95198 70132 64330 824	
46	.24204 42393 69550 92158 81565 129	
47	.24229 29049 82930 93972 20830 131	(207)
48	.24254 14282 98384 23083 15883 775	
49	.24278 98094 78676 52367 82201 661	

N	logarithm	ref
1750	.24303 80486 86294 44028 47384 691	(60,209)
51	.24328 61460 83446 13371 12410 889	
52	.24353 41018 32061 92401 06314 879	
53	.24378 19160 93794 93236 96628 516	
54	.24402 95890 30021 71344 17667 328	
1755	.24427 71208 01842 88587 78499 730	(209)
56	.24452 45115 70083 76106 12189 401	
57	.24477 17614 95294 97005 27655 753	
58	.24501 88707 37753 08875 25253 106	
59	.24526 58394 57461 26128 36925 939	
1760	.24551 26678 14149 82160 51555 501	
61	.24575 93559 67276 91335 85872 019	
62	.24600 59040 76029 10795 61066 842	
63	.24625 23122 99322 02091 45000 032	
64	.24649 85807 95800 92644 19661 131	
1765	.24674 47097 23841 37028 33304 212	
66	.24699 06992 41549 78082 96442 681	
67	.24723 65495 06764 07849 80654 791	
68	.24748 22606 77054 28338 78917 364	
69	.24772 78329 09723 12121 85952 767	
1770	.24797 32663 61806 62755 56842 878	
71	.24821 85611 90074 75033 01933 421	
72	.24846 37175 51031 95065 75822 791	
73	.24870 87356 00917 80196 18001 242	
74	.24895 36154 95707 58741 02479 096	

N	logarithm	ref
1775	.24919 83573 91112 89566 53516 456	(210,1)
76	.24944 29614 42582 21495 84341 717	
77	.24968 74278 05301 52549 15522 035	
78	.24993 17566 34194 89017 29425 751	
79	.25017 59480 83925 04369 16994 631	
1780	.25042 00023 08893 97993 72822 644	(211)
81	.25066 39194 63243 53776 94317 851	
82	.25090 76997 00855 98514 40504 790	
83	.25115 13431 75354 60160 05806 617	
84	.25139 48500 40104 25911 63929 004	
1785	.25163 82204 48212 00133 36751 615	(212)
86	.25188 14545 52527 62116 42917 699	
87	.25212 45525 05644 23677 80598 068	
88	.25236 75144 59898 86597 98692 353	
89	.25261 03405 67372 99898 10518 121	
1790	.25285 30309 79893 16957 03826 918	(212,3)
91	.25309 55858 49031 52469 00775 909	
92	.25333 80053 26106 39242 21274 164	
93	.25358 02895 62182 84839 02914 072	
94	.25382 24387 08073 28058 30490 682	
1795	.25406 44529 14337 95260 27904 997	(212,3)
96	.25430 63323 31285 56534 65041 432	
97	.25454 80771 08973 81712 32004 724	
98	.25478 96873 97209 96221 32897 578	
99	.25503 11633 45551 36787 51117 245	

N	logarithm	ref
1800	.25527 25051 03306 06980 37947 012	(72,213)
01	.25551 37128 19533 32604 76017 322	
02	.25575 47866 43044 16938 69010 807	
03	.25599 57267 22401 95818 08786 032	
04	.25623 65332 05922 92568 70896 107	
1805	.25647 72062 41676 72785 89280 568	(72,213)
06	.25671 77459 77486 98962 60712 098	
07	.25695 81525 60931 84966 29383 603	
08	.25719 84261 39344 50365 01826 075	
09	.25743 85668 59813 74603 42153 390	
1810	.25767 85748 69184 51028 97436 764	(213,4)
11	.25791 84503 14058 40769 02819 070	
12	.25815 81933 40794 26459 15787 480	
13	.25839 78040 95508 65823 28832 067	
14	.25863 72827 24076 45106 09527 963	
1815	.25887 66293 72131 32358 16889 510	(213,4)
16	.25911 58441 85066 30574 42656 489	
17	.25935 49273 08034 30686 25984 987	
18	.25959 38788 85948 64407 89828 795	
19	.25983 26990 63483 56937 47111 338	
1820	.26007 13879 85074 79513 24603 113	(108,214)
21	.26030 99457 94920 01825 52235 337	
22	.26054 83726 36979 44284 65397 125	
23	.26078 66686 54976 30145 67580 846	
24	.26102 48339 92397 37490 00558 526	

(9)

N	logarithm	ref	
1825	.26126 28687 92493 51064 69091 110	(99,214)	
26	.26150 07731 98280 13979 66992 180		
27	.26173 85473 52537 79263 51188 281		
28	.26197 61913 97812 61278 10239 347		
29	.26221 37054 76416 86992 73604 847		
1830	.26245 10897 30429 47118 07764 170		
31	.26268 83443 01696 47100 45123 455		
32	.26292 54693 31831 57976 91465 497		
33	.26316 24649 62216 67091 57524 606		
34	.26339 93313 34002 28673 60094 240		
1835	.26363 60685 88108 14277 37901 983		
36	.26387 26768 65223 63085 27313 935		
37	.26410 91563 05808 32073 42758 812		
38	.26434 55070 50092 46041 06591 033		
39	.26458 17292 38077 47503 72941 847		
1840	.26481 78230 09536 46450 89937 964		
41	.26505 37885 04014 69968 44498 425		
42	.26528 96258 60830 11726 33752 345		
43	.26552 53352 19073 81332 06952 874		
44	.26576 09167 17610 53550 21596 079		
1845	.26599 63704 95079 17388 57287 618		(215)
46	.26623 16966 89893 25051 30734 877		
47	.26646 68954 40241 40759 55077 839		
48	.26670 19668 84087 89439 86608 173		
49	.26693 69111 59173 05281 01763 065		

N	logarithm	ref
1850	.26717 17284 03013 80159 47117 948	
51	.26740 64187 52904 11934 04940 705	
52	.26764 09823 45915 52610 16708 979	
53	.26787 54193 18897 56374 06832 019	
54	.26810 97298 08478 27497 48658 958	
1855	.26834 39139 51064 68113 14696 555	
56	.26857 79718 82843 25861 52801 313	
57	.26881 19037 39780 41409 29953 376	
58	.26904 57096 57622 95839 85062 826	
59	.26927 93897 71898 57916 32102 871	
1860	.26951 29442 17916 31217 54708 981	
61	.26974 63731 30767 01147 33228 211	(215)
62	.26997 96766 45323 81817 45048 877	
63	.27021 28548 96242 62804 78887 253	
64	.27044 59080 17962 55783 03555 197	
1865	.27067 88361 44706 41029 31580 440	
66	.27091 16394 10481 13806 17899 812	
67	.27114 43179 49078 30619 33694 818	(216)
68	.27137 68718 94074 55351 55288 792	
69	.27160 93013 78832 05273 07875 316	
1870	.27184 16065 36498 96929 03698 656	
71	.27207 37875 00009 91904 14158 729	(216,7)
72	.27230 58444 02086 42465 15165 434	
73	.27253 77773 75237 37081 44920 208	(217)
74	.27276 95865 51759 45824 13156 268	

N	logarithm	ref
1875	.27300 12720 63737 65644 00723 244	
76	.27323 28340 43045 65528 88256 773	
77	.27346 42726 21346 31540 52529 130	(105)
78	.27369 55879 30092 11731 68933 028	
79	.27392 67801 00525 60943 58407 479	(217,8)
1880	.27415 78492 63679 85484 16971 889	
81	.27438 87955 50378 87687 65892 535	
82	.27461 96190 91238 10355 60364 053	
83	.27485 03200 16664 81079 94447 745	
84	.27508 08984 56858 56448 39868 226	
1885	.27531 13545 41811 66132 56130 262	
86	.27554 16884 01309 56859 09278 569	
87	.27577 19001 64931 36264 36484 871	
88	.27600 19899 62050 16632 93508 582	
89	.27623 19579 21833 58520 21940 192	(62,218)
1890	.27646 18041 73244 14259 72999 684	
91	.27669 15288 45039 71355 24526 139	
92	.27692 11320 65773 95758 27659 139	
93	.27715 06139 63796 75031 19577 532	
94	.27737 99746 67254 61396 38526 706	
1895	.27760 92143 04091 14671 77231 647	
96	.27783 83330 02047 45093 10659 739	
97	.27806 73308 88662 56023 33964 535	
98	.27829 62080 91273 86549 46309 531	
99	.27852 49647 37017 53967 16139 364	

N	logarithm	ref
1900	.27875 36009 52828 96153 63334 758	(219)
01	.27898 21168 65443 13828 93557 050	
02	.27921 05126 01395 12706 19958 144	
03	.27943 87882 87020 45531 07302 300	
04	.27966 69440 48455 54010 73417 318	
1905	.27989 49800 11638 10632 82764 304	(219,0)
06	.28012 28963 02307 60374 66787 424	
07	.28035 06930 46005 62303 05577 793	
08	.28057 83703 68076 31065 05258 876	
09	.28080 59283 93666 78270 05374 643	
1910	.28103 33672 47727 53763 50435 983	(46,220)
11	.28126 06870 55012 86792 59655 784	
12	.28148 78879 40081 27064 28778 443	
13	.28171 49700 27295 85695 97785 477	
14	.28194 19334 40824 76059 18135 322	
1915	.28216 87783 04641 54516 53072 348	
16	.28239 55047 42525 61052 44417 564	
17	.28262 21128 78062 59797 79131 448	
18	.28284 86028 34644 79448 88817 804	
19	.28307 49747 35471 53581 15216 540	
1920	.28330 12287 03549 60857 74612 716	
21	.28352 73648 61693 65133 53969 229	
22	.28375 33833 32526 55454 71470 950	
23	.28397 92842 38479 85954 34049 129	
24	.28420 50677 01794 15644 24336 369	

N	logarithm	ref
1925	.28443 07338 44519 48103 49384 404	
26	.28465 62827 88515 71063 83359 407	
27	.28488 17146 55452 95892 36312 494	
28	.28510 70295 66811 96971 81006 506	
29	.28533 22276 43884 50978 69664 087	
1930	.28555 73090 07773 76059 72386 464	
31	.28578 22737 79394 70906 68877 210	(220)
32	.28600 71220 79474 53730 24990 635	
33	.28623 18540 28553 01132 85510 264	(221)
34	.28645 64697 46982 86881 14449 159	
1935	.28668 09693 54930 20578 14050 650	
36	.28690 53529 72374 86235 53555 214	
37	.28712 96207 19110 80746 38687 006	
38	.28735 37727 14746 52258 52701 681	
39	.28757 78090 78705 38448 99725 782	
1940	.28780 17299 30226 04699 81007 064	
41	.28802 55353 88362 82175 34584 661	
42	.28824 92255 71986 05801 68778 013	
43	.28847 28005 99782 52148 19783 922	
44	.28869 62605 90255 77211 63562 004	
1945	.28891 96056 61726 54103 12080 170	
46	.28914 28359 32333 10638 23883 556	
47	.28936 59515 20031 66830 58842 590	
48	.28958 89525 42596 72289 06828 539	
49	.28981 18391 17621 43519 19958 039	(221)

N	logarithm	ref
1950	.29003 46113 62518 01128 77941 665	(222)
51	.29025 72693 94518 06938 15965 594	
52	.29047 98133 30673 00995 44429 874	
53	.29070 22432 87854 38496 89761 652	
54	.29092 45593 82754 26612 85417 058	
1955	.29114 67617 31885 61219 42081 119	
56	.29136 88504 51582 63536 25971 286	
57	.29159 08256 58001 16670 74046 703	
58	.29181 26874 67119 02068 74822 357	
59	.29203 44359 94736 35872 43384 687	
1960	.29225 60713 56476 05185 19103 066	
61	.29247 75936 67784 04244 14429 812	
62	.29269 90030 43929 70500 43080 088	
63	.29292 02996 00006 20607 55782 133	
64	.29314 14834 50930 86318 11687 730	
1965	.29336 25547 11445 50289 13432 792	
66	.29358 35134 96116 81796 33738 195	
67	.29380 43599 19336 72357 61341 749	
68	.29402 50940 95322 71265 93953 321	
69	.29424 57161 38118 21032 05826 630	
1970	.29446 62261 61592 92737 17443 177	(51,222)
71	.29468 66242 79443 21295 94706 102	
72	.29490 69106 05192 40630 04944 467	
73	.29512 70852 52191 18752 56931 590	
74	.29534 71483 33617 92763 52024 560	

N	logarithm	ref
1975	.29556 70999 62479 03756 73435 970	(223)
76	.29578 69402 51609 31638 40553 179	
77	.29600 66693 13672 29857 55125 103	
78	.29622 62872 61160 60048 66041 602	
79	.29644 57942 06396 26586 79335 948	
1980	.29666 51902 61531 11055 39946 725	
81	.29688 44755 38547 06627 11681 692	
82	.29710 36501 49256 52357 81732 735	
83	.29732 27142 05302 67394 15998 009	
84	.29754 16678 18159 85094 91374 685	
1985	.29776 05110 99133 87066 31093 459	(223)
86	.29797 92441 59362 37111 69074 053	
87	.29819 78671 09815 15095 69189 369	
88	.29841 63800 61294 50723 25234 831	
89	.29863 47831 24435 57233 67308 588	
1990	.29885 30764 09706 65010 00217 844	(224)
91	.29907 12600 27409 55103 99436 477	
92	.29928 93340 87679 92676 90049 395	
93	.29950 72987 00487 60356 34029 734	
94	.29972 51539 75636 91509 51105 975	
1995	.29994 29000 22767 03432 98387 429	(224,5)
96	.30016 05369 51352 30459 33828 255	
97	.30037 80648 70702 56980 88522 235	
98	.30059 54838 89963 50390 72732 940	(225)
99	.30081 27941 18116 93941 40476 707	

N	logarithm	ref
2000	.30102 99956 63981 19521 37388 947	(241)
01	.30124 70886 36211 40349 56517 785	
02	.30146 40731 43299 83588 26602 825	
03	.30168 09492 93576 22874 57311 011	
04	.30189 77171 95208 10770 65816 026	
2005	.30211 43769 56201 11133 09022 534	
06	.30233 09286 84399 31401 45651 736	
07	.30254 73724 87485 54806 52320 228	
08	.30276 37084 72981 72498 17660 009	
09	.30297 99367 48249 15593 38443 672	
2010	.30319 60574 20488 87144 41595 325	(241,2)
11	.30341 20705 96741 94027 55884 667	
12	.30362 79763 83889 78752 57018 797	
13	.30384 37748 88654 51193 09763 883	
14	.30405 94662 17599 20238 30646 621	
2015	.30427 50504 77128 25365 94703 633	(242)
16	.30449 05277 73487 68137 09665 387	
17	.30470 58982 12765 43612 80880 090	
18	.30492 11619 00891 71692 90202 112	
19	.30513 63189 43639 28377 11988 981	
2020	.30535 13694 46623 76948 89270 729	
21	.30556 63135 15303 99081 93075 527	
22	.30578 11512 54982 25869 87815 882	
23	.30599 58827 70804 68779 25560 472	
24	.30621 05081 67761 50525 91937 677	

N	logarithm	ref
2025	.30642 50275 50687 35875 26338 236	(84,243)
26	.30663 94410 24261 62366 39006 148	
27	.30685 37486 93008 70960 47528 858	
28	.30706 79506 61298 36613 55160 086	
29	.30728 20470 33345 98773 93331 239	
2030	.30749 60379 13212 91804 50630 216	(269)
31	.30770 99234 04806 75330 10449 635	
32	.30792 37036 11881 64510 19430 007	
33	.30813 73786 38038 60237 08747 152	
34	.30835 09485 86725 79259 90217 298	
2035	.30856 44135 61238 84234 49117 661	(270)
36	.30877 77736 64721 13699 55545 010	
37	.30899 10290 00164 11979 16059 735	
38	.30920 41796 70407 59011 87288 170	
39	.30941 72257 78140 00106 73081 558	
2040	.30963 01674 25898 75626 26755 870	
41	.30984 30047 16070 50596 79862 878	
42	.31005 57377 50891 44246 18869 317	
43	.31026 83666 32447 59469 31047 713	
44	.31048 08914 62675 12221 40809 485	
2045	.31069 33123 43360 60839 57638 230	
46	.31090 56293 76141 35292 56708 693	
47	.31111 78426 62505 66359 13204 820	
48	.31132 99523 03793 14735 11278 420	
49	.31154 19584 01195 00069 48518 443	

N	logarithm	ref
2050	.31175 38610 55754 29929 56729 552	(271)
51	.31196 56603 68366 28695 59747 712	
52	.31217 73564 39778 66384 88949 750	
53	.31238 89493 70591 87405 77043 432	
54	.31260 04392 61259 39241 50654 391	
2055	.31281 18262 12088 01064 42156 356	
56	.31302 31103 23238 12280 41121 501	
57	.31323 42916 94724 01004 05698 368	
58	.31344 53704 26414 12464 54155 738	
59	.31365 63466 18031 37342 56761 980	
2060	.31386 72203 69153 40038 48100 893	(272)
61	.31407 79917 79212 86871 79856 720	
62	.31428 86609 47497 74212 34033 037	
63	.31449 92279 73151 56543 16502 424	
64	.31470 96929 55173 74455 50716 354	
2065	.31492 00559 92419 82575 91337 484	(86,243)
66	.31513 03171 83601 77425 77489 575	
67	.31534 04766 27288 25213 45253 528	
68	.31555 05344 21904 89559 18971 601	
69	.31576 04906 65734 59153 00855 633	
2070	.31597 03454 56917 75345 78329 188	
71	.31618 00988 93452 59673 68467 834	
72	.31638 97510 73195 41316 18836 323	
73	.31659 93020 93860 84487 83956 276	
74	.31680 87520 53022 15763 96573 028	

N	logarithm	ref
2075	.31701 81010 48111 51340 52825 626	
76	.31722 73491 76420 24228 30359 515	
77	.31743 64965 35099 11381 58357 293	
78	.31764 55432 21158 60761 58398 961	
79	.31785 44893 31469 18334 74999 396	
2080	.31806 33349 62761 55006 14607 368	
81	.31827 20802 11626 93488 11787 171	(263)
82	.31848 07251 74517 35104 41241 012	
83	.31868 92699 47745 86529 94267 585	(272)
84	.31889 77146 27486 86466 38189 760	
2085	.31910 60593 09776 32253 77222 109	
86	.31931 43040 90512 06418 33186 959	
87	.31952 24490 65454 03156 64425 958	(273)
88	.31973 04943 30224 54756 41192 537	
89	.31993 84399 80308 57953 95749 452	(252)
2090	.32014 62861 11054 00228 65334 470	
91	.32035 40328 17671 86034 46096 476	
92	.32056 16801 95236 62968 76043 683	
93	.32076 92283 38686 47878 64985 288	
94	.32097 66773 42823 52904 89387 751	
2095	.32118 40273 02314 11463 70007 046	
96	.32139 12783 11689 04166 50098 496	
97	.32159 84304 65343 84677 91946 420	
98	.32180 54838 57539 05512 09396 586	
99	.32201 24385 82400 43767 54015 477	(117,243)

N	logarithm	ref
2100	.32221 92947 33919 26800 72441 618	
01	.32242 60524 05952 57838 52435 695	
02	.32263 27116 92223 41529 75077 838	
03	.32283 92726 86321 09435 90502 405	
04	.32304 57354 81701 45461 34502 680	
2105	.32325 21001 71687 11223 03280 287	
06	.32345 83668 49467 71360 03556 657	
07	.32366 45356 08100 18782 95206 704	
08	.32387 06065 40508 99863 43517 839	
09	.32407 65797 39486 39563 98120 686	
2110	.32428 24552 97692 66508 15581 299	
11	.32448 82333 07656 37991 42588 329	(274)
12	.32469 39138 61774 64932 76612 428	
13	.32489 94970 52313 36767 20859 309	(274)
14	.32510 49829 71407 46279 50282 087	
2115	.32531 03717 11061 14379 05363 112	
16	.32551 56633 63148 14816 30320 140	
17	.32572 08580 19411 98840 72336 634	
18	.32592 59557 71466 19800 58361 139	
19	.32613 09567 10794 57684 65965 939	
2120	.32633 58609 28751 43606 04700 811	
21	.32654 06685 16561 84228 24323 401	
22	.32674 53795 65321 86133 66233 687	
23	.32694 99941 65998 80134 74386 176	
24	.32715 45124 09431 45527 81899 805	

N	logarithm	ref
2125	.32735 89343 86330 34289 89532 102	
26	.32756 32601 87277 95218 52130 893	
27	.32776 74899 02728 98014 89123 830	
28	.32797 16236 23010 57310 35053 132	
29	.32817 56614 38322 56636 46110 339	(275)
2130	.32837 96034 38737 72338 78573 383	
31	.32858 34497 14201 97434 54996 067	(275)
32	.32878 72003 54534 65414 33947 974	
33	.32899 08554 49428 73987 99050 962	
34	.32919 44150 88451 08774 83006 776	
2135	.32939 78793 61042 66938 42258 776	
36	.32960 12483 56518 80765 97879 571	
37	.32980 45221 64069 41192 58225 215	(128,244)
38	.33000 77008 72759 21270 38845 746	
39	.33021 07845 71527 99582 95091 156	
2140	.33041 37733 49190 83604 82801 342	
41	.33061 66672 94438 33006 62418 281	(275,6)
42	.33081 94664 95836 82905 61808 542	
43	.33102 21710 41828 67062 13034 266	(74,244)
44	.33122 47810 20732 41021 78261 028	
2145	.33142 72965 20743 05203 79941 377	
46	.33162 97176 29932 27935 50363 472	
47	.33183 20444 36248 68433 15605 044	
48	.33203 42770 27517 99729 28883 845	
49	.33223 64154 91443 31546 68246 951	

N	logarithm	ref
2150	.33243 84599 15605 33119 13492 585	(276)
51	.33264 04103 87462 55959 17169 667	
52	.33284 22669 94351 56572 84452 000	
53	.33304 40298 23487 19121 76635 876	
54	.33324 56989 61962 78032 52961 924	
2155	.33344 72744 96750 40553 65414 315	
56	.33364 87565 14701 09260 21102 779	
57	.33385 01451 02545 04506 26785 547	
58	.33405 14403 46891 86825 30044 047	
59	.33425 26423 34230 79278 71573 162	
2160	.33445 37511 50930 89752 63003 939	(277)
61	.33465 47668 83241 33203 04628 969	
62	.33485 56896 17291 53849 57354 064	
63	.33505 65194 39091 47317 83153 564	
64	.33525 72564 34531 82730 68260 333	
2165	.33545 79006 89384 24748 43275 550	
66	.33565 84522 89301 55558 14337 495	
67	.33585 89113 19817 96812 19442 890	
68	.33605 92778 66349 31516 23968 790	
69	.33625 95520 14193 25866 69397 730	
2170	.33645 97338 48529 51037 89203 587	
71	.33665 98234 54420 04919 05810 679	
72	.33685 98209 16809 33801 22493 691	
73	.33705 97263 20524 54014 24041 416	
74	.33725 95397 50275 73513 99962 711	

N	logarithm	ref
2175	.33745 92612 90656 13420 03968 768	(277)
76	.33765 88910 26142 29503 63421 574	
77	.33785 84290 41094 33626 52394 418	
78	.33805 78754 19756 15130 41946 437	
79	.33825 72302 46255 62177 41169 478	
2180	.33845 64936 04604 83041 42522 023	
81	.33865 56655 78700 27350 84921 519	
82	.33885 47462 52323 07282 48023 240	
83	.33905 37357 09139 18706 91070 741	
84	.33925 26340 32699 62285 49660 040	
2185	.33945 14413 06440 64519 03716 933	
86	.33965 01576 13683 98748 29944 224	
87	.33984 87830 37637 06106 51953 228	
88	.34004 73176 61393 16424 01251 620	
89	.34024 57615 67931 69085 02217 557	
2190	.34044 41148 40118 33836 94148 037	
91	.34064 23775 60705 31552 03427 635	
92	.34084 05498 12331 54941 78822 060	
93	.34103 86316 77522 89224 02859 508	
94	.34123 66232 38692 32742 92221 353	
2195	.34143 45245 78140 17542 00022 559	
96	.34163 23357 78054 29890 32821 097	
97	.34183 00569 20510 30761 95154 738	
98	.34202 76880 87471 76268 74362 832	
99	.34222 52293 60790 38046 78410 058	

N	logarithm	ref
2200	.34242 26808 22206 23596 39388 660	(253)
01	.34262 00425 53347 96575 95335 352	
02	.34281 73146 35732 97049 62958 910	
03	.34301 44971 50767 61689 13834 421	
04	.34321 15901 79747 43929 66580 282	
2205	.34340 85938 03857 34080 07494 290	(61,244)
06	.34360 55081 04171 79387 52085 586	
07	.34380 23331 61655 04056 59899 729	
08	.34399 90690 57161 29223 14994 891	
09	.34419 57158 71434 92882 84387 989	
2210	.34439 22736 85110 69774 66750 523	(278)
11	.34458 87425 78713 91219 43595 037	
12	.34478 51226 32660 64913 45154 345	
13	.34498 14139 27257 94677 43117 064	
14	.34517 76165 42704 00160 82344 545	
2215	.34537 37305 59088 36501 63655 950	
16	.34556 97560 56392 13941 89730 038	
17	.34576 56931 14488 17398 86134 175	
18	.34596 15418 13141 25992 09453 169	
19	.34615 73022 32008 32526 54452 750	
2220	.34635 29744 50638 62931 72174 875	(279)
21	.34654 85585 48473 95657 10824 549	
22	.34674 40546 04848 81023 91270 442	
23	.34693 94626 98990 60533 28944 402	
24	.34713 47829 10019 86131 13887 812	

N	logarithm	ref
2225	.34733 00153 16950 39429 60655 803	
26	.34752 51599 98689 50885 39753 482	
27	.34772 02170 34038 18935 02241 650	
28	.34791 51865 01691 29087 09112 883	
29	.34811 00684 80237 72971 77002 445	
2230	.34830 48630 48160 67347 51762 162	
31	.34849 95702 83837 73065 21389 239	
32	.34869 41902 65541 13989 79765 908	
33	.34888 87230 71437 95879 52629 928	
34	.34908 31687 79590 25222 97160 124	
2235	.34927 75274 67955 28033 86525 512	
36	.34947 17992 14385 68603 90711 006	
37	.34966 59840 96629 68213 64897 322	(279)
38	.34986 00821 92331 23801 56637 367	
39	.35005 40935 79030 26591 43036 290	(271)
2240	.35024 80183 34162 80678 09107 322	
41	.35044 18565 35061 21571 78440 618	
42	.35063 56082 58954 34701 07287 550	
43	.35082 92735 82967 73874 53128 241	
44	.35102 28525 84123 79701 28755 583	(34,245)
2245	.35121 63453 39341 97970 52874 590	
46	.35140 97519 25438 97990 08181 644	
47	.35160 30724 19128 90884 17854 013	
48	.35179 63068 97023 47850 51346 004	
49	.35198 94554 35632 18376 70354 167	

N	logarithm	ref
2250	.35218 25181 11362 48416 25780 171	(279)
51	.35237 54950 00519 98524 16486 304	
52	.35256 83861 79308 61952 20604 972	
53	.35276 11917 23830 82704 10130 125	
54	.35295 39117 10087 73550 59485 242	
2255	.35314 65462 13979 34004 58729 265	
56	.35333 90953 11304 68256 42028 816	
57	.35353 15590 77762 03069 41992 033	
58	.35372 39375 88949 05635 80426 529	
59	.35391 62309 20363 01393 06051 232	
2260	.35410 84391 47400 91800 89659 233	
61	.35430 05623 45359 72078 87196 287	
62	.35449 26005 89436 48904 81187 189	
63	.35468 45539 54728 58074 10910 006	
64	.35487 64225 16233 82120 01685 947	
2265	.35506 82063 48850 67895 03620 639	(93,114)
66	.35525 99055 27378 44113 50100 605	
67	.35545 15201 26517 38855 46316 966	
68	.35564 30502 20868 97031 98056 611	
69	.35583 44958 84935 97811 90969 553	
2270	.35602 58571 93122 72010 30489 648	(280)
71	.35621 71342 19735 19438 52554 495	
72	.35640 83270 38981 26216 15239 087	
73	.35659 94357 24970 82044 81386 581	
74	.35679 04603 51715 97444 02288 574	

N	logarithm	ref
2275	.35698 14009 93131 20949 12436 271	
76	.35717 22577 23033 56271 45333 135	
77	.35736 30306 15142 79420 80328 900	
78	.35755 37197 43081 55790 30404 183	
79	.35774 43251 80375 57203 80804 449	
2280	.35793 48470 00453 78925 88391 685	
81	.35812 52852 76648 56634 51551 838	(282)
82	.35831 56400 82195 83356 60465 892	
83	.35850 59114 90235 26366 37522 388	
84	.35869 60995 73810 44046 77619 195	
2285	.35888 62044 05869 02713 98072 505	
86	.35907 62260 59262 93405 07821 231	
87	.35926 61646 06748 48629 05585 336	(208)
88	.35945 60201 20986 59081 16607 081	
89	.35964 57926 74542 90320 77574 695	
2290	.35983 54823 39887 99412 79298 655	
91	.36002 50891 89397 51532 76681 494	
92	.36021 46132 95352 36535 75492 910	
93	.36040 40547 29938 85489 05432 918	(55,245)
94	.36059 34135 65248 87168 88936 844	
2295	.36078 26898 73280 04521 15147 094	
96	.36097 18837 25935 91086 28447 927	
97	.36116 09951 95026 07388 40930 796	(282)
98	.36135 00243 52266 37288 78129 275	
99	.36153 89712 69279 04303 67334 182	

N	logarithm	ref
2300	.36172 78360 17592 87886 77771 123	
01	.36191 66186 68643 39676 21894 457	
02	.36210 53192 93772 99706 27023 562	
03	.36229 39379 64231 12583 86519 166	
04	.36248 24747 51174 43629 99669 643	
2305	.36267 09297 25666 94986 09429 238	
06	.36285 93029 58680 21685 47122 491	
07	.36304 75945 21093 47689 93201 432	
08	.36323 58044 83693 81891 63114 570	
09	.36342 39329 17176 34080 27319 216	(283)
2310	.36361 19798 92144 30875 74441 331	
11	.36379 99454 79109 31626 26559 784	(284)
12	.36398 78297 48491 44272 15564 728	
13	.36417 56327 70619 41175 29512 724	
14	.36436 33546 15730 74914 37874 224	
2315	.36455 09953 53971 94046 04542 137	
16	.36473 85550 55398 58831 97443 391	
17	.36492 60337 89975 56932 03568 659	
18	.36511 34316 27577 19063 58208 842	
19	.36530 07486 37987 34626 97160 304	
2320	.36548 79848 90899 67297 40634 471	
21	.36567 51404 55917 70583 17581 012	
22	.36586 22154 02555 03350 39107 577	
23	.36604 92098 00235 45314 29652 905	
24	.36623 61237 18293 12497 24544 001	

N	logarithm	ref
2325	.36642 29572 25972 72653 42542 139	
26	.36660 97103 92429 60660 41956 505	
27	.36679 63832 86729 93877 68878 497	
28	.36698 29759 77850 87472 06063 991	
29	.36716 94885 34680 69710 30965 214	
2330	.36735 59210 26018 97218 91388 355	
31	.36754 22735 20576 70211 07227 546	
32	.36772 85460 86976 47681 06700 523	
33	.36791 47387 93752 62566 05485 931	(284)
34	.36810 08517 09351 36875 37137 097	
2335	.36828 68849 02130 96787 43121 951	
36	.36847 28384 40361 87714 30813 741	
37	.36865 87123 92226 89334 07732 290	
38	.36884 45068 25821 30591 00310 632	
39	.36903 02218 09153 04663 65437 148	(285)
2340	.36921 58574 10142 83901 02998 592	
41	.36940 14136 96624 34726 77624 833	(285)
42	.36958 68907 36344 32511 57811 601	
43	.36977 22885 96962 76413 80573 095	
44	.36995 76073 46053 04188 49751 968	
2345	.37014 28470 51102 06964 76089 931	
46	.37032 80077 79510 43991 67138 046	
47	.37051 30895 98592 57352 75061 651	(286)
48	.37069 80925 75576 86649 10370 880	
49	.37088 30167 77605 83651 29583 760	

N	logarithm	ref
2350	.37106 78622 71736 26920 04805 047	(286)
51	.37125 26291 24939 36395 83180 177	
52	.37143 73174 04100 87957 44159 993	
53	.37162 19271 76021 27949 62488 344	
54	.37180 64585 07415 87679 84801 054	
2355	.37199 09114 64914 97884 27701 384	(287)
56	.37217 52861 15064 03163 05153 653	
57	.37235 95825 24323 76384 93013 464	
58	.37254 38007 59070 33061 38489 719	
59	.37272 79408 85595 45690 22310 488	
2360	.37291 20029 70106 58068 81341 740	
61	.37309 59870 78726 99576 99384 963	
62	.37327 98932 77495 99429 73856 796	
63	.37346 37216 32369 00899 66030 966	
64	.37364 74722 09217 75509 42500 104	
2365	.37383 11450 73830 37194 15492 297	
66	.37401 47402 91911 56433 89654 692	
67	.37419 82579 29082 74356 22893 904	
68	.37438 16980 50882 16809 08840 579	
69	.37456 50607 22765 08403 88483 068	
2370	.37474 83460 10103 86528 98492 897	(287)
71	.37493 15539 78188 15333 63742 492	
72	.37511 46846 92224 99682 41493 493	
73	.37529 77382 17338 99080 24711 905	
74	.37548 07146 18572 41568 11944 372	

N	logarithm	ref
2375	.37566 36139 60885 37589 51167 916	
76	.37584 64363 09155 93827 65003 652	
77	.37602 91817 28180 27013 64663 236	(262)
78	.37621 18502 82672 77705 59975 077	
79	.37639 44420 37266 24038 72815 750	
2380	.37657 69570 56511 95446 61250 476	
81	.37675 93954 04879 86353 61665 078	(57,245)
82	.37694 17571 46758 69838 56150 386	
83	.37712 40423 46456 11269 72378 776	(271)
84	.37730 62510 68198 81911 23191 215	
2385	.37748 83833 76132 72500 93092 034	
86	.37767 04393 34323 06799 78827 511	
87	.37785 24190 06754 55112 91203 300	
88	.37803 43224 57331 47782 25274 771	
89	.37821 61497 49877 88651 06023 413	(288)
2390	.37839 79009 48137 68500 16611 601	
91	.37857 95761 15774 78456 16287 305	
92	.37876 11753 16373 23371 54989 544	
93	.37894 26986 13437 35176 91684 848	(288)
94	.37912 41460 70391 86205 23444 356	
2395	.37930 55177 50582 02488 32250 722	
96	.37948 68137 17273 77025 56503 586	
97	.37966 80340 33653 83024 94171 970	
98	.37984 91787 62829 87116 44521 736	
99	.38003 02479 67830 62537 95325 943	(9,245)

N	logarithm	ref
2400	.38021 12417 11606 02293 62445 874	
01	.38039 21600 57027 32284 88650 344	
02	.38057 30030 66887 24414 08520 929	
03	.38075 37708 03900 09660 86270 795	
04	.38093 44633 30701 91131 33284 894	
2405	.38111 50807 09850 57080 12169 528	
06	.38129 56230 03825 93905 34079 461	
07	.38147 60902 75029 99116 56071 150	
08	.38165 64825 85786 94275 85210 960	
09	.38183 67999 98343 37911 96147 750	
2410	.38201 70425 74868 38407 68839 665	
11	.38219 72103 77453 66860 53105 579	(289)
12	.38237 73034 68113 69916 66652 252	
13	.38255 73219 08785 82578 33208 976	
14	.38273 72657 61330 40984 67382 241	
2415	.38291 71350 87530 95166 12823 794	
16	.38309 69299 49094 21772 40286 342	
17	.38327 66504 07650 36774 12122 123	(289)
18	.38345 62965 24753 08138 19760 560	
19	.38363 58683 61879 68477 00682 345	
2420	.38381 53659 80431 27671 41388 372	
21	.38399 47894 41732 85467 72843 224	
22	.38417 41388 07033 44048 64854 121	
23	.38435 34141 37506 20578 25827 611	(18,246)
24	.38453 26154 94248 59721 14327 657	

(12)

N	logarithm	ref
2425	.38471 17429 38282 46135 68840 222	
26	.38489 07965 30554 16941 62131 004	
27	.38506 97763 31934 74161 86564 491	
28	.38524 86824 03219 97138 76734 199	
29	.38542 75148 05130 54924 75735 618	
2430	.38560 62735 98312 18647 51395 163	
31	.38578 49588 43335 73849 68750 235	
32	.38596 35706 00697 32803 25057 388	
33	.38614 21089 30818 46798 53587 516	
34	.38632 05738 94046 18408 02448 986	
2435	.38649 89655 50653 13724 94661 697	
36	.38667 72839 60837 74576 75687 143	
37	.38685 55291 84724 30713 54601 750	(290)
38	.38703 37012 82363 11971 45082 986	
39	.38721 18003 13730 60411 12360 014	
2440	.38738 98263 38729 42431 32263 032	
41	.38756 77794 17188 60857 68487 834	(291)
42	.38774 56596 08863 67006 74174 588	
43	.38792 34669 73436 72725 23882 358	
44	.38810 12015 70516 62404 82023 468	
2445	.38827 88634 59639 04972 13804 445	
46	.38845 64527 00266 65854 44702 952	
47	.38863 39693 51789 18920 74492 916	(291)
48	.38881 14134 73523 58398 51812 797	
49	.38898 87851 24714 10766 15254 866	

N	logarithm	ref
2450	.38916 60843 64532 46621 06936 225	
51	.38934 33112 52077 92523 64495 322	
52	.38952 04658 46377 42816 97440 709	
53	.38969 75482 06385 71422 53761 875	
54	.38987 45583 90985 43611 82695 157	
2455	.39005 14964 58987 27753 99520 888	
56	.39022 83624 69130 07039 58251 207	
57	.39040 51564 80080 91180 38051 263	
58	.39058 18785 50435 28085 49219 893	
59	.39075 85287 38717 15513 64539 269	(75,246)
2460	.39093 51071 03379 12701 81786 479	
61	.39111 16137 02802 51970 23183 517	
62	.39128 80485 95297 50303 77545 736	
63	.39146 44118 39103 20909 90872 450	
64	.39164 07034 92387 84753 11107 035	
2465	.39181 69236 13248 82065 92777 626	
66	.39199 30722 59712 83836 67213 283	
67	.39216 91494 89736 03273 84014 346	(292)
68	.39234 51553 61204 07247 29439 567	
69	.39252 10899 31932 27706 27356 599	
2470	.39269 69532 59665 73074 28386 337	
71	.39287 27454 02079 39620 92855 746	
72	.39304 84664 16778 22810 73157 820	
73	.39322 41163 61297 28629 01101 540	(291)
74	.39339 96952 93101 84884 85818 839	

N	logarithm	ref
2475	.39357 52032 69587 52491 27779 883	(91,246)
76	.39375 06403 48080 36722 54452 238	
77	.39392 60065 85836 98448 83123 886	
78	.39410 13020 40044 65348 16394 411	
79	.39427 65267 67821 43095 75823 188	
2480	.39445 16808 26216 26530 79207 843	
81	.39462 67642 72209 10800 66950 878	
82	.39480 17771 62711 02482 82956 895	
83	.39497 67195 54564 30684 15487 562	
84	.39515 15915 04542 58118 03386 115	
2485	.39532 63930 69350 92159 13067 989	
86	.39550 11243 05625 95875 91658 946	
87	.39567 57852 69935 99041 01646 913	
88	.39585 03760 18781 09119 42398 674	
89	.39602 48966 08593 22234 63877 465	
2490	.39619 93470 95736 34112 77882 553	
91	.39637 37275 36506 51004 72116 911	
92	.39654 80379 87132 00586 32374 177	
93	.39672 22785 03773 42836 78121 261	
94	.39689 64491 42523 80895 16738 109	
2495	.39707 05499 59408 71895 21661 413	
96	.39724 45810 10386 37778 39664 295	
97	.39741 85423 51347 76085 32489 360	
98	.39759 24340 38116 70725 58037 857	
99	.39776 62561 26450 02725 96303 148	

N	logarithm	ref	
2500	.39794 00086 72037 60957 25222 106	(278)	
01	.39811 36917 30502 52839 51603 637		
02	.39828 73053 57401 15026 02279 036		
03	.39846 08496 08223 24065 80604 511		
04	.39863 43245 38392 07044 93431 890		
2505	.39880 77302 03264 52206 53649 185		
06	.39898 10666 58131 19549 63378 451		
07	.39915 43339 58216 51406 82904 199		
08	.39932 75321 58678 83000 90391 397		
09	.39950 06613 14610 52980 37438 043		
2510	.39967 37214 81038 13934 05493 167		
11	.39984 67127 12922 42884 68157 131		
12	.40001 96350 65158 51761 64367 088		
13	.40019 24885 92575 97852 87456 530		
14	.40036 52733 49938 94235 95063 974		
2515	.40053 79893 91946 20188 44851 956		
16	.40071 06367 73231 31577 60983 733		
17	.40088 32155 48362 71229 36291 301		
18	.40105 57257 71843 79276 75054 633		
19	.40122 81674 98113 03487 81298 368		
2520	.40140 05407 81544 09572 97498 546		(40,396)
21	.40157 28456 76445 91471 98578 396		
22	.40174 50822 37062 81620 46058 643		
23	.40191 72505 17574 61196 07214 292		
24	.40208 93505 72096 70344 44076 394		

N	logarithm	ref
2525	.40226 13824 54680 18384 77103 888	
26	.40243 33462 19311 93995 28337 214	
27	.40260 52419 19914 75378 48832 101	
28	.40277 70696 10347 40406 35158 601	
29	.40294 88293 44404 76745 39737 228	
2530	.40312 05211 75817 91961 79770 835	
31	.40329 21451 58254 23606 49517 708	(292,3)
32	.40346 37013 45317 49280 40638 226	
33	.40363 51897 90547 96679 75334 370	
34	.40380 66105 47422 53621 56988 297	
2535	.40397 79636 69354 78049 42993 244	
36	.40414 92492 09695 08019 44457 006	
37	.40432 04672 21730 71666 57445 378	
38	.40449 16177 58685 97151 30420 039	
39	.40466 27008 73722 22586 72512 528	(293,4)
2540	.40483 37166 19938 05946 07263 166	
41	.40500 46650 50369 34950 76441 043	
42	.40517 55462 17989 36938 98548 448	
43	.40534 63601 75708 88714 86600 451	(294)
44	.40551 71069 76376 26378 29757 738	
2545	.40568 77866 72777 55135 43378 168	
46	.40585 83993 17636 59089 92039 997	
47	.40602 89449 63615 11014 90077 171	
48	.40619 94236 63312 82105 84154 646	
49	.40636 98354 69267 51714 22399 226	(99,270)

N	logarithm	ref
2550	.40654 01804 33955 17062 14589 029	(294,5)
51	.40671 04586 09790 02937 87892 326	
52	.40688 06700 49124 71372 42634 184	
53	.40705 08148 04250 31297 12557 050	
54	.40722 08929 27396 48182 34029 187	
2555	.40739 09044 70731 53657 28642 643	(295)
56	.40756 08494 86362 55111 03630 310	
57	.40773 07280 26335 45274 74519 438	
58	.40790 05401 42635 11785 14426 951	
59	.40807 02858 87185 46729 34389 795	
2560	.40823 99653 11849 56170 99111 578	
61	.40840 95784 68429 69657 82494 757	
62	.40857 91254 08667 49710 67315 703	
63	.40874 86061 84244 01293 93388 067	
64	.40891 80208 46779 81267 58547 991	
2565	.40908 73694 47835 07820 76782 908	
66	.40925 66520 38909 69886 97813 858	
67	.40942 58686 71443 36540 92429 497	
68	.40959 50193 96815 66377 07858 269	
69	.40976 41042 66346 16869 97453 516	
2570	.40993 31233 31294 53716 28954 659	
71	.41010 20766 42860 60158 75575 980	
72	.41027 09642 52184 46291 94162 949	
73	.41043 97862 10346 58349 94644 521	
74	.41060 85425 68367 87976 04998 304	

N	logarithm	ref
2575	.41077 72333 77209 81474 35934 051	(263)
76	.41094 58586 87774 49043 49489 497	
77	.41111 44185 50904 73992 35721 155	
78	.41128 29130 17384 21938 01661 340	
79	.41145 13421 37937 49985 76701 357	
2580	.41161 97059 63230 15891 38549 512	
81	.41178 80045 43868 87205 63901 327	
82	.41195 62379 30401 50401 07948 150	
83	.41212 44061 73317 19981 16839 151	
84	.41229 25093 23046 47571 77200 543	
2585	.41246 05474 29961 30995 06804 760	
86	.41262 85205 44375 23325 90471 242	
87	.41279 64287 16543 41930 65269 424	
88	.41296 42719 96662 77488 59083 522	
89	.41313 20504 34872 02995 86587 730	
2590	.41329 97640 81251 82752 06669 481	(295)
91	.41346 74129 85824 81329 45327 552	
92	.41363 49971 98555 72524 88060 866	(296)
93	.41380 25167 69351 48294 45753 054	
94	.41396 99717 48061 27670 98046 975	
2595	.41413 73621 84476 65664 18192 673	
96	.41430 46881 28331 62143 83341 452	
97	.41447 19496 29302 70705 74248 088	
98	.41463 91467 37009 07520 68332 477	
99	.41480 62795 01012 60166 30041 409	

N	logarithm	ref
2600	.41497 33479 70817 96442 02440 527	
01	.41514 03521 95872 73167 03955 952	
02	.41530 72922 25567 44961 34174 516	
03	.41547 41681 09235 73009 92601 029	
04	.41564 09798 96154 33810 14260 514	
2605	.41580 77276 35543 27902 26022 919	
06	.41597 44113 76565 88583 27517 360	
07	.41614 10311 68328 90604 00492 610	
08	.41630 75870 59882 58849 50470 148	
09	.41647 40791 00220 77002 84525 802	(296,7)
2610	.41664 05073 38280 96192 29025 695	
11	.41680 68718 22944 43621 91131 973	
12	.41697 31726 03036 31185 67883 549	
13	.41713 94097 27325 64065 06646 904	
14	.41730 55832 44525 49310 20721 828	
2615	.41747 16932 03293 04404 63876 842	
16	.41763 77396 52229 65813 67578 950	
17	.41780 37226 39880 97516 44672 287	(297)
18	.41796 96422 14736 99521 63250 189	
19	.41813 54984 25232 16366 94455 214	
2620	.41830 12913 19745 45602 37931 654	
21	.41846 70209 46600 46257 28645 116	(297,8)
22	.41863 26873 54065 47291 28773 860	
23	.41879 82905 90353 56029 08366 670	
24	.41896 38307 03622 66579 18452 183	

N	logarithm	ref
2625	.41912 93077 41975 68236 60274 777	
26	.41929 47217 53460 53869 54322 309	
27	.41946 00727 86070 28290 12801 246	
28	.41962 53608 87743 16609 19204 964	
29	.41979 05861 06362 72575 18611 314	
2630	.41995 57484 89757 86897 22335 839	
31	.42012 08480 85702 95552 30557 413	
32	.42028 58849 41917 88076 76523 422	
33	.42045 08591 06068 15841 95932 026	(28,247)
34	.42061 57706 25765 00314 25079 486	
2635	.42078 06195 48565 41299 31350 997	
36	.42094 54059 21972 25170 79623 965	
37	.42111 01297 93434 33083 38143 191	
38	.42127 47912 10346 49170 27417 984	
39	.42143 93902 20049 68725 15681 795	
2640	.42160 39268 69831 06368 64445 587	
41	.42176 84012 06924 04199 27666 781	
42	.42193 28132 78508 39929 08046 302	
43	.42209 71631 31710 35003 73956 927	
44	.42226 14508 13602 62707 40496 871	
2645	.42242 56763 71204 56252 18153 298	
46	.42258 98398 51482 16852 32551 217	
47	.42275 39413 01348 21783 18754 042	(95,247)
48	.42291 79807 67662 32424 93572 915	
49	.42308 19582 97231 02291 09332 766	

N	logarithm	ref
2650	.42324 58739 36807 85041 92533 969	
51	.42340 97277 33093 42482 70839 377	
52	.42357 35197 32735 52546 91807 450	
53	.42373 72499 82329 17264 36783 180	
54	.42390 09185 28416 70714 33349 511	
2655	.42406 45254 17487 86963 69732 963	
56	.42422 80706 95979 87990 14548 256	
57	.42439 15544 10277 51590 45257 780	(298)
58	.42455 49766 06713 19273 88712 877	
59	.42471 83373 31567 04140 77135 040	(299)
2660	.42488 16366 31066 98746 22886 291	
61	.42504 48745 51388 82949 15369 182	
62	.42520 80511 38656 31746 43388 085	
63	.42537 11664 38941 23092 46294 679	(298,9)
64	.42553 42204 98263 45703 97231 802	
2665	.42569 72133 62591 06850 21781 132	
66	.42586 01450 77840 40128 55311 481	
67	.42602 30156 89876 13225 42315 837	
68	.42618 58252 44511 35662 81016 647	
69	.42634 85737 87507 66530 16510 242	
2670	.42651 12613 64575 22201 85712 730	
71	.42667 38880 21372 84040 17361 112	(299)
72	.42683 64538 03508 06083 90314 888	
73	.42699 89587 56537 22722 53394 875	
74	.42716 14029 25965 56356 09987 516	

N	logarithm	ref
2675	.42732 37863 57247 25040 70634 500	(300)
76	.42748 61090 95785 50119 76819 089	
77	.42764 83711 86932 63840 99152 144	
78	.42781 05726 75990 16959 13152 472	
79	.42797 27136 08208 86324 55807 785	
2680	.42813 47940 28788 82457 66094 187	(300)
81	.42829 68139 82879 57109 12623 881	
82	.42845 87735 15580 10806 11582 439	
83	.42862 06726 71939 00384 38108 778	
84	.42878 25114 96954 46506 34262 744	
2685	.42894 42900 35574 41165 16717 003	(300,1)
86	.42910 60083 32696 55174 87301 755	
87	.42926 76664 33168 45646 49522 668	
88	.42942 92643 81787 63450 34164 249	
89	.42959 08022 23301 60664 37082 823	
2690	.42975 22800 02407 98008 72285 159	(116,247)
91	.42991 36977 63754 52266 43380 767	
92	.43007 50555 51939 23690 36487 843	
93	.43023 63534 11510 43396 37664 818	
94	.43039 75913 86966 80742 77931 517	
2695	.43055 87695 22757 50696 08935 937	(280)
96	.43071 98878 63282 21183 12314 744	
97	.43088 09464 52891 20429 45787 663	
98	.43104 19453 35885 44284 29018 055	
99	.43120 28845 56516 63531 72264 087	

N	logarithm	ref
2700	.43136 37641 58987 31188 50837 098	
01	.43152 45841 87450 89788 28375 900	
02	.43168 53446 86011 78652 31937 997	
03	.43184 60456 98725 41146 81900 892	
04	.43200 66872 69598 31926 79658 948	
2705	.43216 72694 42588 24166 56093 492	
06	.43232 77922 61604 16776 83786 192	
07	.43248 82557 70506 41608 55938 024	(207,8)
08	.43264 86600 13106 70643 34948 497	
09	.43280 90050 33168 23170 73602 183	
2710	.43296 92908 74405 72952 11801 949	
11	.43312 95175 80485 55371 51780 739	(93,105)
12	.43328 96851 95025 74573 14716 160	
13	.43344 97937 61596 10585 81664 578	(301,2)
14	.43360 98433 23718 26434 21723 915	
2715	.43376 98339 24865 75237 10326 849	
16	.43392 97656 08464 07292 40558 597	
17	.43408 96384 17890 77149 30386 049	
18	.43424 94523 96475 50667 28677 566	
19	.43440 92075 87500 12062 22885 323	(302)
2720	.43456 89040 34198 70939 51254 732	
21	.43472 85417 79757 69314 22418 048	
22	.43488 81208 67315 88618 45221 973	
23	.43504 76413 39964 56695 71631 703	
24	.43520 71032 40747 54782 55546 575	

N	logarithm	ref
2725	.43536 65066 12661 24477 30355 182	(282)
26	.43552 58514 98654 74696 08050 571	
27	.43568 51379 41629 88616 02718 880	
28	.43584 43659 84441 30605 81207 555	
29	.43600 35356 69896 53143 43772 114	
2730	.43616 26470 40756 03721 37493 198	(302)
31	.43632 17001 39733 31739 05248 537	
32	.43648 06950 09494 95382 73017 305	
33	.43663 96316 92660 68492 78287 210	
34	.43679 85102 31803 47418 42327 604	
2735	.43695 73306 69449 57859 89084 778	
36	.43711 60930 48078 61698 13448 612	
37	.43727 47974 10123 63812 01632 652	
38	.43743 34437 97971 18883 06402 738	
39	.43759 20322 53961 38187 79882 265	
2740	.43775 05628 20387 96377 66655 218	(303)
41	.43790 90355 39498 38246 59881 162	
42	.43806 74504 53493 85486 23129 432	
43	.43822 58076 04529 43428 80632 879	
44	.43838 41070 34714 07777 78654 600	
2745	.43854 23487 86110 71326 20654 255	(262)
46	.43870 05329 00736 30662 78933 695	
47	.43885 86594 20561 92865 85434 792	
48	.43901 67283 87512 82185 04355 582	
49	.43917 47398 43468 46710 89244 012	

N	logarithm	ref
2750	.43933 26938 30262 65032 27221 818	(53)
51	.43949 05903 89683 52881 72984 325	
52	.43964 84295 63473 69768 75215 216	
53	.43980 62113 93330 25600 98048 596	
54	.43996 39359 20904 87293 40204 021	
2755	.44012 16031 87803 85365 54413 440	
56	.44027 92132 35588 20526 69752 390	
57	.44043 67661 05773 70249 19481 118	
58	.44059 42618 39830 95329 76994 710	
59	.44075 17004 79185 46439 02474 698	
2760	.44090 90820 65217 70659 02828 050	
61	.44106 64066 39263 18009 07492 879	
62	.44122 36742 42612 47959 62683 691	
63	.44138 08849 16511 35934 46642 430	
64	.44153 80387 02160 79801 08455 138	
2765	.44169 51356 40717 06349 32987 503	(303)
66	.44185 21757 73291 77758 34486 165	
67	.44200 91591 40951 98051 81386 140	
68	.44216 60857 84720 19541 54858 377	
69	.44232 29557 45574 49259 43624 962	
2770	.44247 97690 64448 55377 77563 196	
71	.44263 65257 82231 73618 02613 303	
72	.44279 32259 39769 13647 99498 258	
73	.44294 98695 77861 65467 48757 840	
74	.44310 64567 37266 05782 44592 710	

N	logarithm	ref
2775	.44326 29874 58695 04367 60008 033	(113,283,247)
76	.44341 94617 82817 30417 65739 874	
77	.44357 58797 50257 58887 05441 317	
78	.44373 22414 01596 76818 29599 064	
79	.44388 85467 77371 89658 90644 993	
2780	.44404 47959 18076 27567 01720 970	
81	.44420 09888 64159 51705 61549 043	
82	.44435 71256 56027 60525 47852 921	
83	.44451 32063 34042 96036 81770 547	
84	.44466 92309 38524 50069 65691 398	
2785	.44482 51995 09747 70522 96946 042	(304)
86	.44498 11120 87944 67602 59769 377	
87	.44513 69687 13304 20047 97952 911	
88	.44529 27694 25971 81347 70595 337	
89	.44544 85142 66049 85943 93354 662	
2790	.44560 42032 73597 55425 67599 066	(184,5)
91	.44575 98364 88631 04710 99847 704	
92	.44591 54139 51123 48218 13886 613	
93	.44607 09357 01005 06025 57938 962	
94	.44622 64017 78163 10021 09262 878	
2795	.44638 18122 22442 10039 78544 164	(260)
96	.44653 71670 73643 79991 16445 282	
97	.44669 24663 71527 23975 24666 061	
98	.44684 77101 55808 82387 73865 723	
99	.44700 28984 66162 38014 30789 898	

N	logarithm	ref
2800	.44715 80313 42219 22113 96940 480	(304)
01	.44731 31088 23568 20491 61120 316	
02	.44746 81309 49755 79559 68178 878	
03	.44762 30977 60286 12389 06279 290	
04	.44777 80092 94621 04749 15001 267	
2805	.44793 28655 92180 21137 16588 741	(299)
06	.44808 76666 92341 10796 72645 207	
07	.44824 24126 34439 13725 68574 067	
08	.44839 71034 57767 66673 28055 519	
09	.44855 17392 01578 09126 59845 833	
2810	.44870 63199 05079 89286 39179 163	(306)
11	.44886 08456 07440 70032 26046 354	
12	.44901 53163 47786 34877 22619 547	
13	.44916 97321 65200 93911 72085 746	
14	.44932 40930 98726 89737 01146 858	
2815	.44947 83991 87365 03388 08438 130	(306)
16	.44963 26504 70074 60246 01111 290	
17	.44978 68469 85773 35939 81823 114	
18	.44994 09887 73337 62237 88364 588	
19	.45009 50758 71602 32928 88160 278	
2820	.45024 91083 19361 09692 29861 974	(306)
21	.45040 30861 55366 27958 54255 167	
22	.45055 70094 18329 02758 66691 411	
23	.45071 08781 46919 34563 73254 138	
24	.45086 46923 79766 15113 82860 001	

(14)

N	logarithm	ref
2825	.45101 84521 55457 33236 77492 392	
26	.45117 21575 12539 80656 52758 311	
27	.45132 58084 89519 57791 30954 372	
28	.45147 94051 24861 79541 48822 263	
29	.45163 29474 56990 81067 22168 655	
2830	.45178 64355 24290 23555 89519 106	
31	.45193 98693 65102 99979 36970 184	
32	.45209 32490 17731 40841 06398 667	
33	.45224 65745 20437 19912 89181 341	(292)
34	.45239 98459 11441 59962 07573 603	
2835	.45255 30632 28925 38467 85889 769	
36	.45270 62265 11028 93328 13622 692	
37	.45285 93357 95852 28556 02635 029	(307)
38	.45301 23911 21455 19966 40549 225	
39	.45316 53925 25857 20852 42458 042	
2840	.45331 83400 47037 67652 03072 245	
41	.45347 12337 22935 85604 51416 792	
42	.45362 40735 91450 94397 10181 749	
43	.45377 68596 90442 13801 61828 891	(308)
44	.45392 95920 57728 69301 23549 824	
2845	.45408 22707 31089 97707 33166 293	
46	.45423 48957 48265 52766 48058 182	
47	.45438 74671 46955 10757 59199 617	
48	.45453 99849 64818 76079 22378 433	
49	.45469 24492 39476 86827 08669 194	

N	logarithm	ref
2850	.45484 48600 08510 20361 76224 843	(255)
51	.45499 72173 09459 98866 65447 024	
52	.45514 95211 79827 94896 19590 018	
53	.45530 17716 57076 36914 32848 229	
54	.45545 39687 78628 14823 27972 101	
2855	.45560 61125 81866 85482 65452 353	(308)
56	.45575 82031 04136 78218 86307 403	
57	.45591 02403 82743 00324 90503 871	
58	.45606 22244 54951 42550 53035 079	
59	.45621 41553 57988 84582 79677 510	
2860	.45636 60331 29043 00517 04440 239	(308)
61	.45651 78578 05262 64318 30717 415	
62	.45666 96294 23757 55273 18148 961	
63	.45682 13480 21598 63432 17189 763	
64	.45697 30136 35817 95042 53382 707	
2865	.45712 46263 03408 77971 63326 068	
66	.45727 61860 61325 67120 84320 891	
67	.45742 76929 46484 49829 99679 132	
68	.45757 91469 95762 51272 41668 529	
69	.45773 05482 45998 39840 54065 311	
2870	.45788 18967 33992 32522 16281 086	
71	.45803 31924 96506 00267 31025 407	
72	.45818 44355 70262 73345 77460 786	
73	.45833 56259 91947 46695 31802 102	
74	.45848 67637 98206 85260 57307 649	

N	logarithm	ref
2875	.45863 78490 25649 29322 65604 281	(309)
76	.45878 88817 10844 99819 51284 408	
77	.45893 98618 90326 03657 01707 890	
78	.45909 07896 00586 39010 83937 128	
79	.45924 16648 78082 00619 10729 033	
2880	.45939 24877 59230 85065 87502 801	(309)
81	.45954 32582 80412 96055 42197 825	
82	.45969 39764 77970 49677 39931 367	
83	.45984 46423 88207 79662 84361 035	
84	.45999 52560 47391 42631 07652 426	
2885	.46014 58174 91750 23327 50947 728	(309)
86	.46029 63267 57475 39852 37226 455	
87	.46044 67838 80720 48880 38444 903	
88	.46059 71888 97601 50871 38836 357	
89	.46074 75418 44196 95271 96249 492	
2890	.46089 78427 56547 85708 03397 887	(309)
91	.46104 80916 70657 85168 50889 017	
92	.46119 82886 22493 21179 93896 592	
93	.46134 84336 47982 90972 24335 551	
94	.46149 85267 83018 66635 50394 591	
2895	.46164 85680 63455 00267 85276 549	(310)
96	.46179 85575 25109 29114 46992 553	
97	.46194 84952 03761 80697 71051 339	
98	.46209 83811 35155 77938 37880 721	
99	.46224 82153 54997 44268 16813 742	

N	logarithm	ref
2900	.46239 79978 98956 08733 28467 630	(311)
01	.46254 77288 02664 11089 27339 244	
02	.46269 74081 01717 06887 06436 328	
03	.46284 70358 31673 72550 25759 466	
04	.46299 66120 28056 10443 66445 299	
2905	.46314 61367 26349 53933 12377 159	(311)
06	.46329 56099 62002 72436 61064 951	
07	.46344 50317 70427 76466 65591 766	
08	.46359 44021 87000 22664 09420 381	
09	.46374 37212 47059 18823 15848 482	
2910	.46389 29889 85907 28907 93897 149	
11	.46404 22054 38810 78060 22412 850	
12	.46419 13706 40999 57598 74158 902	
13	.46434 04846 27667 30009 81668 098	
14	.46448 95474 33971 33929 46623 943	
2915	.46463 85590 95032 89116 94533 681	(311)
16	.46478 75196 45937 01419 76452 090	
17	.46493 64291 21732 67730 19510 764	
18	.46508 52875 57432 80933 28003 435	
19	.46523 40949 88014 34846 36773 642	
2920	.46538 28514 48418 29150 18646 899	
21	.46553 15569 73549 74311 47645 341	
22	.46568 02115 98277 96497 19718 624	
23	.46582 88153 57436 42480 32720 760	
24	.46597 73682 85822 84537 27358 370	

N	logarithm	ref
2925	.46612 58704 18199 25336 90831 750	(312)
26	.46627 43217 89292 02821 24886 003	
27	.46642 27224 33791 95077 79985 391	
28	.46657 10723 86354 25203 57319 959	
29	.46671 93716 81598 66160 80349 412	
2930	.46686 76203 54109 45624 37585 126	(312)
31	.46701 58184 38435 50820 98307 143	
32	.46716 39659 69090 33360 02908 920	
33	.46731 20629 80552 14056 29558 580	
34	.46746 01095 07263 87744 38861 372	
2935	.46760 81055 83633 28084 98204 039	(312)
36	.46775 60512 44032 92362 87457 772	
37	.46790 39465 22800 26276 87712 442	
38	.46805 17914 54237 68721 54710 813	
39	.46819 95860 72612 56560 78647 458	
2940	.46834 73304 12157 29393 31993 152	(312)
41	.46849 50245 07069 34310 07001 531	
42	.46864 26683 91511 30643 44550 911	
43	.46879 02620 99610 94708 55970 174	
44	.46893 78056 65461 24536 39493 753	
2945	.46908 52991 23120 44598 92986 812	(312)
46	.46923 27425 06612 10526 24577 815	
47	.46938 01358 49925 13815 62831 820	
48	.46952 74791 87013 86532 68093 899	
49	.46967 47725 51798 06004 46628 280	

N	logarithm	ref
2950	.46982 20159 78162 99504 69174 898	(313)
51	.46996 92094 99959 48930 95541 227	
52	.47011 63531 51003 95474 06843 407	
53	.47026 34469 65078 44279 47006 868	
54	.47041 04909 75930 69100 75132 832	
2955	.47055 74852 17274 16945 30333 262	(254)
56	.47070 44297 22788 12712 10633 037	
57	.47085 13245 26117 63821 67534 351	
58	.47099 81696 60873 64838 17834 553	
59	.47114 49651 60633 02083 74284 871	
2960	.47129 17110 58938 58244 96673 737	(31,373)
61	.47143 84073 89299 16971 64914 646	
62	.47158 50541 85189 67467 75714 781	
63	.47173 16514 80051 09074 64396 903	
64	.47187 81993 07290 55846 53443 264	
2965	.47202 46977 00281 41118 29326 651	(313)
66	.47217 11466 92363 22065 49189 913	
67	.47231 75463 16841 84256 78931 687	
68	.47246 38966 06989 46198 64252 344	
69	.47261 01975 96044 63872 36210 499	
2970	.47275 64493 17212 35263 52836 810	(261)
71	.47290 26518 03664 04883 78348 112	
72	.47304 88050 88537 68285 01501 307	
73	.47319 49092 04937 76565 94622 821	
74	.47334 09641 85935 40871 14845 801	

N	logarithm	ref
2975	.47348 69700 64568 36882 49083 635	
76	.47363 29268 73841 09303 04264 770	
77	.47377 88346 46724 76333 44350 235	
78	.47392 46934 16157 34140 75651 671	
79	.47407 05032 15043 61319 81964 139	
2980	.47421 62640 76255 23347 11024 374	
81	.47436 19760 32630 77027 13801 661	
82	.47450 76391 16975 74931 38124 916	
83	.47465 32533 62062 69829 78146 057	
84	.47479 88188 00631 19114 81136 229	
2985	.47494 43354 65387 89218 13107 930	
86	.47508 98033 89006 60019 84752 576	
87	.47523 52226 04128 29250 39179 575	
88	.47538 05931 43361 16885 02939 480	
89	.47552 59150 39280 69531 01810 309	
2990	.47567 11883 24429 64807 42822 702	
91	.47581 64130 31318 15717 63996 061	
92	.47596 15891 92423 75014 53254 445	
93	.47610 67168 40191 39558 37987 504	
94	.47625 17960 07033 54667 46718 340	
2995	.47639 68267 25330 18461 44336 744	
96	.47654 18090 27428 86197 42352 875	
97	.47668 67429 45644 74598 85623 026	
98	.47683 16285 12260 66177 16995 734	
99	.47697 64657 59527 13546 21323 131	(39)

N	logarithm	ref
3000	.47712 12547 19662 43729 50279 033	(39)
01	.47726 59954 24852 62460 29421 913	
02	.47741 06879 07251 58474 48937 570	
03	.47755 53321 98981 07796 39492 910	
04	.47769 99283 32130 78017 34628 987	
3005	.47784 44763 38758 32567 21118 053	
06	.47798 89762 50889 34978 78706 112	
07	.47813 34281 00517 53145 10659 118	
08	.47827 78319 19604 63569 66527 678	
09	.47842 21877 40080 55609 58541 821	
3010	.47856 64955 93843 35711 73044 118	(124,248)
11	.47871 07555 12759 31641 78366 154	
12	.47885 49675 28662 96706 30550 094	
13	.47899 91316 73357 13967 78313 829	
14	.47914 32479 78613 00452 68654 931	
3015	.47928 73164 76170 11352 54485 410	(304,5)
16	.47943 13371 97736 44218 05686 051	
17	.47957 53101 74988 43146 24965 848	
18	.47971 92354 39571 02960 69908 883	
19	.47986 31130 23097 73384 82587 756	
3020	.48000 69429 57150 63208 28119 501	(314)
21	.48015 07252 73280 44446 43536 706	
22	.48029 44600 03006 56492 98343 418	
23	.48043 81471 77817 10265 68122 184	
24	.48058 17868 29168 92345 22555 473	

(15)

N	logarithm	ref
3025	.48072 53789 88487 69107 29221 530	
26	.48086 89236 87167 90847 74521 588	
27	.48101 24209 56572 95901 03092 198	
28	.48115 58708 28035 14751 77053 357	
29	.48129 92733 32855 74139 56439 934	
3030	.48144 26285 02305 01157 02160 815	
31	.48158 59363 67622 27341 02827 083	
32	.48172 91969 60015 92757 26787 436	
33	.48187 24103 10663 50078 00705 967	
34	.48201 55764 50711 68653 16014 342	
3035	.48215 86954 11276 38574 64567 357	
36	.48230 17672 23442 74734 04827 762	
37	.48244 47919 18265 20873 59903 209	(314)
38	.48258 77695 26767 53630 48755 120	
39	.48273 07000 79942 86574 51896 233	
3040	.48287 35836 08753 74239 12890 547	
41	.48301 64201 44132 16145 76966 372	(315)
42	.48315 92097 16979 60821 68050 171	
43	.48330 19523 58167 09811 05525 861	
44	.48344 46480 98535 21679 62021 250	
3045	.48358 72969 68894 16012 63520 301	
46	.48372 98990 00023 77406 33096 907	
47	.48387 24542 22673 59452 79562 908	
48	.48401 49626 67562 88718 32320 093	
49	.48415 74243 65380 68715 23702 975	(317)

N	logarithm	ref
3050	.48429 98393 46785 83867 20096 190	
51	.48444 22076 42407 03468 03107 384	
52	.48458 45292 82842 85634 02073 557	
53	.48472 68042 98661 81249 79175 883	
54	.48486 90327 20402 37907 68435 095	
3055	.48501 12145 78573 03840 69856 627	
56	.48515 33499 03652 31848 99991 772	
57	.48529 54387 26088 83220 00178 256	
58	.48543 74810 76301 31642 03720 683	
59	.48557 94769 84678 67111 63268 466	
3060	.48572 14264 81579 99834 39645 956	
61	.48586 33295 97334 64119 53386 620	(317)
62	.48600 51863 62242 22268 00220 260	
63	.48614 69968 06572 68454 31759 402	
64	.48628 87609 60566 32602 02628 137	
3065	.48643 04788 54433 84252 85273 867	
66	.48657 21505 18356 36429 53699 570	
67	.48671 37759 82485 49492 37351 359	(81,249)
68	.48685 53552 76943 34989 46393 319	
69	.48699 68884 31822 59500 69598 779	
3070	.48713 83754 77186 48475 46084 365	
71	.48727 98164 43068 90064 12110 416	
72	.48742 12113 59474 38943 24168 505	
73	.48756 25602 56378 20134 59574 092	
74	.48770 38631 63726 32817 95779 493	

N	logarithm	ref
3075	.48784 51201 11435 54137 69619 638	(317)
76	.48798 63311 29393 43003 17700 294	
77	.48812 74962 47458 43882 99135 707	
78	.48826 86154 95459 90593 01839 835	
79	.48840 96889 03198 10078 33572 645	
3080	.48855 07165 00444 26188 98940 193	(318)
81	.48869 16983 16940 63449 63544 477	
82	.48883 26343 82400 50823 06476 362	
83	.48897 35247 26508 25467 62342 138	
84	.48911 43693 78919 36488 54011 586	
3085	.48925 51683 69260 48683 17272 726	(62,249)
86	.48939 59217 27129 46280 18575 731	
87	.48953 66294 82095 36672 67045 823	
88	.48967 72916 63698 54145 21942 253	
89	.48981 79083 01450 63594 96737 858	
3090	.48995 84794 24834 64246 60990 978	
91	.49009 90050 63304 93361 41178 875	
92	.49023 94852 46287 29940 21659 166	
93	.49037 99200 03178 98420 46923 123	
94	.49052 03093 63348 72367 26302 056	
3095	.49066 06533 56136 78158 42285 397	
96	.49080 09520 10854 98663 63606 439	
97	.49094 12053 56786 76917 64249 117	
98	.49108 14134 23187 19787 49526 570	
99	.49122 15762 39283 01633 90379 660	

N	logarithm	ref
3100	.49136 16938 34272 67966 67041 001	
01	.49150 17662 37326 39094 23207 483	
02	.49164 17934 77586 13767 31861 687	
03	.49178 17755 84165 72816 73880 024	
04	.49192 17125 86150 82785 30562 853	
3105	.49206 16045 12598 99553 91219 273	
06	.49220 14513 92539 71961 76936 753	
07	.49234 12532 54974 45420 81663 181	
08	.49248 10101 28876 65524 31726 408	
09	.49262 07220 43191 81649 64913 805	(319)
3110	.49276 03890 26837 50555 30231 833	
11	.49290 00111 08703 39972 09463 113	
12	.49303 95883 17651 32188 61635 959	
13	.49317 91206 82515 27630 91518 818	
14	.49331 86082 32101 48436 43249 600	
3115	.49345 80509 95188 42022 20207 336	
16	.49359 74490 00526 84647 32231 152	
17	.49373 68022 76839 84969 71289 046	
18	.49387 61108 52822 87597 16696 486	
19	.49401 53747 57143 76632 70982 372	(322)
3120	.49415 45940 18442 79214 27497 454	
21	.49429 37686 65332 69048 70857 829	(323)
22	.49443 28987 26398 69940 11313 696	
23	.49457 19842 30198 59312 54131 097	
24	.49471 10252 05262 71727 05071 957	

N	logarithm	ref
3125	.49485 00216 80094 02393 13055 264	(323)
26	.49498 89736 83168 10674 51079 846	
27	.49512 78812 42933 23589 36486 762	
28	.49526 67443 87810 39304 91636 908	
29	.49540 55631 46193 30626 46077 045	
3130	.49554 43375 46448 48480 81265 049	
31	.49568 30676 16915 25394 18922 783	
32	.49582 17533 85905 78964 54082 622	
33	.49596 03948 81705 15328 33891 244	
34	.49609 89921 32571 32621 83231 976	
3135	.49623 75451 66735 24436 78224 555	
36	.49637 60540 12400 83270 68658 855	
37	.49651 45186 97745 03971 50416 725	
38	.49665 29392 50917 87176 88933 769	
39	.49679 13157 00042 42747 94750 537	
3140	.49692 96480 73214 93197 52200 246	
41	.49706 79363 98504 77113 02277 837	
42	.49720 61807 03954 52573 80732 829	
43	.49734 43810 17580 00563 12426 123	
44	.49748 25373 67370 28374 62988 581	
3145	.49762 06497 81287 73013 48816 891	
46	.49775 87182 87268 04592 06439 952	
47	.49789 67429 13220 29720 22286 672	
48	.49803 47236 87026 94890 23883 825	
49	.49817 26606 36543 89856 33510 287	

N	logarithm	ref
3150	.49831 05537 89600 51008 85331 704	
51	.49844 84031 73999 64743 07037 394	
52	.49858 62088 17517 70822 66998 966	
53	.49872 39707 47904 65737 87967 924	
54	.49886 16889 92884 06058 28327 225	
3155	.49899 93635 80153 11780 31909 553	
56	.49913 69945 37382 69669 47392 766	
57	.49927 45818 92217 36597 18280 798	
58	.49941 21256 72275 42872 44476 004	
59	.49954 96259 05148 95568 16446 742	
3160	.49968 70826 18403 81842 22991 759	
61	.49982 44958 39579 72253 33600 706	
62	.49996 18655 96190 24071 56407 924	
63	.50009 91919 15722 84583 72734 424	(269)
64	.50023 64748 25638 94393 49210 767	
3165	.50037 37143 53373 90716 28471 385	
66	.50051 09105 26337 10668 99408 670	
67	.50064 80633 71911 94554 47972 976	(323)
68	.50078 51729 17455 89140 89502 514	
69	.50092 22391 90300 50935 83564 924	(324)
3170	.50105 92622 17751 49455 32290 164	
71	.50119 62420 27088 70487 63172 172	
72	.50133 31786 45566 19351 97314 611	
73	.50147 00721 00412 24152 04093 857	
74	.50160 69224 18829 39024 43210 225	

N	logarithm	ref
3175	.50174 37296 27994 47381 95096 324	
76	.50188 04937 55058 65151 80649 248	
77	.50201 72148 27147 44008 71251 225	
78	.50215 38928 71360 74602 90041 181	
79	.50229 05279 14772 89783 05397 599	
3180	.50242 71199 84432 67814 17590 896	
81	.50256 36691 07363 35590 39561 460	(324)
82	.50270 01753 10562 71842 72777 375	
83	.50283 66386 21003 10341 79123 772	
84	.50297 30590 65631 43095 49773 633	
3185	.50310 94366 71369 23541 71987 804	
86	.50324 57714 65112 69735 94789 890	
87	.50338 20634 73732 67533 94459 615	(266)
88	.50351 83127 24074 73769 40786 167	
89	.50365 45192 42959 19426 65020 979	
3190	.50379 06830 57181 12808 30467 342	
91	.50392 68041 93510 42698 06642 172	(325)
92	.50406 28826 78691 81518 47943 218	
93	.50419 89185 39444 88483 77752 947	
94	.50433 49118 02464 12747 78908 300	
3195	.50447 08624 94418 96546 91463 468	
96	.50460 67706 41953 78338 18670 832	
97	.50474 26362 71687 95932 42103 146	
98	.50487 84594 10215 89622 46838 059	
99	.50501 42400 84107 05306 57624 038	

N	logarithm	ref
3200	.50514 99783 19905 97606 86944 736	(255)
01	.50528 56741 44132 32982 95896 862	
02	.50542 13275 83280 92840 68794 593	
03	.50555 69386 63821 76636 02411 589	
04	.50569 25074 12200 04974 10769 657	
3205	.50582 80338 54836 22703 46381 149	(293)
06	.50596 35180 18126 02005 38850 188	
07	.50609 89599 28440 45478 51735 831	
08	.50623 43596 12125 89218 58578 323	
09	.50636 97170 95504 05893 38987 625	
3210	.50650 50324 04872 07812 95691 427	
11	.50664 03055 66502 49994 93437 916	
12	.50677 55366 06643 33225 20646 612	
13	.50691 07255 51518 07113 74698 627	
14	.50704 58724 27325 73145 71755 791	
3215	.50718 09772 60240 87727 81996 107	(325)
16	.50731 60400 76413 65229 91151 114	
17	.50745 10609 01969 81021 89228 762	
18	.50758 60397 63010 74505 87303 531	
19	.50772 09766 85613 52143 63253 558	
3220	.50785 58716 95830 90479 37322 656	(325)
21	.50799 07248 19691 39157 78383 200	
22	.50812 55360 83199 23937 41773 930	
23	.50826 03055 12334 49699 39584 838	
24	.50839 50331 33053 03451 44259 422	

(16)

N	logarithm	ref
3225	.50852 97189 71286 57327 26382 670	(259)
26	.50866 43630 52942 71581 27521 287	
27	.50879 89654 03904 97578 68980 771	
28	.50893 35260 50032 80780 97342 086	
29	.50906 80450 17161 63726 67638 801	
3230	.50920 25223 31102 89007 65033 701	
31	.50933 69580 17644 02240 65852 009	
32	.50947 13521 02548 55034 38826 518	
33	.50960 57046 11556 07951 87408 054	
34	.50974 00155 70382 33468 33992 864	
3235	.50987 42850 04719 18924 46916 681	
36	.51000 85129 40234 69475 11063 353	
37	.51014 26994 02573 11033 42934 132	
38	.51027 68444 17354 93210 51021 842	
39	.51041 09480 10176 92250 42332 364	
3240	.51054 50102 06612 13960 75894 025	
41	.51067 90310 32209 96638 64093 670	
42	.51081 30105 12496 13992 22676 406	
43	.51094 69486 72972 78057 70244 150	
44	.51108 08455 39118 42111 78086 378	
3245	.51121 47011 36388 03579 71174 611	
46	.51134 85154 90213 06938 81150 419	
47	.51148 22886 26001 46617 52134 926	
48	.51161 60205 69137 69890 00186 005	
49	.51174 97113 44982 79766 27227 580	

N	logarithm	ref
3250	.51188 33609 78874 37877 90273 685	
51	.51201 69694 96126 67359 26768 127	(204,5)
52	.51215 05369 22030 55724 36858 876	
53	.51228 40632 81853 57739 23424 508	(41,249)
54	.51241 75486 00839 98289 90668 281	
3255	.51255 09929 04210 75246 02093 672	
56	.51268 43962 17163 62319 98673 450	
57	.51281 77585 64873 11921 78022 611	(326)
58	.51295 10799 72490 58009 35383 776	
59	.51308 43604 65144 18934 67231 883	(326)
3260	.51321 76000 67939 00285 38303 307	
61	.51335 07988 05956 97722 12852 796	
62	.51348 39567 04256 99811 50939 888	
63	.51361 70737 87874 90854 70544 746	
64	.51375 01500 81823 53711 76311 659	
3265	.51388 31856 11092 72621 55716 707	
66	.51401 61804 00649 36017 43454 420	
67	.51414 91344 75437 39338 54836 523	
68	.51428 20478 60377 87836 88994 184	
69	.51441 49205 80368 99380 02673 484	
3270	.51454 77526 60286 07249 55412 109	
71	.51468 05441 24981 62935 26883 633	(327)
72	.51481 32949 99285 38925 07194 019	
73	.51494 60053 08004 31490 60913 326	
74	.51507 86750 75922 63468 65623 918	

N	logarithm	ref
3275	.51521 13043 27801 87038 25764 812	
76	.51534 38930 88380 86493 62550 125	
77	.51547 64413 82375 81012 80737 916	
78	.51560 89492 34480 27422 13024 086	
79	.51574 14166 69365 22956 42834 309	
3280	.51587 38437 11679 08015 06285 341	
81	.51600 62303 86047 68913 74085 407	
82	.51613 85767 17074 40632 14141 705	
83	.51627 08827 29340 09557 35641 464	
84	.51640 31484 47403 16223 15371 312	
3285	.51653 53738 95799 58045 07038 123	
86	.51666 75590 99042 92051 34352 865	
87	.51679 97040 81624 37609 68637 345	
88	.51693 18088 68012 79149 91712 145	
89	.51706 38734 82654 68882 44822 414	
3290	.51719 58979 49974 29512 64356 580	
91	.51732 78822 94373 56951 05111 438	
92	.51745 98265 40232 23019 51855 460	
93	.51759 17307 11907 78153 19940 592	
94	.51772 35948 33735 54098 45711 182	
3295	.51785 54189 30028 66606 67457 123	
96	.51798 72030 25078 18123 97656 682	
97	.51811 89471 43153 00476 87252 917	
98	.51825 06513 08499 97553 82706 007	
99	.51838 23155 45343 87982 76562 225	(109,250)

N	logarithm	ref
3300	.51851 39398 77887 47804 52278 745	(109,250)
01	.51864 55243 30311 53142 24041 872	
02	.51877 70689 26774 82866 72314 745	
03	.51890 85736 91414 21257 75848 995	
04	.51904 00386 48344 60661 40893 273	
3305	.51917 14638 21659 04143 28330 030	(327)
06	.51930 28492 35428 68137 79470 367	
07	.51943 41949 13702 85093 41235 239	
08	.51956 55008 80509 06113 91449 739	
09	.51969 67671 59853 03595 64975 671	
3310	.51982 79937 75718 73860 81406 073	(328)
11	.51995 91807 52068 39786 75043 831	
12	.52009 03281 12842 53431 27884 977	
13	.52022 14358 81959 98654 06325 780	
14	.52035 25040 83317 93734 02311 178	
3315	.52048 35327 40791 93982 79640 608	(328)
16	.52061 45218 78235 94354 26145 775	
17	.52074 54715 19482 32050 12453 396	
18	.52087 63816 88341 89121 58044 431	
19	.52100 72524 08603 95067 05319 844	
3320	.52113 80837 04036 29426 02381 415	(329)
21	.52126 88755 98385 24368 95234 630	
22	.52139 96281 15375 67283 30119 213	
23	.52153 03412 78711 03355 66671 341	
24	.52166 10151 12073 38150 02620 123	

N	logarithm	ref
3325	.52179 16496 39123 40182 10719 449	(330)
26	.52192 22448 83500 43489 88614 810	
27	.52205 28008 68822 50200 22343 255	
28	.52218 33176 18686 33091 64163 157	
29	.52231 37951 56667 38153 25409 004	
3330	.52244 42335 06319 87139 85064 960	(290)
31	.52257 46326 91176 80123 14749 511	
32	.52270 49927 34749 98039 20802 010	
33	.52283 53136 60530 05232 04160 527	
34	.52296 55954 91986 51993 38718 949	
3335	.52309 58382 52567 77098 68849 805	
36	.52322 60419 65701 10339 26777 897	
37	.52335 62066 54792 75050 70488 345	
38	.52348 63323 43227 90637 42851 224	
39	.52361 64190 54370 75093 52643 567	
3340	.52374 64668 11564 47519 78148 046	(329)
41	.52387 64756 38131 30636 94006 239	
42	.52400 64455 57372 53295 22002 969	
43	.52413 63765 92568 52980 06456 790	
44	.52426 62687 66978 78314 14890 259	
3345	.52439 61221 03841 91555 64652 248	(283)
46	.52452 59366 26375 71092 76163 135	
47	.52465 57123 57777 13934 53452 304	
48	.52478 54493 21222 38197 92655 993	
49	.52491 51475 39866 85591 19142 120	

N	logarithm	ref
3350	.52504 48070 36845 23893 53927 345	
51	.52517 44278 35271 49431 10050 210	
52	.52530 40099 58238 89549 19562 835	
53	.52543 35534 28820 05080 91802 256	
54	.52556 30582 70066 92812 03601 092	
3355	.52569 25245 05010 87942 22095 903	
56	.52582 19521 56662 66542 60790 163	
57	.52595 13412 48012 48009 69527 452	
58	.52608 06918 02029 97515 59029 074	
59	.52621 00038 41664 28454 60648 971	(330)
3360	.52633 92773 89844 04886 21997 407	
61	.52646 85124 69477 43974 39083 584	(331)
62	.52659 77091 03452 18423 25625 947	
63	.52672 68673 14635 58909 20177 635	
64	.52685 59871 25874 56509 31713 154	
3365	.52698 50685 59995 65126 24321 001	
66	.52711 41116 39805 03909 41645 668	
67	.52724 31163 88088 59672 71721 061	
68	.52737 20828 27611 89308 52836 076	
69	.52750 10109 81120 22198 21071 729	
3370	.52762 99008 71338 62619 00147 902	
71	.52775 87525 20971 92147 34216 449	(332)
72	.52788 75659 52704 72058 64236 090	
73	.52801 63411 89201 45723 48563 188	(276)
74	.52814 50782 53106 41000 28391 198	

N	logarithm	ref
3375	.52827 37771 67043 72624 38670 256	
76	.52840 24379 53617 44593 65137 088	
77	.52853 10606 35411 52550 48084 078	
78	.52865 96452 34989 86160 33495 057	
79	.52878 81917 74896 31486 72174 077	
3380	.52891 67002 77654 73362 67492 106	
81	.52904 51707 65768 97758 72375 327	
82	.52917 36032 61722 94147 36157 402	
83	.52930 19977 87980 57864 01916 787	
84	.52943 03543 66985 92464 54918 901	
3385	.52955 86730 21163 12079 22781 656	
86	.52968 69537 72916 43763 27981 597	
87	.52981 51966 44630 29843 93316 615	
88	.52994 34016 58669 30264 00939 905	
89	.53007 15688 37378 24922 05578 616	(218,9)
3390	.53019 96982 03082 16009 02549 319	
91	.53032 77897 78086 30341 51181 199	(332)
92	.53045 58435 84676 21691 54256 600	
93	.53058 38596 45117 73112 94077 274	
94	.53071 18379 81656 99264 25763 478	
3395	.53083 97786 16520 48728 28391 755	
96	.53096 76815 71915 06328 14576 033	
97	.53109 55468 70027 95439 99095 397	
98	.53122 33745 33026 80302 27170 673	
99	.53135 11645 83059 68321 62990 691	

N	logarithm	ref
3400	.53147 89170 42255 12375 39087 891	
01	.53160 66319 32722 13110 67161 675	
02	.53173 43092 76550 21240 10946 696	
03	.53186 19490 95809 39834 21722 020	
04	.53198 95514 12550 26610 37055 912	
3405	.53211 71162 48803 96218 43379 733	
06	.53224 46436 26582 22523 02983 234	
07	.53237 21335 67877 40882 46022 327	(333)
08	.53249 95860 94662 50424 28129 172	
09	.53262 70012 28891 16317 54213 230	
3410	.53275 43789 92497 72041 69040 714	
11	.53288 17194 07397 21652 15178 660	
12	.53300 90224 95485 42042 58888 657	
13	.53313 62882 78638 85203 84554 046	(334)
14	.53326 35167 78714 80479 58223 220	
3415	.53339 07080 17551 36818 60850 463	
16	.53351 78620 16967 45023 91814 565	
17	.53364 49787 98762 79998 43294 268	
18	.53377 20583 84718 02987 46078 404	
19	.53389 91007 96594 63817 87387 418	
3420	.53402 61060 56135 03134 01281 770	
21	.53415 30741 85062 54630 32231 545	
22	.53428 00052 05081 47280 72420 422	
23	.53440 68991 37877 07564 73355 978	
24	.53453 37560 05115 61690 32357 131	

(17)

N	logarithm	ref	
3425	.53466 05758 28444 37813 54488 377	(102,250)	
26	.53478 73586 29491 68254 90509 280		
27	.53491 41044 29866 91712 51406 549		
28	.53504 08132 51160 55472 00074 842		
29	.53516 74851 14944 17613 20711 316		
3430	.53529 41200 42770 49213 66487 758		
31	.53542 07180 56173 36548 86062 999		
32	.53554 72791 76667 83289 29497 166		
33	.53567 38034 25750 12694 34128 166		
34	.53580 02908 24897 69802 90969 673		
3435	.53592 67413 95569 23620 92188 741		
36	.53605 31551 59204 69305 60220 017		
37	.53617 95321 37225 30346 59072 421		
38	.53630 58723 51033 60743 88382 995		
39	.53643 21758 22013 47182 60771 522		
3440	.53655 84425 71530 11204 63048 374		
41	.53668 46726 20930 11377 01826 929		
42	.53681 08659 91541 45457 34090 768		
43	.53693 70227 04673 52555 83264 761		
44	.53706 31427 81617 15294 41338 013		
3445	.53718 92262 43644 61962 57585 548		(334)
46	.53731 52731 12009 68670 14434 488		
47	.53744 12834 07947 61496 91019 360		
48	.53756 72571 52675 18639 14970 104		
49	.53769 31943 67390 72553 02975 189		

N	logarithm	ref
3450	.53781 90950 73274 12094 90661 208	
51	.53794 49592 91486 84658 52329 159	
52	.53807 07870 43171 98309 11086 592	
53	.53819 65783 49454 23914 39913 647	
54	.53832 23332 31439 97272 54199 959	
3455	.53844 80517 10217 21236 96288 296	
56	.53857 37338 06855 67838 12559 728	
57	.53869 93795 42406 80402 23594 018	(334)
58	.53882 49889 37903 75666 87937 870	
59	.53895 05620 14361 45893 60012 576	
3460	.53907 60987 92776 60977 42691 535	
61	.53920 15992 94127 70553 35077 039	(335)
62	.53932 70635 39375 06099 76004 655	
63	.53945 24915 49460 83038 83802 463	(335)
64	.53957 78833 45309 02833 92831 339	
3465	.53970 32389 47825 55083 87331 416	
66	.53982 85583 77898 19614 33098 802	
67	.53995 38416 56396 68566 07515 544	(336)
68	.54007 90888 04172 68480 28454 814	
69	.54020 42998 42059 82380 82582 211	(336)
3470	.54032 94747 90873 71853 53573 032	
71	.54045 46136 71411 99122 50764 309	
72	.54057 97165 04454 29123 38759 376	
73	.54070 47833 10762 31573 68501 676	
74	.54082 98141 11079 83040 10333 476	

N	logarithm	ref
3475	.54095 48089 26132 69002 89554 129	
76	.54107 97677 76628 85917 24991 472	
77	.54120 46906 83258 43271 71098 928	
78	.54132 95776 66693 65643 64089 837	
79	.54145 44287 47588 94751 72619 522	
3480	.54157 92439 46580 91505 53524 557	
81	.54170 40232 84288 38052 13127 691	
82	.54182 87667 81312 39819 74615 856	
83	.54195 34744 58236 27558 51997 662	
84	.54207 81463 35625 59378 31145 766	
3485	.54220 27824 34028 22783 58428 496	
86	.54232 73827 73974 36705 37434 086	
87	.54245 19473 75976 53530 34289 876	
88	.54257 64762 60529 61126 92077 812	
89	.54270 09694 48110 84868 54846 590	
3490	.54282 54269 59179 89654 01719 772	
91	.54294 98488 14178 81924 91598 204	(287)
92	.54307 42350 33532 11680 18954 076	
93	.54319 85856 37646 74487 81212 946	
94	.54332 29006 46912 13493 58219 078	
3495	.54344 71800 81700 21427 04278 440	
96	.54357 14239 62365 42604 53272 722	
97	.54369 56323 09244 74929 37336 738	
98	.54381 98051 42657 71889 19590 608	
99	.54394 39424 82906 44550 41417 112	(90,251)

N	logarithm	ref
3500	.54406 80443 50275 63549 84773 639	
01	.54419 21107 65032 61083 50027 182	
02	.54431 61417 47427 32892 49799 836	
03	.54444 01373 17692 40246 19311 287	
04	.54456 40974 96043 11922 43703 826	
3505	.54468 80223 02677 46185 02834 425	
06	.54481 19117 57776 12758 34017 463	
07	.54493 57658 81502 54799 13200 718	
08	.54505 95846 94002 90865 55056 275	
09	.54518 33682 15406 16883 32467 055	
3510	.54530 71164 65824 08109 15888 677	
11	.54543 08294 65351 21091 33065 458	(257)
12	.54555 45072 34064 95627 49578 348	
13	.54567 81497 92025 56719 70701 687	
14	.54580 17571 59276 16526 65044 700	
3515	.54592 53293 55842 76313 10452 706	
16	.54604 88664 01734 28396 62642 053	
17	.54617 23683 16942 58091 47041 890	(59)
18	.54629 58351 21442 45649 74314 887	
19	.54641 92668 35191 68199 80028 131	
3520	.54654 26634 78131 01681 88944 449	
21	.54666 60250 70184 22781 04403 489	
22	.54678 93516 31258 10857 23260 966	
23	.54691 26431 81242 49872 76853 528	
24	.54703 58997 40010 30316 98455 789	

N	logarithm	ref
3525	.54715 91213 27417 51128 17695 133	
26	.54728 23079 63303 21612 82388 979	
27	.54740 54596 67489 63362 08268 280	(336)
28	.54752 85764 59782 12165 57050 079	
29	.54765 16583 59969 19922 43321 069	(337)
3530	.54777 47053 87822 56549 70693 160	
31	.54789 77175 63097 11887 97691 140	
32	.54802 06949 05530 97604 33831 628	
33	.54814 36374 34845 49092 66351 583	(92,251)
34	.54826 65451 70745 27371 18043 739	
3535	.54838 94181 32918 20977 36655 421	
36	.54851 22563 41035 47860 16306 312	
37	.54863 50598 14751 57269 51379 805	
38	.54875 78285 73704 31643 23341 715	
39	.54888 05626 37514 88491 20939 195	(337)
3540	.54900 32620 25787 82276 94231 825	
41	.54912 59267 58111 06296 42905 940	(338)
42	.54924 85568 54055 94554 39322 368	
43	.54937 11523 33177 23637 86746 881	
44	.54949 37132 15013 14587 13211 739	
3545	.54961 62395 19085 34764 01455 851	
46	.54973 87312 64898 99717 55390 190	
47	.54986 11884 71942 75047 03534 195	(338)
48	.54998 36111 59688 78262 39868 044	
49	.55010 59993 47592 80642 02544 777	

N	logarithm	ref
3550	.55022 83530 55094 09087 90905 403	
51	.55035 06723 01615 47978 21239 209	
52	.55047 29571 06563 41017 21730 664	
53	.55059 52074 89327 93082 67033 413	
54	.55071 74234 69282 72070 52910 983	
3555	.55083 96050 65785 10737 11382 983	
56	.55096 17522 98176 08538 66814 699	
57	.55108 38651 85780 33468 33387 119	(270)
58	.55120 59437 47906 23890 54383 578	
59	.55132 79880 03845 90372 83728 340	(339)
3560	.55144 99979 72875 17515 10211 592	
61	.55157 19736 74253 65776 24834 457	
62	.55169 39151 27224 73298 31706 798	
63	.55181 58223 51015 57728 02929 702	
64	.55193 76953 64837 18035 77893 737	
3565	.55205 95341 87884 36332 07423 176	
66	.55218 13388 39335 79681 43195 564	
67	.55230 31093 38354 01913 72865 162	
68	.55242 48457 04085 45433 01317 951	
69	.55254 65479 55660 43023 78485 053	
3570	.55266 82161 12193 19654 74140 562	
71	.55278 98501 92781 94280 00108 990	(339)
72	.55291 14502 16508 81637 80306 647	
73	.55303 30162 02439 94046 69040 472	
74	.55315 45481 69625 43199 17987 015	

N	logarithm	ref
3575	.55327 60461 37099 41952 92273 397	
76	.55339 75101 23880 06119 36081 301	
77	.55351 89401 48969 56249 88194 177	
78	.55364 03362 31354 19419 47907 068	
79	.55376 16983 90004 31007 91717 596	
3580	.55388 30266 43874 36478 41215 865	
81	.55400 43210 11902 93153 82590 203	(340)
82	.55412 55815 13012 71990 38164 857	
83	.55424 68081 66110 59348 90384 939	(305)
84	.55436 80009 90087 58763 58663 111	
3585	.55448 91600 03818 92708 29501 687	
86	.55461 02852 26164 04360 40303 019	
87	.55473 13766 75966 59362 17280 243	
88	.55485 24343 72054 47579 67879 629	
89	.55497 34583 33239 84859 28125 012	
3590	.55509 44485 78319 14781 65293 944	
91	.55521 54051 26073 10413 36334 441	
92	.55533 63279 95266 76056 02430 379	
93	.55545 72172 04649 48993 00122 810	(340)
94	.55557 80727 72955 01233 69393 671	
3595	.55569 88947 18901 41255 39117 567	
96	.55581 96830 61191 15742 70286 525	
97	.55594 04378 18511 11324 57411 821	
98	.55606 11590 09532 56308 88506 192	
99	.55618 18466 52911 22414 64048 983	

N	logarithm	ref
3600	.55630 25007 67287 26501 75335 960	
01	.55642 31213 71285 32298 42614 775	
02	.55654 37084 83514 52126 13406 269	
03	.55666 42621 22568 48622 21411 014	
04	.55678 47823 07025 36460 06399 754	
3605	.55690 52690 55447 84066 95485 584	
06	.55702 57223 86383 15339 46174 980	
07	.55714 61423 18363 11356 51593 974	(134,251)
08	.55726 65288 69904 12090 08285 054	
09	.55738 68820 59507 18113 46969 547	
3610	.55750 72019 05657 92307 26669 515	
11	.55762 74884 26826 61562 92582 421	
12	.55774 77416 41468 18483 98101 045	
13	.55786 79615 68022 23084 91370 390	(340)
14	.55798 81482 24913 04487 66772 550	
3615	.55810 83016 30549 62615 81729 750	
16	.55822 84218 03325 69886 39215 022	
17	.55834 85087 61619 72899 36359 222	(63)
18	.55846 85625 23794 94124 79542 337	
19	.55858 85831 08199 33587 66356 293	
3620	.55870 85705 33165 70550 34825 711	
21	.55882 85248 17011 65192 80272 326	
22	.55894 84459 78039 60290 40208 017	
23	.55906 83340 34536 82889 47640 684	(341)
24	.55918 81890 04775 45980 53176 428	

(18)

N	logarithm	ref
3625	.55930 80109 07012 50169 16300 788	
26	.55942 77997 59489 85344 66221 014	
27	.55954 75555 80434 32346 32650 646	
28	.55966 72783 88057 64627 46916 910	
29	.55978 69682 00556 49917 13770 740	
3630	.55990 66250 36112 51879 54278 457	
31	.56002 62489 12892 31771 20173 449	(342)
32	.56014 58398 49047 50095 80045 437	
33	.56026 53978 62714 68256 77744 206	
34	.56038 49229 72015 50207 63373 935	
3635	.56050 44151 95056 64099 97253 540	
36	.56062 38745 49929 83929 27217 742	
37	.56074 33010 54711 91178 39632 816	(342)
38	.56086 26947 27464 76458 84500 285	
39	.56098 20555 86235 41149 75021 090	
3640	.56110 13836 49055 99034 61992 060	
41	.56122 06789 33943 77935 83405 786	
42	.56133 99414 58901 21346 89624 284	
43	.56145 91712 41915 90062 44496 137	(318)
44	.56157 83683 00960 63806 02786 072	
3645	.56169 75326 53993 42855 64285 248	
46	.56181 66643 18957 49667 04969 793	
47	.56193 57633 13781 30494 85574 452	
48	.56205 48296 56378 57011 37947 474	
49	.56217 38633 64648 27923 29552 197	

N	logarithm	ref
3650	.56229 28644 56474 70586 06480 057	
51	.56241 18329 49727 42616 15339 071	
52	.56253 07688 62261 33501 04381 127	
53	.56264 96722 11916 66207 04230 742	
54	.56276 85430 16518 98784 88577 228	
3655	.56288 73812 93879 25973 15191 528	
56	.56300 61870 61793 80799 47628 294	
57	.56312 49603 38044 36179 57973 071	
58	.56324 37011 40398 06514 10993 794	
59	.56336 24094 86607 49283 30055 075	(343)
3660	.56348 10853 94410 66639 45153 117	
61	.56359 97288 81531 06997 23428 375	
62	.56371 83399 65677 66621 82512 402	
63	.56383 69186 64544 91214 87064 673	
64	.56395 54649 95812 77498 28854 444	
3665	.56407 39789 77146 74795 90742 078	
66	.56419 24606 26197 86612 94913 554	
67	.56431 09099 60602 72213 35721 221	
68	.56442 93269 97983 48194 97483 187	
69	.56454 77117 55947 90062 57593 037	
3670	.56466 60642 52089 33798 75290 930	
71	.56478 43845 03986 77432 66446 447	(281)
72	.56490 26725 29204 82606 64702 883	
73	.56502 09283 45293 76140 69332 019	(343)
74	.56513 91519 69789 51594 80147 759	

N	logarithm	ref
3675	.56525 73434 20213 70829 19826 310	(344)
76	.56537 55027 14073 65562 43979 980	
77	.56549 36298 68862 38927 39330 957	
78	.56561 17249 02058 67025 10330 794	
79	.56572 97878 31127 00476 54570 685	
3680	.56584 78186 73517 65972 27326 911	
81	.56596 58174 46666 67819 95585 242	
82	.56608 37841 67995 89489 81887 372	
83	.56620 17188 54912 95157 98341 848	
84	.56631 96215 24811 31247 71141 292	
3685	.56643 74921 95070 27968 55927 057	
86	.56655 53308 83055 00853 44341 821	
87	.56667 31376 06116 52293 62109 978	
88	.56679 09123 81591 73071 58985 027	
89	.56690 86552 26803 43891 90902 530	
3690	.56702 63661 59060 36909 94676 565	(259)
91	.56714 40451 95657 17258 55576 938	
92	.56726 16923 53874 44572 68123 824	
93	.56737 93076 50978 74511 90435 821	
94	.56749 68911 04222 60280 92466 786	
3695	.56761 44427 30844 54147 98466 195	(344)
96	.56773 19625 48069 08961 23997 120	
97	.56784 94505 73106 79663 07845 279	
98	.56796 69068 23154 24802 39152 012	
99	.56808 43313 15394 08044 80103 369	

N	logarithm	ref
3700	.56820 17240 66994 99680 84506 895	(261)
01	.56831 90850 95111 78132 12587 061	
02	.56843 64144 16885 31455 42329 653	
03	.56855 37120 49442 58844 77704 831	
04	.56867 09780 09896 72131 54097 926	
3705	.56878 82123 15346 97282 41276 422	(345)
06	.56890 54149 82878 75895 44220 967	
07	.56902 25860 29563 66694 02147 614	
08	.56913 97254 72459 47018 86047 905	
09	.56925 68333 28610 14317 95072 752	
3710	.56937 39096 15045 87634 52085 502	
11	.56949 09543 48783 09092 98708 925	
12	.56960 79675 46824 45382 90190 260	
13	.56972 49492 26158 89240 90407 859	
14	.56984 18994 03761 60930 67342 324	
3715	.56995 88180 96594 09720 89334 465	(96,251)
16	.57007 57053 21604 15361 22451 773	
17	.57019 25610 95725 89556 29284 496	
18	.57030 93854 35879 77437 69491 819	
19	.57042 61783 58972 59034 02418 023	
3720	.57054 29398 81897 50738 92097 928	
21	.57065 96700 21534 06777 14970 275	
22	.57077 63687 94748 20668 70617 158	
23	.57089 30362 18392 26690 95846 981	
24	.57100 96723 09305 01338 82437 824	

N	logarithm	ref
3725	.57112 62770 84311 64782 98857 532	(341)
26	.57124 28505 60223 82326 16276 200	
27	.57135 93927 53839 65857 39186 185	
28	.57147 59036 81943 75304 40944 144	
29	.57159 23833 61307 20084 04549 031	
3730	.57170 88318 08687 60550 68969 387	(345)
31	.57182 52490 40829 09442 81332 665	
32	.57194 16350 74462 33327 55288 760	
33	.57205 79899 26304 54043 35859 309	
34	.57217 43136 13059 50140 71083 765	
3735	.57229 06061 51417 58320 90772 638	(345)
36	.57240 68675 58055 74872 92677 740	
37	.57252 30978 49637 57108 36388 678	
38	.57263 92970 42813 24794 45264 263	
39	.57275 54651 54219 61585 16706 918	
3740	.57287 16022 00480 16450 41087 603	
41	.57298 77081 98205 05103 29628 195	
42	.57310 37831 63991 11425 51547 676	
43	.57321 98271 14421 88890 80777 935	
44	.57333 58400 66067 61986 52554 381	
3745	.57345 18220 35485 27633 30186 033	
46	.57356 77730 39218 56602 82309 155	
47	.57368 36930 93797 94933 70927 943	
48	.57379 95822 15740 65345 50545 216	
49	.57391 54404 21550 68650 78685 482	

N	logarithm	ref
3750	.57403 12677 27718 85165 38112 191	
51	.57414 70641 50722 76116 71040 426	
52	.57426 28297 07026 85050 25645 720	
53	.57437 85644 13082 39234 15169 121	
54	.57449 42682 85327 51061 89918 077	
3755	.57460 99413 40187 19453 22462 145	
56	.57472 55835 94073 31253 06321 976	
57	.57484 11950 63384 62628 68449 466	
58	.57495 67757 64506 80464 95796 426	
59	.57507 23257 13812 43757 76268 536	
3760	.57518 78449 27661 05005 54360 836	
61	.57530 33334 22399 11599 01770 421	(346)
62	.57541 87912 14360 07209 03281 482	
63	.57553 42183 19864 33172 58217 267	
64	.57564 96147 55219 29876 97753 000	
3765	.57576 49805 36719 38142 18383 252	
66	.57588 03156 80646 00601 31836 692	
67	.57599 56202 03267 63079 31730 624	(346)
68	.57611 08941 20839 75969 77257 173	
69	.57622 61374 49604 95609 94192 410	(254)
3770	.57634 13502 05792 85653 93519 209	
71	.57645 65324 05620 18444 07954 059	
72	.57657 16840 65290 76380 46667 517	
73	.57668 68052 00995 53288 68487 470	
74	.57680 18958 28912 55785 73873 818	

N	logarithm	ref
3775	.57691 69559 65207 04644 15952 659	(347)
76	.57703 19856 26031 36154 30897 529	
77	.57714 69848 27525 03484 87944 718	
78	.57726 19535 85814 78041 59329 139	
79	.57737 68919 17014 50824 10426 702	
3780	.57749 17998 37225 33781 10388 631	
81	.57760 66773 62535 61163 63552 602	
82	.57772 15245 09020 90876 61915 086	
83	.57783 63412 92744 05828 58948 729	
84	.57795 11277 29755 15279 65048 086	
3785	.57806 58838 36091 56187 64886 516	
86	.57818 06096 27777 94552 56966 480	
87	.57829 53051 20826 26759 15645 025	
88	.57840 99703 31235 80917 75915 654	
89	.57852 46052 74993 18203 41227 299	
3790	.57863 92099 68072 34193 14620 595	(263)
91	.57875 37844 26434 60201 53461 106	
92	.57886 83286 66028 64614 48048 686	
93	.57898 28427 02790 54221 24381 592	
94	.57909 73265 52643 75544 71353 482	
3795	.57921 17802 31499 16169 92660 920	(347)
96	.57932 62037 55255 06070 83698 479	
97	.57944 05971 39797 18935 33718 030	
98	.57955 49604 00998 73488 53528 312	
99	.57966 92935 54720 34814 29010 337	

N	logarithm	ref
3800	.57978 35966 16810 15675 00723 705	(348)
01	.57989 78696 03103 77829 69878 383	
02	.58001 21125 29424 33350 30945 997	
03	.58012 63254 11582 45936 31184 192	
04	.58024 05082 65376 32227 57347 091	
3805	.58035 46611 06591 63115 49854 408	
06	.58046 87839 51001 65052 44691 247	
07	.58058 28768 14367 21359 43310 125	
08	.58069 69397 12436 73532 10806 265	
09	.58081 09726 60946 22545 02636 705	
3810	.58092 49756 75619 30154 20153 251	
11	.58103 89487 72167 20197 95218 841	
12	.58115 28919 66288 79896 04176 372	
13	.58126 68052 73670 61147 11438 533	
14	.58138 06887 09986 81824 42966 740	
3815	.58149 45422 90899 27069 89906 715	
16	.58160 83660 32057 50586 42647 823	
17	.58172 21599 49098 75928 55572 744	
18	.58183 59240 57647 97791 42763 590	
19	.58194 96583 73317 83298 04930 082	
3820	.58206 33629 11708 73284 87824 930	(268)
21	.58217 70376 88408 83585 72411 040	
22	.58229 06827 18994 06313 97044 731	(349)
23	.58240 42980 19028 11143 11938 622	
24	.58251 78836 04062 46585 66167 390	

(19)

N	logarithm	ref	
3825	.58263 14394 89636 41270 27479 114	(349)	
26	.58274 49656 91277 05217 35174 424		
27	.58285 84622 24499 31112 86315 229		
28	.58297 19291 04805 95580 55524 269		
29	.58308 53663 47687 60452 48636 311		
3830	.58319 87739 68622 74037 90461 295		
31	.58331 21519 83077 72390 46919 272		
32	.58342 55004 06506 80573 81806 511		
33	.58353 88192 54352 13925 48451 662		
34	.58365 21085 42043 79319 16520 395		
3835	.58376 53682 84999 76425 34226 478		
36	.58387 85984 98625 98970 26206 752		
37	.58399 17991 98316 35993 27317 037		
38	.58410 49703 99452 73102 52605 487		
39	.58421 81121 17404 93729 03719 484		
3840	.58433 12243 67530 80379 12001 663		
41	.58444 43071 65176 15885 18530 222		
42	.58455 73605 25674 84654 91358 177		
43	.58467 03844 64348 73918 80205 789		
44	.58478 33789 96507 74976 08859 897		
3845	.58489 63441 37449 84439 05533 453		(350)
46	.58500 92799 02461 05475 71438 076		
47	.58512 21863 06815 49050 87822 002		
48	.58523 50633 65775 35165 61725 317		
49	.58534 79110 94590 94095 10703 943		

N	logarithm	ref
3850	.58546 07295 08500 67624 86773 351	(273)
51	.58557 35186 22731 10285 39822 538	
52	.58568 62784 52496 90585 20748 354	
53	.58579 90090 13000 92242 24559 796	
54	.58591 17103 19434 15413 73701 441	
3855	.58602 43823 86975 77924 41844 745	(313)
56	.58613 70252 30793 16493 18395 454	
57	.58624 96388 66041 87958 13964 973	
58	.58636 22233 07865 70500 07053 034	
59	.58647 47785 71396 64864 32188 591	
3860	.58658 73046 71754 95581 09775 411	(351)
61	.58669 98016 24049 12184 17888 390	
62	.58681 22694 43375 90428 06266 157	
63	.58692 47081 44820 33503 52745 113	
64	.58703 71177 43455 73251 62379 583	
3865	.58714 94982 54343 71376 09492 325	(351)
66	.58726 18496 92534 20654 22899 211	
67	.58737 41720 73065 46146 14551 425	
68	.58748 64654 10964 06402 51838 106	
69	.58759 87297 21244 94670 73791 921	
3870	.58771 09650 18911 40099 51439 597	(351)
71	.58782 31713 18955 08941 92539 037	
72	.58793 53486 36356 05756 90944 161	
73	.58804 74969 86082 74609 20838 235	
74	.58815 96163 83092 00267 76075 953	

N	logarithm	ref
3875	.58827 17068 42329 09402 54874 159	(351,540)
76	.58838 37683 78727 71779 90090 628	
77	.58849 58010 07210 01456 25329 897	
78	.58860 78047 42686 57970 37114 729	
79	.58871 97796 00056 47534 03361 327	
3880	.58883 17255 94207 24221 18396 011	(246)
81	.58894 36427 40014 91155 54750 639	
82	.58905 55310 52344 01696 71973 608	
83	.58916 73905 46047 60624 72692 872	
84	.58927 92212 35967 25323 06166 960	
3885	.58939 10231 36933 06960 19559 567	(90,252)
86	.58950 27962 63763 71669 57172 869	
87	.58961 45406 31266 41728 07874 281	
88	.58972 62562 54236 96733 00950 952	
89	.58983 79431 47459 74777 50625 881	
3890	.58994 96013 25707 73624 49469 117	
91	.59006 12308 03742 51879 10937 061	
92	.59017 28315 96314 30159 61272 504	
93	.59028 44037 18161 92266 80997 599	
94	.59039 59471 84012 86351 96231 538	
3895	.59050 74620 08583 26083 20064 310	
96	.59061 89482 06577 91810 44217 486	
97	.59073 04057 92690 31728 81222 562	
98	.59084 18347 81602 63040 57346 986	
99	.59095 32351 87985 73115 56497 575	

N	logarithm	ref
3900	.59106 46070 26499 20650 15330 612	
01	.59117 59503 11791 36824 69797 515	
02	.59128 72650 58499 26459 53354 542	
03	.59139 85512 81248 69169 47064 601	
04	.59150 98089 94654 20516 81818 821	
3905	.59162 10382 13319 13162 92905 116	
06	.59173 22389 51835 58018 27150 599	
07	.59184 34112 24784 45391 02864 273	(265)
08	.59195 45550 46735 46134 22806 005	
09	.59206 56704 32247 12791 40407 445	
3910	.59217 67573 95866 80740 79470 066	
11	.59228 78159 52130 69338 07565 165	(328)
12	.59239 88461 15563 83057 63360 234	
13	.59250 98479 00680 12632 38095 698	
14	.59262 08213 21982 36192 11435 651	
3915	.59273 17663 93962 20400 41915 780	
16	.59284 26831 31100 21590 12211 304	
17	.59295 35715 47865 86897 29447 327	(351)
18	.59306 44316 58717 55393 80773 634	
19	.59317 52634 78102 59218 44425 540	(352)
3920	.59328 60670 20457 24706 56492 014	
21	.59339 68423 00206 73518 33611 913	
22	.59350 75893 31765 23765 51818 759	
23	.59361 83081 29535 91136 81754 088	(352)
24	.59372 89987 07910 90021 80469 036	

N	logarithm	ref
3925	.59383 96610 81271 34633 40033 404	(353)
26	.59395 02952 63987 40128 93171 080	
27	.59406 09012 70418 23729 76140 274	
28	.59417 14791 14912 05839 49076 677	
29	.59428 20288 11806 11160 74017 218	
3930	.59439 25503 75426 69810 50821 740	(353)
31	.59450 30438 20089 18434 11209 516	
32	.59461 35091 60098 01317 71127 142	
33	.59472 39464 09746 71499 41663 945	
34	.59483 43555 83317 91878 98730 696	
3935	.59494 47366 95083 36326 11716 984	
36	.59505 50897 59303 90787 31342 268	
37	.59516 54147 90229 54391 36915 219	
38	.59527 57118 02099 40553 43215 577	
39	.59538 59808 09141 78077 67212 394	
3940	.59549 62218 25574 12258 54832 124	(354)
41	.59560 64348 65603 05980 67989 664	
42	.59571 66199 43424 40817 32095 050	
43	.59582 67770 73223 18127 44248 167	
44	.59593 69062 69173 60151 42333 415	
3945	.59604 70075 45439 11105 35225 924	(182,252)
46	.59615 70809 16172 38273 94320 537	
47	.59626 71263 95515 33102 06594 383	
48	.59637 71439 97599 12284 89413 507	
49	.59648 71337 36544 18856 67293 657	

N	logarithm	ref
3950	.59659 70956 26460 23278 10824 918	(354)
51	.59670 70296 81446 24522 37969 571	
52	.59681 69359 15590 51159 77942 126	
53	.59692 68143 42970 62440 97880 138	
54	.59703 66649 77653 49378 92514 050	
3955	.59714 64878 33695 35829 37043 925	
56	.59725 62829 25141 79570 03430 549	
57	.59736 60502 66027 73378 40308 069	
58	.59747 57898 70377 46108 16724 895	
59	.59758 55017 52204 63764 29919 290	
3960	.59769 51859 25512 30576 77335 672	
61	.59780 48424 04292 90072 93087 298	
62	.59791 44712 02528 26148 49070 639	
63	.59802 40723 34189 64137 20936 387	
64	.59813 36458 13237 71879 19121 683	
3965	.59824 31916 53622 60787 85147 770	
66	.59835 27098 69283 86915 53386 957	
67	.59846 22004 74150 52017 78502 367	
68	.59857 16634 82141 04616 28763 632	
69	.59868 10989 07163 41060 45441 302	
3970	.59879 05067 63115 06587 68482 407	
71	.59889 98870 63882 96382 28669 228	
72	.59900 92398 23343 56633 06463 000	
73	.59911 85650 55362 85589 57733 901	
74	.59922 78627 73796 34617 06578 316	

N	logarithm	ref
3975	.59933 71329 92489 09250 05424 054	
76	.59944 63757 25275 70244 62623 778	
77	.59955 55909 85980 34629 37736 616	
78	.59966 47787 88416 76755 04697 535	
79	.59977 39391 46388 29342 83073 710	
3980	.59988 30720 73687 84531 37606 791	
81	.59999 21775 84097 94922 46239 597	
82	.60010 12556 91390 74625 36825 424	
83	.60021 03064 09328 00299 92717 826	
84	.60031 93297 51661 12198 27438 342	
3985	.60042 83257 32131 15205 28619 325	
86	.60053 72943 64468 79877 71418 682	
87	.60064 62356 62394 43482 01602 962	
88	.60075 51496 39618 11030 88494 923	
89	.60086 40363 09839 56318 47981 322	(354)
3990	.60097 28956 86748 22954 35776 376	
91	.60108 17277 84023 25396 11135 945	
92	.60119 05326 15333 49980 71217 202	
93	.60129 93101 94337 55954 56278 170	
94	.60140 80605 34683 76502 25911 182	
3995	.60151 67836 50010 19774 06503 991	
96	.60162 54795 53944 69912 10121 888	
97	.60173 41482 60104 88075 25003 886	
98	.60184 27897 82098 13462 77865 654	
99	.60195 14041 33521 64336 68201 566	

N	logarithm	ref
4000	.60205 99913 27962 39042 74777 894	(355)
01	.60216 85513 78997 17030 34508 838	
02	.60227 70843 00192 59870 93906 732	
03	.60238 55901 05105 12275 33297 462	
04	.60249 40688 07281 03109 63991 772	
4005	.60260 25204 20256 46409 98602 815	(356)
06	.60271 09449 57557 42395 94699 958	
07	.60281 93424 32699 78482 71988 549	
08	.60292 77128 59189 30292 03204 973	
09	.60303 60562 50521 62661 78916 057	
4010	.60314 43726 20182 30654 46411 481	(356)
11	.60325 26619 81646 80564 22877 601	
12	.60336 09243 48380 50922 83040 683	
13	.60346 91597 33838 73504 21467 289	
14	.60357 73681 51466 74327 89709 175	
4015	.60368 55496 14699 74661 08479 770	(357)
16	.60379 37041 36962 92019 55048 956	
17	.60390 18317 31671 41167 26042 558	
18	.60400 99324 12230 35114 75832 619	
19	.60411 80061 92034 86116 30704 220	
4020	.60422 60530 84470 06665 78984 272	(357)
21	.60433 40731 02911 10491 37317 386	
22	.60444 20662 60723 13548 93273 614	
23	.60455 00325 71261 35014 24472 524	
24	.60465 79720 47870 98273 94407 745	

(20)

N	logarithm	ref	
4025	.60476 58847 03887 31915 25155 814	(358)	
26	.60487 37705 52635 70714 47152 830		
27	.60498 16296 07431 56624 26222 087		
28	.60508 94618 81580 39759 68035 568		
29	.60519 72673 88377 79383 00191 841		
4030	.60530 50461 41109 44887 32092 581		
31	.60541 27981 53051 16778 92799 653		
32	.60552 05234 37468 87658 47054 334		
33	.60562 82220 07618 63200 89639 972		
34	.60573 58938 76746 63134 18269 037		
4035	.60584 35390 58089 22216 85175 244		
36	.60595 11575 64872 91214 27591 060		
37	.60605 87494 10314 37873 77290 642		
38	.60616 63146 07620 47898 49377 928		
39	.60627 38531 69988 25920 10499 262		
4040	.60638 13651 10604 96470 26659 677		
41	.60648 88504 42648 04950 90821 603		
42	.60659 63091 79285 18603 30464 474		
43	.60670 37413 33674 27475 95283 412		
44	.60681 11469 18963 45391 25204 829		
4045	.60691 85259 48291 10910 98896 512		(358)
46	.60702 58784 34785 88300 62949 420		
47	.60713 32043 91566 68492 41908 140		
48	.60724 05038 31742 70047 29326 624		
49	.60734 77767 68413 40115 60025 527		

N	logarithm	ref
4050	.60745 50232 14668 55396 63727 183	(359)
51	.60756 22431 83588 23097 00243 914	
52	.60766 94366 88242 81887 76395 095	
53	.60777 66037 41693 02860 44828 082	
54	.60788 37443 56989 90481 84917 805	
4055	.60799 08585 47174 83547 65919 536	(359)
56	.60809 79463 25279 56134 92549 033	
57	.60820 50077 04326 18553 33163 960	
58	.60831 20426 97327 18295 30720 186	
59	.60841 90513 17285 40984 96676 277	
4060	.60852 60335 77194 11325 88019 163	
61	.60863 29894 90036 94047 67583 708	
62	.60873 99190 68787 94851 47838 583	
63	.60884 68223 26411 61354 18310 545	
64	.60895 36992 75862 84031 56818 954	
4065	.60906 05499 30086 97160 24692 034	
66	.60916 73743 02019 79758 46136 099	
67	.60927 41724 04587 56525 71928 692	
68	.60938 09442 50706 98781 27606 246	
69	.60948 76898 53285 25401 46316 628	
4070	.60959 44092 25220 03755 86506 608	(359)
71	.60970 11023 79399 50642 34614 000	
72	.60980 77693 28702 33220 92933 957	
73	.60991 44100 85997 69946 52828 572	
74	.61002 10246 64145 31500 53448 682	

N	logarithm	ref
4075	.61012 76130 75995 41721 26136 465	(360)
76	.61023 41753 34388 78533 24677 118	
77	.61034 07114 52156 74875 41567 651	
78	.61044 72214 42121 19628 10470 506	
79	.61055 37053 17094 58538 95019 437	
4080	.61066 01630 89879 95147 64144 818	
81	.61076 65947 73270 91709 54085 215	
82	.61087 30003 80051 70118 17251 826	
83	.61097 93799 22997 12826 58112 058	
84	.61108 57334 14872 63767 56258 264	
4085	.61119 20608 68434 29272 76827 343	
86	.61129 83622 96428 78990 68436 660	
87	.61140 46377 11593 46803 48801 430	
88	.61151 08871 26656 31742 78198 432	
89	.61161 71105 54335 98904 20940 657	
4090	.61172 33080 07341 80360 95027 177	(95)
91	.61182 94794 98373 76076 10132 288	
92	.61193 56250 40122 54813 94097 641	(333)
93	.61204 17446 45269 55050 08090 852	
94	.61214 78383 26486 85880 50593 767	
4095	.61225 39060 96437 27929 50383 283	(296)
96	.61235 99479 67774 34256 48667 367	
97	.61246 59639 53142 31261 70538 608	
98	.61257 19540 65176 19590 85907 390	
99	.61267 79183 16501 75038 60076 472	

N	logarithm	ref
4100	.61278 38567 19735 49450 94118 500	(68,252)
01	.61288 97692 87484 71626 55217 689	
02	.61299 56560 32347 48216 97136 659	
03	.61310 15169 66912 64625 70969 099	
04	.61320 73521 03759 85906 26338 697	
4105	.61331 31614 55459 57659 03204 470	
06	.61341 89450 34573 06927 14432 379	
07	.61352 47028 53652 43091 19292 823	
08	.61363 04349 25240 58762 88043 339	
09	.61373 61412 61871 30677 57755 572	
4110	.61384 18218 76069 20585 79545 304	
11	.61394 74767 80349 76143 57364 045	
12	.61405 31059 87219 31801 78510 448	
13	.61415 87095 09175 09694 36019 517	
14	.61426 42873 58705 20525 43087 315	
4115	.61436 98395 48288 64455 39688 619	
16	.61447 53660 90395 31985 91544 685	
17	.61458 08669 97486 04843 81598 040	
18	.61468 63422 82012 56863 94150 927	
19	.61479 17919 56417 54870 91823 781	
4120	.61489 72160 33134 59559 85489 840	
21	.61500 26145 24588 26375 97341 743	
22	.61510 79874 43194 06393 17245 668	
23	.61521 33348 01358 47191 52538 345	
24	.61531 86566 11478 93733 71421 985	

N	logarithm	ref
4125	.61542 39528 85943 89240 40111 903	
26	.61552 92236 37132 76064 53891 372	
27	.61563 44688 77415 96564 62227 949	(267)
28	.61573 96886 19154 93976 88105 301	
29	.61584 48828 74702 13286 41724 234	(315)
4130	.61595 00516 56401 02097 28726 431	
31	.61605 51949 76586 11501 53094 106	
32	.61616 03128 47582 96947 14878 522	
33	.61626 54052 81708 19105 02910 090	(360)
34	.61637 04722 91269 44734 82642 475	
4135	.61647 55138 88565 47549 79282 898	
36	.61658 05300 85886 09080 56360 549	
37	.61668 55208 95512 19537 89884 796	
38	.61679 04863 29715 78674 38244 580	
39	.61689 54264 00759 96645 08000 165	(301)
4140	.61700 03411 20898 94867 15718 135	
41	.61710 52305 02378 06878 46000 282	
42	.61721 00945 57433 79195 05856 781	
43	.61731 49332 98293 72167 75573 777	
44	.61741 97467 37176 60837 56225 270	
4145	.61752 45348 86292 35790 13978 934	
46	.61762 92977 57842 04009 21345 223	
47	.61773 40353 64017 89728 95518 922	
48	.61783 87477 17003 35285 33961 975	
49	.61794 34348 28973 01966 47376 250	

N	logarithm	ref
4150	.61804 80967 12092 70861 90214 573	
51	.61815 27333 78519 43710 88878 184	
52	.61825 73448 40401 43749 67748 462	
53	.61836 19311 09878 16557 73200 548	(361)
54	.61846 64921 99080 30902 95746 241	
4155	.61857 10281 20129 79585 90453 281	
56	.61867 55388 85139 80282 95787 908	
57	.61878 00245 06214 76388 51027 308	(361)
58	.61888 44849 95450 37856 12388 343	
59	.61898 89203 64933 62038 68018 698	(361)
4160	.61909 33306 26742 74527 51996 316	
61	.61919 77157 92947 29990 57482 795	
62	.61930 20758 75608 13009 49176 118	
63	.61940 64108 86777 38915 75207 887	
64	.61951 07208 38498 54625 78629 959	
4165	.61961 50057 42806 39475 08635 168	
66	.61971 92656 11727 06051 31656 532	
67	.61982 35004 57278 01026 42489 149	
68	.61992 77102 91468 05987 75578 708	
69	.62003 18951 26297 38268 16620 307	
4170	.62013 60549 73757 51775 14611 056	
71	.62024 01898 45831 37818 94499 649	
72	.62034 42997 54493 25939 70575 907	
73	.62044 83847 11708 84733 60743 007	
74	.62055 24447 29435 22678 01814 905	

N	logarithm	ref
4175	.62065 64798 19620 88955 65981 205	(273)
76	.62076 04899 94205 74277 78581 484	
77	.62086 44752 65121 11706 37330 870	
78	.62096 84356 44289 77475 33138 399	
79	.62107 23711 43625 91810 72659 463	
4180	.62117 62817 75035 19750 02723 417	
81	.62128 01675 50414 71960 36777 181	
82	.62138 40284 81653 05555 83485 423	
83	.62148 78645 80630 24913 77627 692	
84	.62159 16758 59217 82490 13432 631	
4185	.62169 54623 29278 79633 80489 152	
86	.62179 92240 02667 67400 02374 235	
87	.62190 29608 91230 47362 78136 781	
88	.62200 66730 06804 72426 26776 699	
89	.62211 03603 61219 47635 34858 196	
4190	.62221 40229 66295 30985 07395 994	
91	.62231 76608 33844 34229 22152 963	
92	.62242 12739 75670 23687 87487 443	
93	.62252 48624 03568 21054 03888 277	
94	.62262 84261 29325 04199 29335 367	
4195	.62273 19651 64719 07978 48623 322	
96	.62283 54795 21520 25033 46785 533	
97	.62293 89692 11490 06595 86755 808	
98	.62304 24342 46381 63288 91404 424	
99	.62314 58746 37939 65928 30085 280	

N	logarithm	ref
4200	.62324 92903 97900 46322 09830 566	(362)
01	.62335 26815 37991 98069 71329 145	
02	.62345 60480 69933 77359 89824 642	
03	.62355 93900 05437 03767 81068 963	
04	.62366 27073 56204 61051 12466 785	
4205	.62376 60001 33930 97945 19546 312	
06	.62386 92683 50302 28957 27891 352	
07	.62397 25120 16996 35159 80669 586	
08	.62407 57311 45682 64982 71891 628	
09	.62417 89257 48022 35004 85535 293	
4210	.62428 20958 35668 30744 40669 234	(288)
11	.62438 52414 20265 07448 42709 910	
12	.62448 83625 13448 90881 40945 604	
13	.62459 14591 26847 78112 92461 007	
14	.62469 45312 72081 38304 32595 651	
4215	.62479 75789 60761 13494 52069 248	(363)
16	.62490 06022 04490 19384 80906 786	
17	.62500 36010 14863 46122 79296 003	
18	.62510 65754 03467 59085 35509 633	
19	.62520 95253 81880 99660 71024 619	
4220	.62531 24509 61673 86029 52970 247	(364)
21	.62541 53521 54408 13945 14036 943	
22	.62551 82289 71637 57512 79977 276	
23	.62562 10814 24907 69968 04830 445	
24	.62572 39095 25755 84454 14001 376	

(21)

N	logarithm	ref
4225	.62582 67132 85711 14798 55325 264	
26	.62592 94927 16294 56288 58248 256	
27	.62603 22478 29018 86446 01254 673	
28	.62613 49786 35388 65800 87671 034	
29	.62623 76851 46900 38664 29976 858	(364)
4230	.62634 03673 75042 33900 42752 060	
31	.62644 30253 31294 65697 44390 504	(364)
32	.62654 56590 27129 34337 67709 087	
33	.62664 82684 74010 26966 79581 496	
34	.62675 08536 83393 18362 09725 582	
4235	.62685 34146 66725 71699 88773 064	
36	.62695 59514 35447 39321 95750 087	
37	.62705 84640 00989 63501 15096 920	
38	.62716 09523 74775 77206 03354 886	
39	.62726 34165 68221 04864 65648 397	
4240	.62736 58565 92732 63127 42089 758	
41	.62746 82724 59709 61629 04234 196	(125,253)
42	.62757 06641 80543 03749 61712 348	
43	.62767 30317 66615 87374 79167 248	(185)
44	.62777 53752 29303 05655 03622 634	
4245	.62787 76945 79971 47764 02409 191	
46	.62797 99898 29979 99656 11775 123	
47	.62808 22609 90679 44822 96307 272	
48	.62818 45080 73412 65049 19288 752	
49	.62828 67310 89514 41167 24118 890	

N	logarithm	ref
4250	.62838 89300 50311 53811 26921 049	
51	.62849 11049 67122 84170 20463 688	
52	.62859 32558 51259 14739 89519 841	
53	.62869 53827 14023 30074 37789 943	(365)
54	.62879 74855 66710 17536 26512 778	
4255	.62889 95644 20606 68046 24889 071	
56	.62900 16192 86991 76831 72442 080	
57	.62910 36501 77136 44174 53439 310	
58	.62920 56571 02303 76157 83499 286	
59	.62930 76400 73748 85412 08507 112	(365)
4260	.62940 95991 02718 91860 15962 330	
61	.62951 15342 00453 23461 58882 416	(366)
62	.62961 34453 78183 16955 92385 015	
63	.62971 53326 47132 18605 23071 834	
64	.62981 71960 18515 84935 71336 921	
4265	.62991 90355 03541 83478 46721 816	
66	.63002 08511 13409 93509 36439 910	
67	.63012 26428 59312 06788 07192 110	
68	.63022 44107 52432 28296 20395 724	
69	.63032 61548 03946 76974 60948 267	
4270	.63042 78750 25023 86459 79647 723	
71	.63052 95714 26824 05819 49390 544	(333)
72	.63063 12440 20500 00287 35268 519	
73	.63073 28928 17196 51996 78685 423	(310)
74	.63083 45178 28050 60713 95614 162	

N	logarithm	ref
4275	.63093 61190 64191 44569 89114 928	
76	.63103 76965 36740 40791 76234 693	
77	.63113 92502 56811 06433 29408 160	
78	.63124 07802 35509 19104 32480 103	
79	.63134 22864 83932 77699 51468 830	
4280	.63144 37690 13172 03126 20190 289	
81	.63154 52278 34309 39031 40862 186	
82	.63164 66629 58419 52527 99807 228	
83	.63174 80743 96569 34919 98374 468	(366)
84	.63184 94621 59818 02426 99197 489	
4285	.63195 08262 59216 96907 87908 000	
86	.63205 21667 05809 86583 50423 213	
87	.63215 34835 10632 66758 65925 164	
88	.63225 47766 84713 60543 15649 976	
89	.63235 60462 39073 19572 07604 840	(367)
4290	.63245 72921 84724 24725 17330 324	
91	.63255 85145 32671 86845 44825 400	
92	.63265 97132 93913 47456 87752 420	
93	.63276 08884 79438 79481 31039 046	
94	.63286 20401 00229 87954 52993 991	
4295	.63296 31681 67261 10741 48053 175	
96	.63306 42726 91499 19250 66272 792	
97	.63316 53536 83903 19147 69685 509	(343)
98	.63326 64111 55424 51068 05635 899	
99	.63336 74451 17006 91328 97210 976	

N	logarithm	ref
4300	.63346 84555 79586 52640 50881 532	
01	.63356 94425 54091 84815 81469 778	
02	.63367 04060 51443 75480 54558 614	
03	.63377 13460 82555 50781 46457 653	
04	.63387 22626 58332 76094 21840 948	
4305	.63397 31557 89673 56730 29171 171	
06	.63407 40254 87468 38643 14024 823	
07	.63417 48717 62600 09133 50432 850	
08	.63427 56946 25943 97553 90350 871	
09	.63437 64940 88367 76012 31373 024	
4310	.63447 72701 60731 60075 02803 262	
11	.63457 80228 53888 09468 70197 735	
12	.63467 87521 78682 28781 58491 726	
13	.63477 94581 45951 68163 93824 405	
14	.63488 01407 66526 24027 64174 494	
4315	.63498 08000 51228 39744 98919 750	
16	.63508 14360 10873 06346 67432 994	
17	.63518 20486 56267 63218 96827 213	
18	.63528 26379 98211 98800 08962 109	
19	.63538 32040 47498 51275 76824 259	
4320	.63548 37468 14912 09274 00392 887	
21	.63558 42663 11230 12559 02103 056	
22	.63568 47625 47222 52724 42017 916	
23	.63578 52355 33651 73885 52821 452	
24	.63588 56852 81272 73370 94743 011	

N	logarithm	ref
4325	.63598 61118 00833 02413 30524 693	(206)
26	.63608 65151 03072 66839 20542 512	
27	.63618 68951 98724 27758 38192 068	
28	.63628 72520 98513 02252 05649 281	
29	.63638 75858 13156 64060 50116 540	
4330	.63648 78963 53365 44269 80664 497	(206)
31	.63658 81837 29842 31997 85779 488	
32	.63668 84479 53282 75079 51726 442	
33	.63678 86890 34374 80751 01836 930	
34	.63688 89069 83799 16333 56831 837	
4335	.63698 91018 12229 09916 16287 972	(367)
36	.63708 92735 30330 51037 61357 738	
37	.63718 94221 48761 91367 78850 821	
38	.63728 95476 78174 45388 06786 677	
39	.63738 96501 29211 91071 01526 420	
4340	.63748 97295 12510 70559 26592 534	(368)
41	.63758 97858 38699 90843 63284 676	
42	.63768 98191 18401 24440 43199 626	
43	.63778 98293 62229 10068 02763 315	
44	.63788 98165 80790 53322 59882 638	
4345	.63798 97807 84685 27353 12824 630	(283)
46	.63808 97219 84505 73535 61430 363	
47	.63818 96401 90837 02146 50770 806	
48	.63828 95354 14256 93035 37351 658	
49	.63838 94076 65335 96296 77974 037	

N	logarithm	ref
4350	.63848 92569 54637 32941 41357 715	
51	.63858 90832 92716 95566 42633 413	
52	.63868 88866 90123 49025 00810 521	
53	.63878 86671 57398 31095 19326 413	
54	.63888 84247 05075 53147 89783 366	
4355	.63898 81593 43682 00814 18978 924	
56	.63908 78710 83737 34651 79335 384	
57	.63918 75599 35753 90810 82833 881	(266)
58	.63928 72259 10236 81698 78558 425	
59	.63938 68690 17683 96644 73955 036	
4360	.63948 64892 68586 02562 79910 971	
61	.63958 60866 73426 44614 79758 869	
62	.63968 56612 42681 46872 22310 467	
63	.63978 52129 86820 12977 39024 367	(62,252)
64	.63988 47419 16304 26803 85412 188	
4365	.63998 42480 41588 53116 06787 235	
66	.64008 37313 73120 38228 28459 688	
67	.64018 31919 21340 10662 70482 119	
68	.64028 26296 96680 81806 87048 987	
69	.64038 20447 09568 46570 30653 602	
4370	.64048 14369 70421 84040 41105 880	
71	.64058 08064 89652 58137 59514 028	
72	.64068 01532 77665 18269 67333 171	
73	.64077 94773 44856 99985 50583 722	(266)
74	.64087 87787 01618 25627 89342 175	

N	logarithm	ref
4375	.64097 80573 58332 04985 72606 797	
76	.64107 73133 25374 35945 38640 567	
77	.64117 65466 13114 05141 40893 521	
78	.64127 57572 31912 88606 39606 504	
79	.64137 49451 92125 52420 19198 183	
4380	.64147 41105 04099 53358 31536 984	
81	.64157 32531 78175 39539 65199 481	
82	.64167 23732 24686 51073 40816 582	
83	.64177 14706 53959 20705 32608 709	
84	.64187 05454 76312 74463 16211 007	
4385	.64196 95977 02059 32301 42889 433	
86	.64206 86273 41504 08745 40248 455	
87	.64216 76344 04945 13534 39530 894	
88	.64226 66189 02673 52264 29610 300	
89	.64236 55808 44973 27029 37776 088	
4390	.64246 45202 42121 37063 37411 506	
91	.64256 34371 04387 79379 82664 329	(368)
92	.64266 23314 42035 49411 70210 044	
93	.64276 12032 65320 41650 28207 105	
94	.64286 00525 84491 50283 32543 686	
4395	.64295 88794 09790 69832 50475 211	
96	.64305 76837 51452 95790 11751 779	
97	.64315 64656 19706 25255 07334 420	(369)
98	.64325 52250 24771 57568 15799 005	
99	.64335 39619 76862 94946 57526 437	

N	logarithm	ref
4400	.64345 26764 86187 43117 76777 607	
01	.64355 13685 62945 11952 51751 457	
02	.64365 00382 17329 16097 32724 299	
03	.64374 86854 59525 75606 08368 425	
04	.64384 73102 99714 16571 00347 857	
4405	.64394 59127 48066 71752 86288 947	
06	.64404 44928 14748 81210 51223 369	
07	.64414 30505 09918 92929 67600 898	
08	.64424 15858 43728 63451 03969 229	
09	.64434 00988 26322 58497 62417 895	(342)
4410	.64443 85894 67838 53601 44883 237	
11	.64453 70577 78407 34729 48411 194	
12	.64463 55037 68152 98908 89474 533	
13	.64473 39274 47192 54851 57440 996	
14	.64483 23288 25636 23577 97288 676	
4415	.64493 07079 13587 39040 21664 786	
16	.64502 90647 21142 48744 52383 839	
17	.64512 73992 58391 14372 91461 086	
18	.64522 57115 35416 12404 21776 936	
19	.64532 40015 62293 34734 37467 901	
4420	.64542 22693 49091 89296 04139 470	
21	.64552 05149 05874 00677 48996 183	(369)
22	.64561 87382 42695 10740 80983 984	
23	.64571 69393 69603 79239 41039 822	(369)
24	.64581 51182 96641 84434 82543 292	

(22)

N	logarithm	ref
4425	.64591 32750 33844 23712 82064 983	
26	.64601 14095 91239 14198 80506 011	
27	.64610 95219 78847 93372 54723 112	
28	.64620 76122 06685 19682 19733 492	
29	.64630 56802 84758 73157 61593 478	
4430	.64640 37262 23069 56023 01044 897	
31	.64650 17500 31611 93308 88022 918	
32	.64659 97517 20373 33463 27118 985	
33	.64669 77312 99334 48962 34092 293	
34	.64679 56887 78469 36920 23523 122	
4435	.64689 36241 67745 19698 27701 202	
36	.64699 15374 77122 45513 46842 117	
37	.64708 94287 16554 89046 30724 638	
38	.64718 72978 95989 52047 91841 697	
39	.64728 51450 25366 63946 50157 586	
4440	.64738 29701 14619 82453 09563 822	
41	.64748 07731 73675 94166 66125 960	(370)
42	.64757 85542 12455 15178 48213 496	
43	.64767 63132 40870 91675 88604 866	
44	.64777 40502 68830 00545 28659 389	
4445	.64787 17653 06232 49974 54647 857	
46	.64796 94583 62971 80054 66333 349	
47	.64806 71294 48934 63380 77893 680	(371)
48	.64816 47785 74001 05652 51276 759	
49	.64826 24057 48044 46273 62079 998	

N	logarithm	ref
4450	.64836 00109 80931 58950 98044 750	(371)
51	.64845 75942 82522 52292 90256 632	
52	.64855 51556 62670 70406 77142 429	
53	.64865 26951 31222 93496 01354 142	
54	.64875 02126 98019 38456 39630 598	
4455	.64884 77083 72893 59471 65726 895	(371)
56	.64894 51821 65672 48608 46501 831	
57	.64904 26340 86176 36410 71253 278	
58	.64914 00641 44218 92493 14391 392	
59	.64923 74723 49607 26134 31539 337	
4460	.64933 48587 12141 86868 89151 110	(284)
61	.64943 22232 41616 65079 27735 886	
62	.64952 95659 47818 92586 58778 186	
63	.64962 68868 40529 43240 95442 995	
64	.64972 41859 29522 33511 17154 855	
4465	.64982 14632 24565 23073 68139 805	
66	.64991 87187 35419 15400 90018 875	
67	.65001 59524 71838 58348 88541 757	
68	.65011 31644 43571 44744 34549 072	
69	.65021 03546 60359 12970 99251 576	
4470	.65030 75231 31936 47555 23914 459	
71	.65040 46698 68031 79751 24034 782	
72	.65050 17948 78366 88125 28099 953	
73	.65059 88981 72656 99139 51015 001	
74	.65069 59797 60610 87735 02286 270	

N	logarithm	ref
4475	.65079 30396 51930 77914 29049 023	
76	.65089 00778 56312 43322 94026 314	
77	.65098 70943 83445 07830 88506 320	
78	.65108 40892 43011 46112 80425 237	
79	.65118 10624 44687 84227 97642 661	
4480	.65127 80139 98144 00199 46496 269	
81	.65137 49439 13043 24592 65722 473	(372)
82	.65147 18521 99042 41093 15829 565	
83	.65156 87388 65791 87084 04009 777	(370)
84	.65166 56039 22935 54222 44676 497	
4485	.65176 24473 80110 89015 55712 787	
86	.65185 92692 46948 93395 90517 188	
87	.65195 60695 33074 25296 05932 682	
88	.65205 28482 48104 99222 66144 530	
89	.65214 96054 01652 86829 82632 585	
4490	.65224 63410 03323 17491 90263 537	
91	.65234 30550 62714 78875 59608 425	
92	.65243 97475 89420 17511 45570 591	
93	.65253 64185 93025 39364 72409 160	(372)
94	.65263 30680 83110 10405 55242 960	
4495	.65272 96960 69247 57178 58119 684	
96	.65282 63025 61004 67371 88734 952	
97	.65292 28875 67941 90385 29885 819	
98	.65301 94510 99613 37898 07743 114	
99	.65311 59931 65566 84435 97026 890	

N	logarithm	ref
4500	.65321 25137 75343 67937 63169 118	
01	.65330 90129 38478 90320 41547 641	
02	.65340 54906 64501 18045 53875 252	
03	.65350 19469 62932 82682 61827 655	
04	.65359 83818 43289 81473 57993 919	
4505	.65369 47953 15081 77895 94232 912	
06	.65379 11873 87812 02225 47519 072	
07	.65388 75580 70977 52098 23360 746	(332)
08	.65398 39073 74068 93071 96874 189	
09	.65408 02353 06570 59186 91596 197	
4510	.65417 65418 77960 53525 96118 212	
11	.65427 28270 97710 48774 18624 611	
12	.65436 90909 75285 87777 79417 763	
13	.65446 53335 20145 84102 41512 306	(373)
14	.65456 15547 41743 22590 79380 980	
4515	.65465 77546 49524 59919 85934 204	
16	.65475 39332 52930 25157 17815 477	
17	.65485 00905 61394 20316 79094 550	(373)
18	.65494 62265 84344 20914 43440 179	
19	.65504 23413 31201 76522 14854 156	(373)
4520	.65513 84348 11382 11322 27048 181	
21	.65523 45070 34294 24660 81545 016	
22	.65533 05580 09340 91600 24585 234	
23	.65542 65877 45918 63471 62920 739	(374)
24	.65552 25962 53417 68426 18576 136	

N	logarithm	ref
4525	.65561 85835 41222 11986 22658 870	
26	.65571 45496 18709 77595 48298 953	
27	.65581 04944 95252 27168 82798 968	
28	.65590 64181 80215 01641 39074 895	
29	.65600 23206 82957 21517 06468 214	
4530	.65609 82020 12831 87416 41009 586	
31	.65619 40621 79185 80623 95214 300	
32	.65628 99011 91359 63634 87489 553	
33	.65638 57190 58687 80701 11233 504	
34	.65648 15157 90498 58376 83705 913	
4535	.65657 72913 96114 06063 34750 068	
36	.65667 30458 84850 16553 35445 558	
37	.65676 87792 66016 66574 66771 351	
38	.65686 44915 48917 17333 28358 500	
39	.65696 01827 42849 15055 87411 673	
4540	.65705 58528 57103 91531 67878 595	
41	.65715 15019 00966 64653 79946 359	
42	.65724 71298 83716 38959 89943 443	
43	.65734 27368 14626 06172 30726 144	
44	.65743 83227 02962 45737 52628 034	
4545	.65753 38875 57986 25365 15050 900	
46	.65762 94313 88952 01566 18775 528	
47	.65772 49542 05108 20190 79070 557	(289)
48	.65782 04560 15697 16965 39677 522	
49	.65791 59368 29955 18029 27750 068	(375)

N	logarithm	ref
4550	.65801 13966 57112 40470 49825 218	
51	.65810 68355 06392 92861 28904 428	
52	.65820 22533 87014 75792 82722 082	
53	.65829 76503 08189 82409 43278 929	
54	.65839 30262 79123 98942 17717 847	
4555	.65848 83813 09017 05241 90619 231	
56	.65858 37154 07062 75311 67793 130	
57	.65867 90285 82448 77838 61645 206	
58	.65877 43208 44356 76725 18193 396	
59	.65886 95922 01962 31619 85812 111	
4560	.65896 48426 64434 98447 25780 632	
61	.65906 00722 40938 29937 64712 276	(375)
62	.65915 52809 40629 76155 88940 785	
63	.65925 04687 72660 85029 80940 257	
64	.65934 56357 46177 02877 97854 840	
4565	.65944 07818 70317 74936 92214 285	
66	.65953 59071 54216 45887 74911 335	
67	.65963 10116 07000 60382 20516 810	(315)
68	.65972 60952 37791 63568 15008 142	
69	.65982 11580 55705 01614 45986 992	
4570	.65991 62000 69850 22235 35461 452	
71	.66001 12212 89330 75214 15268 241	
72	.66010 62217 23244 12926 45210 178	
73	.66020 12013 80681 90862 73984 102	
74	.66029 61602 70729 68150 42974 283	

N	logarithm	ref
4575	.66039 10984 02467 08075 32986 276	
76	.66048 60157 84967 78602 53996 028	
77	.66058 09124 27299 52896 77988 967	
78	.66067 57883 38524 09842 14963 642	
79	.66077 06435 27697 34561 32174 422	
4580	.66086 54780 03869 18934 16687 603	
81	.66096 02917 76083 62115 81325 181	
82	.66105 50848 53378 71054 14070 442	
83	.66114 98572 44786 61006 71009 378	(375)
84	.66124 46089 59333 56057 12881 857	
4585	.66133 93400 06039 89630 85316 346	
86	.66143 40503 93920 05010 42821 865	
87	.66152 87401 31982 55850 16610 768	
88	.66162 34092 29230 06690 26325 791	
89	.66171 80576 94659 33470 35744 739	
4590	.66181 26855 37261 24042 52536 041	
91	.66190 72927 66020 78683 72138 302	(305)
92	.66200 18793 89917 10607 65836 875	
93	.66209 64454 17923 46476 13110 346	
94	.66219 09908 59007 26909 78319 743	
4595	.66228 55157 22130 06998 31813 139	
96	.66238 00200 16247 56810 15518 222	
97	.66247 45037 50309 61901 53095 308	(318)
98	.66256 89669 33260 23825 04723 130	
99	.66266 34095 74037 60637 66589 656	

N	logarithm	ref	
4600	.66275 78316 81574 07408 15160 070	(376)	
01	.66285 22332 64796 16723 96293 927		
02	.66294 66143 32624 59197 59283 405		
03	.66304 09748 93974 23972 35884 449		
04	.66313 53149 57754 19227 64412 509		
4605	.66322 96345 32867 72683 58974 451		
06	.66332 39336 28212 32105 23908 114		
07	.66341 82122 52679 65806 13500 892		
08	.66351 24704 15155 63151 37058 590		
09	.66360 67081 24520 35060 09395 706		
4610	.66370 09253 89648 14507 46818 185		
11	.66379 51222 19407 57026 08669 579		
12	.66388 92986 22661 41206 84511 438		
13	.66398 34546 08266 69199 27008 657		
14	.66407 75901 85074 67211 30590 380		
4615	.66417 17053 61930 86008 55956 983		
16	.66426 58001 47675 01413 00503 517		
17	.66435 98745 51141 14801 14729 920		
18	.66445 39285 81157 53601 64708 163		
19	.66454 79622 46546 71792 40676 427		
4620	.66464 19755 56125 50397 11830 278		(266)
21	.66473 59685 18704 97981 27380 695		
22	.66482 99411 43090 51147 63948 731		
23	.66492 38934 38081 75031 19366 447		
24	.66501 78254 12472 63793 52953 676		

N	logarithm	ref
4625	.66511 17370 75051 41116 72340 054	
26	.66520 56284 34600 60696 66901 672	
27	.66529 94994 99897 06735 87881 563	
28	.66539 33502 79711 94435 75263 171	
29	.66548 71807 82810 70488 31465 817	
4630	.66558 09910 17953 13567 41931 084	
31	.66567 47809 93893 34819 42668 947	
32	.66576 85507 19379 78353 34832 338	
33	.66586 23002 03155 21730 46388 786	
34	.66595 60294 53956 76453 40957 607	
4635	.66604 97384 80515 88454 73881 064	
36	.66614 34272 91558 38584 95597 790	
37	.66623 70958 95804 43100 02386 666	(113,253)
38	.66633 07443 01968 54148 34549 252	
39	.66642 43725 18759 60257 22098 753	(253)
4640	.66651 79805 54880 86818 78023 419	
41	.66661 15684 19029 96575 39192 141	
42	.66670 51361 19898 90104 54969 959	
43	.66679 86836 66174 06303 23611 024	(377)
44	.66689 22110 66536 22871 76496 524	
4645	.66698 57183 29660 56797 10284 931	
46	.66707 92054 64216 64835 67041 852	
47	.66717 26724 78868 43995 62416 655	
48	.66726 61193 82274 32018 61932 948	
49	.66735 95461 83087 07861 05459 871	(35,254)

N	logarithm	ref
4650	.66745 29528 89953 92174 79931 086	(377)
51	.66754 63395 11516 47787 40378 222	
52	.66763 97060 56410 80181 79345 452	
53	.66773 30525 33267 37975 44751 772	
54	.66782 63789 50711 13399 06267 444	
4655	.66791 96853 17361 42774 70270 982	(276)
56	.66801 29716 41832 06993 43452 938	
57	.66810 62379 32731 31992 45132 672	
58	.66819 94841 98661 89231 68354 162	
59	.66829 27104 48220 96169 89826 838	
4660	.66838 59166 90000 16740 28777 302	(378)
61	.66847 91029 32585 61825 54777 710	
62	.66857 22691 84557 89732 44616 494	
63	.66866 54154 54492 06665 88276 991	
64	.66875 85417 50957 67202 44089 470	
4665	.66885 16480 82518 74763 43121 918	
66	.66894 47344 57733 82087 42874 878	
67	.66903 78008 85155 91702 30345 524	
68	.66913 08473 73332 56396 74526 044	
69	.66922 38739 30805 79691 28401 338	
4670	.66931 68805 66112 16308 80510 898	(378)
71	.66940 98672 87782 72644 56139 685	
72	.66950 28341 04343 07235 68202 688	
73	.66959 57810 24313 31230 17887 759	
74	.66968 87080 56208 08855 45121 237	

N	logarithm	ref
4675	.66978 16152 08536 57886 28920 761	(298)
76	.66987 45024 89802 50112 37699 580	
77	.66996 73699 08504 11805 29586 571	
78	.67006 02174 73134 24185 02826 095	
79	.67015 30451 92180 23885 96321 689	
4680	.67024 58530 74124 03422 40387 539	
81	.67033 86411 27442 11653 57771 555	
82	.67043 14093 60605 54248 15013 780	
83	.67052 41577 82079 94148 24203 781	
84	.67061 68864 00325 52032 95200 548	
4685	.67070 95952 23797 06781 38378 374	
86	.67080 22842 60943 95935 17962 043	
87	.67089 49535 20210 16160 56014 608	
88	.67098 76030 10034 23709 87140 915	
89	.67108 02327 38849 34882 63969 931	
4690	.67117 28427 15083 26486 13478 878	(378)
91	.67126 54329 47158 36295 44222 033	
92	.67135 80034 43491 63513 04526 993	
93	.67145 05542 12494 69227 91721 095	
94	.67154 30852 62573 76874 12450 599	
4695	.67163 55966 02129 72688 94155 134	
96	.67172 80882 39558 06170 47759 828	
97	.67182 05601 83248 90534 81647 436	
98	.67191 30124 41587 03172 66972 707	
99	.67200 54450 22951 86105 54381 114	

N	logarithm	ref
4700	.67209 78579 35717 46441 42193 994	(281)
01	.67219 02511 88252 56829 96122 061	
02	.67228 26247 88920 55917 20569 124	
03	.67237 49787 46079 48799 81587 810	
04	.67246 73130 68082 07478 81548 941	
4705	.67255 96277 63275 71312 85586 158	
06	.67265 19228 40002 47470 99877 291	
07	.67274 41983 06599 11385 01823 854	
08	.67283 64541 71397 07201 22190 002	
09	.67292 86904 42722 48231 79262 139	
4710	.67302 09071 28896 17405 65090 332	
11	.67311 31042 38233 67718 83872 534	
12	.67320 52817 79045 22684 42542 600	
13	.67329 74397 59635 76781 93622 914	
14	.67338 95781 88304 95906 30402 412	
4715	.67348 16970 73347 17816 34500 675	
16	.67357 37964 23051 52582 75878 667	
17	.67366 58762 45701 83035 65356 613	
18	.67375 79365 49576 65211 59699 435	
19	.67384 99773 42949 28800 19330 037	
4720	.67394 19986 34087 77590 18730 687	(362)
21	.67403 40004 31254 89915 09592 621	
22	.67412 59827 42708 19098 36773 911	(379)
23	.67421 79455 76699 93898 07125 569	
24	.67430 98889 41477 18951 11245 743	

N	logarithm	ref
4725	.67440 18128 45281 75216 98221 789	(379)
26	.67449 37172 96350 20421 03419 914	
27	.67458 56023 02913 89497 29381 989	
28	.67467 74678 73198 95030 79889 051	
29	.67476 93140 15426 27699 47250 917	
4730	.67486 11407 37811 56715 52881 245	(380)
31	.67495 29480 48565 30266 41217 310	
32	.67504 47359 55892 75955 27043 639	
33	.67513 65044 67994 01240 96278 587	
34	.67522 82535 93063 93877 60282 851	
4735	.67531 99833 39292 22353 63748 812	
36	.67541 16937 14863 36330 46229 526	
37	.67550 33847 27956 67080 57366 089	
38	.67559 50563 86746 27925 25872 016	
39	.67568 67086 99401 14671 82333 189	
4740	.67577 83416 74085 06050 35881 845	
41	.67586 99553 18956 64150 04802 974	
42	.67596 15496 42169 34855 01131 440	
43	.67605 31246 51871 48279 69298 010	
44	.67614 46803 56206 19203 78882 440	
4745	.67623 62167 63311 47506 71531 637	
46	.67632 77338 81320 18601 62100 852	
47	.67641 92317 18360 03868 94075 777	
48	.67651 07102 82553 61089 49333 319	
49	.67660 21695 82018 34877 12298 755	

N	logarithm	ref
4750	.67669 36096 24866 57110 88556 863	(381)
51	.67678 50304 19205 47366 77974 580	
52	.67687 64319 73137 13349 02392 599	
53	.67696 78142 94758 51320 87943 289	
54	.67705 91773 92161 46535 02052 183	
4755	.67715 05212 73432 73663 45180 249	(381)
56	.67724 18459 46653 97226 97364 024	
57	.67733 31514 19901 72024 19610 643	
58	.67742 44377 01247 43560 10204 697	
59	.67751 57047 98757 48474 15983 770	
4760	.67760 69527 20493 14967 98639 424	
61	.67769 81814 74510 63232 56100 310	
62	.67778 93910 68861 05874 99054 025	
63	.67788 05815 11590 48344 82664 209	
64	.67797 17528 10739 89359 93539 334	
4765	.67806 29049 74345 21331 92009 530	
66	.67815 40380 10437 30791 09767 724	
67	.67824 51519 27041 98811 02931 266	
68	.67833 62467 32180 01432 60580 163	
69	.67842 73224 33867 10087 68827 925	
4770	.67851 83790 40113 92022 30480 981	
71	.67860 94165 58926 10719 40342 509	
72	.67870 04349 98304 26321 16216 458	
73	.67879 14343 66243 96050 85667 460	
74	.67888 24146 70735 74634 28592 247	

N	logarithm	ref
4775	.67897 33759 19765 14720 75658 088	
76	.67906 43181 21312 67303 62663 718	
77	.67915 52412 83353 82140 40878 106	
78	.67924 61454 13859 08172 43412 360	
79	.67933 70305 20793 93944 07679 976	
4780	.67942 78966 12118 88021 54000 549	
81	.67951 87436 95789 39411 20401 996	
82	.67960 95717 79755 97977 53676 252	
83	.67970 03808 71964 14860 56743 321	(381)
84	.67979 11709 80354 42892 92378 491	
4785	.67988 19421 12862 37016 43357 427	
86	.67997 26942 77418 54698 29073 795	
87	.68006 34274 81948 56346 78683 967	(382)
88	.68015 41417 34373 05726 60833 303	
89	.68024 48370 42607 70373 70018 405	(382)
4790	.68033 55134 14563 22009 69639 670	
91	.68042 61708 58145 36955 91798 385	
92	.68051 68093 81254 96546 93892 533	
93	.68060 74289 91787 87543 72065 388	(383)
94	.68069 80296 97635 02546 31560 918	
4795	.68078 86115 06682 40406 14039 910	
96	.68087 91744 26811 06637 81910 683	
97	.68096 97184 65897 13830 59728 144	
98	.68106 02436 31811 82059 32714 890	
99	.68115 07499 32421 39295 02457 968	(383)

N	logarithm	ref
4800	.68124 12373 75587 21814 99834 822	(384)
01	.68133 17059 69165 74612 55221 901	
02	.68142 21557 21008 51806 26039 291	
03	.68151 25866 38962 17048 81684 678	
04	.68160 29987 30868 43935 45909 876	
4805	.68169 33920 04564 16411 96693 055	
06	.68178 37664 67881 29182 23659 742	
07	.68187 41221 28646 88115 43105 593	
08	.68196 44589 94683 10652 70673 842	
09	.68205 47770 73807 26213 51740 274	
4810	.68214 50763 73831 76601 49558 475	(293)
11	.68223 53569 02564 16409 91218 049	
12	.68232 56186 67807 13426 71468 409	
13	.68241 58616 77358 49039 14460 668	
14	.68250 60859 39011 18637 93460 097	
4815	.68259 62914 60553 32021 08581 512	(384)
16	.68268 64782 49768 13797 22599 907	
17	.68277 66463 14434 03788 54888 550	
18	.68286 67956 62324 57433 33536 697	
19	.68295 69263 01208 46188 05699 002	
4820	.68304 70382 38849 57929 06228 612	
21	.68313 71314 83006 97353 84645 876	
22	.68322 72060 41434 86381 90494 526	
23	.68331 72619 21882 64555 17137 082	
24	.68340 72991 32094 89438 04041 199	

(24)

N	logarithm	ref
4825	.68349 73176 79811 37016 97608 569	(385)
26	.68358 73175 72767 02099 70597 923	
27	.68367 72988 18691 98714 00193 617	
28	.68376 72614 25311 60506 04771 188	
29	.68385 72054 00346 41138 39411 219	
4830	.68394 71307 51512 14687 50212 741	
31	.68403 70374 86519 76040 87457 375	
32	.68412 69256 13075 41293 77675 290	
33	.68421 67951 38880 48145 54664 015	
34	.68430 66460 71631 56295 49511 070	
4835	.68439 64784 19020 47838 39671 265	
36	.68448 62921 88734 27659 57149 508	
37	.68457 60873 88455 23829 55839 829	
38	.68466 58640 25860 87998 38071 292	
39	.68475 56221 08623 95789 40411 372	
4840	.68484 53616 44412 47192 78777 319	
41	.68493 50826 40889 66958 52905 940	
42	.68502 47851 05714 04989 10232 171	
43	.68511 44690 46539 36731 69226 729	
44	.68520 41344 71014 63570 02243 068	
4845	.68529 37813 86784 13215 77923 786	
46	.68538 34098 01487 40099 63216 559	
47	.68547 30197 22759 25761 85049 602	
48	.68556 26111 58229 79242 51716 604	
49	.68565 21841 15524 37471 34020 966	

N	logarithm	ref
4850	.68574 17386 02263 65657 06229 169	
51	.68583 12746 26063 57676 46882 949	
52	.68592 07921 94535 36462 99519 952	
53	.68601 02913 15285 54394 93352 422	
54	.68609 97719 95915 93683 23953 439	
4855	.68618 92342 44023 66758 94000 118	
56	.68627 86780 67201 16660 14123 146	
57	.68636 81034 73036 17418 63911 928	
58	.68645 75104 69111 74446 13124 565	
59	.68654 68990 63006 24920 03151 818	
4860	.68663 62692 62293 38168 88784 110	
61	.68672 56210 74542 16057 40330 589	(386)
62	.68681 49545 07316 93371 06139 182	
63	.68690 42695 68177 38200 35566 491	
64	.68699 35662 64678 52324 62446 336	
4865	.68708 28446 04370 71595 49105 662	
66	.68717 21045 94799 66319 90976 463	
67	.68726 13462 43506 41642 81852 300	
68	.68735 05695 58027 37929 39837 933	
69	.68743 97745 45894 31146 94040 504	
4870	.68752 89612 14634 33246 32050 644	
71	.68761 81295 71769 92543 08261 812	(321)
72	.68770 72796 24818 94098 13076 090	
73	.68779 64113 81294 60098 03044 609	
74	.68788 55248 48705 50234 91990 697	

N	logarithm	ref
4875	.68797 46200 34555 62086 03163 770	(386)
76	.68806 36969 46344 31492 82471 933	
77	.68815 27555 91566 32939 72841 173	
78	.68824 17959 77711 79932 49748 961	
79	.68833 08181 12266 25376 17980 029	
4880	.68841 98220 02710 61952 69651 979	
81	.68850 88076 56521 22498 03558 367	
82	.68859 77750 81169 80379 05876 781	
83	.68868 67242 84123 49869 92289 417	
84	.68877 56552 72844 86528 11563 535	
4885	.68886 45680 54791 87570 10639 163	(46,254)
86	.68895 34626 37417 92246 61271 305	
87	.68904 23390 28171 82217 48273 862	
88	.68913 11972 34497 81926 19412 416	
89	.68922 00372 63835 58973 96992 931	
4890	.68930 88591 23620 24493 51193 392	
91	.68939 76628 21282 33522 35185 297	
92	.68948 64483 64247 85375 82091 899	
93	.68957 52157 59938 24019 63829 973	
94	.68966 39650 15770 38442 11881 863	
4895	.68975 26961 39156 63026 00044 462	
96	.68984 14091 37504 77919 89201 745	
97	.68993 01040 18218 09409 34167 366	
98	.69001 87807 88695 30287 52643 813	
99	.69010 74394 56330 60225 56344 505	

N	logarithm	ref
4900	.69019 60800 28513 66142 44325 172	(386)
01	.69028 47025 12629 62574 58570 789	
02	.69037 33069 16059 12045 01884 270	
03	.69046 18932 46178 25432 18123 054	
04	.69055 04615 10358 62338 34829 656	
4905	.69063 90117 15967 31457 68302 194	(387)
06	.69072 75438 70366 90943 91150 822	
07	.69081 60579 80915 48777 62385 958	
08	.69090 45540 54966 63133 20084 104	
09	.69099 30320 99869 42745 36677 006	
4910	.69108 14921 22968 47275 36909 835	
11	.69116 99341 31603 87676 78514 003	
12	.69125 83581 33111 26560 95640 154	
13	.69134 67641 34821 78562 05096 830	
14	.69143 51521 44062 10701 75440 210	
4915	.69152 35221 68154 42753 58960 300	(387)
16	.69161 18742 14416 47606 86608 840	
17	.69170 02082 90161 51630 25914 171	
18	.69178 85244 02698 35035 01928 216	
19	.69187 68225 59331 32237 81250 669	
4920	.69196 51027 67360 32223 19175 427	
21	.69205 33650 34080 78905 70004 239	
22	.69214 16093 66783 71491 60572 464	
23	.69222 98357 72755 64840 27031 791	
24	.69231 80442 59278 69825 14934 683	

N	logarithm	ref
4925	.69240 62348 33630 53694 42665 283	
26	.69249 44075 03084 40431 28261 397	
27	.69258 25622 74909 11113 79672 174	
28	.69267 06991 56369 04274 48495 982	
29	.69275 88181 54724 16259 47242 950	
4930	.69284 69192 77230 01587 30166 573	
31	.69293 50025 31137 73307 37708 707	(290)
32	.69302 30679 23694 03358 04602 231	
33	.69311 11154 62141 22924 31675 579	(388)
34	.69319 91451 53717 22795 21403 293	
4935	.69328 71570 05655 53720 77246 666	
36	.69337 51510 25185 26768 66828 514	
37	.69346 31272 19531 13680 48986 021	(389)
38	.69355 10855 95913 47227 64745 546	
39	.69363 90261 61548 21566 92263 250	
4940	.69372 69489 23646 92595 65775 284	
41	.69381 48538 89416 78306 58601 268	
42	.69390 27410 66060 59142 30244 693	
43	.69399 06104 60776 78349 37633 846	(389)
44	.69407 84620 80759 42332 10546 767	
4945	.69416 62959 33198 21005 91263 708	
46	.69425 41120 25278 48150 38490 487	
47	.69434 19103 64181 21761 95596 092	
48	.69442 96909 57083 04406 23207 787	
49	.69451 74538 11156 23569 96206 954	

N	logarithm	ref
4950	.69460 51989 33568 72012 65168 830	(349)
51	.69469 29263 31484 08117 82289 213	
52	.69478 06360 12061 56243 91841 186	
53	.69486 83279 82456 07074 85204 830	
54	.69495 60022 49818 17970 20512 833	
4955	.69504 36588 21294 13315 06954 841	(206)
56	.69513 12977 04025 84869 53783 358	
57	.69521 89189 05150 92117 84063 908	
58	.69530 65224 31802 62617 13212 135	
59	.69539 41082 91109 92345 92360 452	
4960	.69548 16764 90197 46052 16596 790	
61	.69556 92270 36185 57600 98117 925	
62	.69565 67599 36190 30322 04339 825	
63	.69574 42751 97323 37356 61007 384	
64	.69583 17728 26692 22004 20345 842	
4965	.69591 92528 31399 98068 94296 159	(389)
66	.69600 67152 18545 50205 52876 509	
67	.69609 41599 95223 34264 87712 059	
68	.69618 15871 68523 77639 40775 062	
69	.69626 89967 45532 79607 98377 321	
4970	.69635 63887 33332 11680 50456 936	(390)
71	.69644 37631 38999 17942 15201 264	
72	.69653 11199 69607 15397 29047 893	
73	.69661 84592 32224 94313 02105 440	
74	.69670 57809 33917 18562 39035 861	

N	logarithm	ref
4975	.69679 30850 81744 25967 25439 950	
76	.69688 03716 82762 28640 79787 622	
77	.69696 76407 44023 13329 70934 516	
78	.69705 48922 72574 41756 01266 412	
79	.69714 21262 75459 50958 55512 874	
4980	.69722 93427 59717 53634 15271 500	
81	.69731 65417 32383 38478 39284 069	
82	.69740 37232 00487 70526 09505 858	
83	.69749 08871 71056 91491 43009 298	
84	.69757 80336 51113 20107 69763 125	
4985	.69766 51626 47674 52466 76328 081	
86	.69775 22741 67754 62358 15510 208	
87	.69783 93682 18363 01607 82012 676	(305)
88	.69792 64448 06505 00416 54127 056	
89	.69801 35039 39181 67698 01504 895	
4990	.69810 05456 23389 91416 59050 360	
91	.69818 75698 66122 38924 66974 710	
92	.69827 45766 74367 57299 77053 243	
93	.69836 15660 55109 73681 25125 363	(370)
94	.69844 85380 15328 95606 69878 307	
4995	.69853 54925 62001 11347 97955 046	
96	.69862 24297 02097 90246 95426 805	
97	.69870 93494 42586 83050 85670 596	
98	.69879 62517 90431 22247 33692 095	
99	.69888 31367 52590 22399 16934 135	(56,255)

N	logarithm	ref
5000	.69897 00043 36018 80478 62611 053	(391)
01	.69905 68545 47667 76201 51609 034	
02	.69914 36873 94483 72360 88992 584	
03	.69923 05028 83409 15160 41157 162	
04	.69931 73010 21382 34547 39667 983	
5005	.69940 40818 15337 44545 51824 931	(391)
06	.69949 08452 72204 43587 17993 458	
07	.69957 75913 98909 14845 55741 309	
08	.69966 43202 02373 26566 30820 838	
09	.69975 10316 89514 32398 95036 635	
5010	.69983 77258 67245 71727 91038 132	(391)
11	.69992 44027 42476 70003 24076 787	
12	.70001 10623 22112 39071 00767 398	
13	.70009 77046 13053 77503 34893 054	
14	.70018 43296 22197 70928 20293 146	
5015	.70027 09373 56436 92358 70873 841	
16	.70035 75278 22660 02522 27780 344	
17	.70044 41010 27751 50189 33770 217	
18	.70053 06569 78591 72501 74826 990	
19	.70061 71956 82056 95300 89053 220	
5020	.70070 37171 45019 33455 42882 114	(347)
21	.70079 02213 74346 91188 74646 777	
22	.70087 67083 76903 62406 05546 079	(368)
23	.70096 31781 59549 31021 18046 098	
24	.70104 96307 29139 71283 01756 035	

(25)

N	logarithm	ref
5025	.70113 60660 92526 48101 66817 430	
26	.70122 24842 56557 17374 24845 477	
27	.70130 88852 28075 26310 37461 165	
28	.70139 52690 13920 13757 32452 921	
29	.70148 16356 20927 10524 87606 389	
5030	.70156 79850 55927 39709 82240 903	
31	.70165 43173 25748 17020 16491 177	
32	.70174 06324 37212 51098 98372 680	
33	.70182 69303 97139 43847 98669 100	
34	.70191 32112 12343 90750 73680 249	
5035	.70199 94748 89636 81195 55868 727	
36	.70208 57214 35824 98798 12443 580	
37	.70217 19508 57711 21723 71919 160	
38	.70225 81631 62094 23009 18687 315	
39	.70234 43583 55768 70884 55641 025	(286)
5040	.70243 05364 45525 29094 34887 493	
41	.70251 66974 38150 57218 56588 701	
42	.70260 28413 40427 10993 35967 343	
43	.70268 89681 59133 42631 38516 032	
44	.70277 50779 01044 01141 83447 591	
5045	.70286 11705 72929 32650 15424 218	
46	.70294 72461 81555 80717 44603 239	
47	.70303 33047 33685 86659 55037 118	
48	.70311 93462 36077 89865 81465 341	
49	.70320 53706 95486 28117 54535 753	

N	logarithm	ref
5050	.70329 13781 18661 37906 14492 835	(392)
51	.70337 73685 12349 54750 93370 408	
52	.70346 33418 83293 13516 65726 161	
53	.70354 92982 38230 48730 67955 360	
54	.70363 52375 83895 94899 86221 048	
5055	.70372 11599 27019 86827 13037 987	(337)
56	.70380 70652 74328 59927 72547 548	
57	.70389 29536 32544 50545 14520 697	
58	.70397 88250 08385 96266 77126 175	
59	.70406 46794 08567 36239 18500 930	
5060	.70415 05168 39799 11483 17159 782	
61	.70423 63373 08787 65208 41281 283	
62	.70432 21408 22235 43127 86906 655	
63	.70440 79273 86840 93771 85088 658	
64	.70449 36970 09298 68801 78027 174	
5065	.70457 94496 96299 23323 64228 253	
66	.70466 51854 54529 16201 12723 317	
67	.70475 09042 90671 10368 46385 143	
68	.70483 66062 11403 73142 94377 245	
69	.70492 22912 23401 76537 13773 167	
5070	.70500 79593 33335 97570 80382 191	
71	.70509 36105 47873 18582 48817 897	
72	.70517 92448 73676 27540 81845 953	
73	.70526 48623 17404 18355 49047 487	
74	.70535 04628 85711 91187 94834 325	

N	logarithm	ref
5075	.70543 60465 85250 52761 75852 321	(392)
76	.70552 16134 22667 16672 67808 987	
77	.70560 71634 04605 03698 41761 540	
78	.70569 26965 37703 42108 09901 475	
79	.70577 82128 28597 67971 40871 682	
5080	.70586 37122 83919 25467 44652 113	(393,4)
81	.70594 91949 10295 67193 27049 923	
82	.70603 46607 14350 54472 13829 991	
83	.70612 01097 02703 57661 44521 645	
84	.70620 55418 81970 56460 35937 395	
5085	.70629 09572 58763 40217 15439 404	(277)
86	.70637 63558 39690 08236 23989 398	
87	.70646 17376 31354 70084 89017 659	
88	.70654 71026 40357 45899 67146 685	
89	.70663 24508 73294 66692 56805 073	
5090	.70671 77823 36758 74656 80767 116	
91	.70680 30970 37338 23472 38653 564	
92	.70688 83949 81617 78611 29428 944	
93	.70697 36761 76178 17642 43930 797	
94	.70705 89406 27596 30536 27466 118	
5095	.70714 41883 42445 19969 12510 276	(394)
96	.70722 94193 27294 01627 21543 593	
97	.70731 46335 88708 04510 40060 758	
98	.70739 98311 33248 71235 59788 173	
99	.70748 50119 67473 58339 92144 293	

N	logarithm	ref
5100	.70757 01760 97936 36583 51977 976	(395)
01	.70765 53235 31186 91252 11619 801	
02	.70774 04542 73771 22459 25281 273	
03	.70782 55683 32231 45448 23836 781	
04	.70791 06657 13105 90893 80023 131	
5105	.70799 57464 22929 05203 44091 422	(395)
06	.70808 08104 68231 50818 49945 998	
07	.70816 58578 55540 06514 91805 138	
08	.70825 08885 91377 67703 71418 134	
09	.70833 59026 82263 46731 15873 319	
5110	.70842 09001 34712 73178 66031 591	(396)
11	.70850 58809 55236 94162 35619 916	
12	.70859 08451 50343 74632 41019 257	
13	.70867 57927 26536 97672 01781 306	
14	.70876 07236 90316 64796 11908 385	
5115	.70884 56380 48178 96249 81930 799	(396)
16	.70893 05358 06616 31306 51815 898	
17	.70901 54169 72117 28565 74743 062	
18	.70910 02815 51166 66250 71778 743	
19	.70918 51295 50245 42505 57485 709	
5120	.70926 99609 75830 75692 36500 525	
21	.70935 47758 34396 04687 71113 305	
22	.70943 95741 32410 89179 19883 704	
23	.70952 43558 76341 09961 47327 071	
24	.70960 91210 72648 69232 04704 651	

N	logarithm	ref
5125	.70969 38697 27791 90886 81951 658	
26	.70977 86018 48225 20815 30777 014	
27	.70986 33174 40399 27195 58968 489	
28	.70994 80165 10761 00788 95936 938	
29	.71003 26990 65753 55234 29533 285	
5130	.71011 73651 11816 27342 14171 855	
31	.71020 20146 55384 77388 50293 612	
32	.71028 66477 02890 89408 35202 805	
33	.71037 12642 60762 71488 85310 508	
34	.71045 58643 35424 56062 29818 444	
5135	.71054 04479 33297 00198 75876 497	
36	.71062 50150 60796 85898 45247 216	
37	.71070 95657 24337 20383 82510 610	
38	.71079 40999 30327 36391 34842 463	
39	.71087 86176 85172 92463 03399 365	
5140	.71096 31189 95275 73237 66343 606	
41	.71104 76038 67033 89741 73541 033	
42	.71113 20723 06841 79680 12964 927	
43	.71121 65243 21090 07726 48838 919	
44	.71130 09599 16165 65813 31551 896	
5145	.71138 53790 98451 73421 79377 843	
46	.71146 97818 74327 77871 32033 469	
47	.71155 41682 50169 54608 76106 477	(397)
48	.71163 85382 32349 07497 42387 251	
49	.71172 28918 27234 69105 75136 706	

N	logarithm	ref
5150	.71180 72290 41191 00995 73322 999	(397)
51	.71189 15498 80578 94011 03859 758	
52	.71197 58543 51755 68564 86878 445	
53	.71206 01424 61074 74927 53067 398	
54	.71214 44142 14885 93513 73110 102	
5155	.71222 86696 19535 35169 59255 143	
56	.71231 29086 81365 41459 39050 287	
57	.71239 71314 06714 84952 01273 080	
58	.71248 13378 01918 69507 14090 304	
59	.71256 55278 73308 30561 15478 591	
5160	.71264 97016 27211 35412 75938 459	
61	.71273 38590 69951 83508 33533 986	
62	.71281 80002 07850 06727 01290 274	
63	.71290 21250 47222 69665 46980 854	
64	.71298 62335 94382 69922 45337 097	
5165	.71307 03258 55639 38383 02711 680	(374)
66	.71315 44018 37298 39502 54228 098	
67	.71323 84615 45661 71590 33448 175	
68	.71332 25049 87027 67093 14589 490	
69	.71340 65321 67690 92878 27324 573	
5170	.71349 05430 93942 50516 44193 707	(350)
71	.71357 45377 72069 76564 40663 101	
72	.71365 85162 08356 42847 27860 189	
73	.71374 24784 09082 56740 58017 729	
74	.71382 64243 80524 61452 02658 371	

N	logarithm	ref
5175	.71391 03541 28955 36303 03551 293	(347)
76	.71399 42676 60643 97009 96472 470	
77	.71407 81649 81855 95965 07800 100	
78	.71416 20460 98853 22517 23976 677	
79	.71424 59110 17894 03252 33869 128	
5180	.71432 97597 45233 02273 44058 429	
81	.71441 35922 87121 21480 67090 044	
82	.71449 74086 49806 00850 82716 499	
83	.71458 12088 39531 18716 72163 355	
84	.71466 49928 62536 92046 25449 814	
5185	.71474 87607 25059 76721 21795 134	(397)
86	.71483 25124 33332 67815 83142 001	
87	.71491 62479 93584 99875 00827 955	
88	.71499 99674 12042 47192 35435 923	
89	.71508 36706 94927 24087 89854 880	
5190	.71516 73578 48457 85185 55581 620	
91	.71525 10288 78849 25690 32294 547	
92	.71533 46837 92312 81665 20730 400	
93	.71541 83225 95056 30307 88894 741	
94	.71550 19452 93283 90227 11637 035	
5195	.71558 55518 93196 21718 83621 066	(330)
96	.71566 91424 00990 27042 05721 424	
97	.71575 27168 22859 50694 44876 746	
98	.71583 62751 64993 79687 67430 356	
99	.71591 98174 33579 43822 45988 888	

N	logarithm	ref
5200	.71600 33436 34799 15963 39829 474	(310)
01	.71608 68537 74832 12313 48885 998	
02	.71617 03478 59853 92688 41344 899	
03	.71625 38258 96036 60790 54880 957	
04	.71633 72878 89548 64482 71563 463	
5205	.71642 07338 46554 96061 66463 117	
06	.71650 41637 73216 92531 29989 976	
07	.71658 75776 75692 35875 63992 718	
08	.71667 09755 60135 53331 51649 461	
09	.71675 43574 32697 17661 01180 322	
5210	.71683 77232 99524 47423 63411 866	
11	.71692 10731 66761 07248 23223 561	
12	.71700 44070 40547 08104 64906 307	
13	.71708 77249 27019 07575 11463 061	
14	.71717 10268 32310 10125 37881 557	
5215	.71725 43127 62549 67375 58409 065	
16	.71733 75827 23863 78370 87859 095	
17	.71742 08367 22374 89851 76979 922	
18	.71750 40747 64201 96524 21914 749	
19	.71758 72968 55460 41329 47783 309	
5220	.71767 05030 02262 15713 66414 642	
21	.71775 36932 10715 59897 08260 770	
22	.71783 68674 86925 63143 28520 920	
23	.71792 00258 36993 64027 87505 942	
24	.71800 31682 67017 50707 05272 496	

(26)

N	logarithm	ref
5225	.71808 62947 83091 61185 90556 576	
26	.71816 94053 91306 83586 44035 851	
27	.71825 25000 97750 56415 35950 336	(398)
28	.71833 55789 08506 68831 58110 775	
29	.71841 86418 29655 60913 50324 171	
5230	.71850 16888 67274 23926 01265 789	
31	.71858 47200 27436 00587 23826 950	(398)
32	.71866 77353 16210 85335 04967 898	
33	.71875 07347 39665 24593 30104 965	(399)
34	.71883 37183 03862 17037 82061 235	
5235	.71891 66860 14861 13862 14609 857	
36	.71899 96378 78718 19043 00639 136	
37	.71908 25739 01485 89605 54968 467	(399)
38	.71916 54940 89213 35888 31844 162	
39	.71924 83984 47946 21807 97144 160	
5240	.71933 12869 83726 65123 75320 601	
41	.71941 41597 02593 37701 71109 163	
42	.71949 70166 10581 65778 66034 063	
43	.71957 98577 13723 30225 89737 566	
44	.71966 26830 18046 66812 66162 807	
5245	.71974 54925 29576 66469 34618 692	
46	.71982 82862 54334 75550 45755 617	
47	.71991 10641 98338 96097 32480 694	
48	.71999 38263 67603 86100 55841 130	
49	.72007 65727 68140 59762 25904 394	

N	logarithm	ref
5250	.72015 93034 05956 87757 97663 724	
51	.72024 20182 87056 97498 41997 542	
52	.72032 47174 17441 73390 91711 256	
53	.72040 74008 03108 57100 62689 922	
54	.72049 00684 50051 47811 50190 193	
5255	.72057 27203 64261 02487 00299 944	
56	.72065 53565 51724 36130 56593 912	
57	.72073 79770 18425 22045 82013 678	
58	.72082 05817 70343 92096 56000 261	
59	.72090 31708 13457 36966 46907 549	
5260	.72098 57441 53739 06418 59724 786	
61	.72106 83017 97159 09554 59136 267	(399)
62	.72115 08437 49684 15073 67946 360	
63	.72123 33700 17277 51531 40897 954	
64	.72131 58806 05899 07598 13912 369	
5265	.72139 83755 21505 32317 28778 762	
66	.72148 08547 70049 35363 33320 973	
67	.72156 33183 57480 87299 57069 778	
68	.72164 57662 89746 19835 62468 433	
69	.72172 81985 72788 26084 71639 382	
5270	.72181 06152 12546 60820 68739 944	
71	.72189 30162 14957 40734 77934 786	
72	.72197 54015 85953 44692 17012 912	
73	.72205 77713 31464 13988 26676 916	(400)
74	.72214 01254 57415 52604 75532 138	

N	logarithm	ref
5275	.72222 24639 69730 27465 40803 405	(281)
76	.72230 47868 74327 68691 64806 931	
77	.72238 70941 77123 69857 87204 972	
78	.72246 93858 84030 88246 53070 742	
79	.72255 16620 00958 45102 96791 113	
5280	.72263 39225 33812 25890 01834 534	(325)
81	.72271 61674 88494 80542 36411 612	
82	.72279 83968 70905 23720 65055 728	
83	.72288 06106 86939 35065 36151 051	
84	.72296 28089 42489 59450 45435 249	
5285	.72304 49916 43445 07236 75504 192	
86	.72312 71587 95691 54525 11345 875	
87	.72320 93104 05111 43409 31930 776	
88	.72329 14464 77583 82228 77885 819	
89	.72337 35670 18984 45820 95279 065	
5290	.72345 56720 35185 75773 55542 245	
91	.72353 77615 32056 80676 51558 187	
92	.72361 98355 15463 36373 69940 164	
93	.72370 18939 91267 86214 39530 157	
94	.72378 39369 65329 41304 56142 989	
5295	.72386 59644 43503 80757 83583 245	(400)
96	.72394 79764 31643 51946 30961 862	
97	.72402 99729 35597 70751 06339 246	
98	.72411 19539 61212 21812 46721 713	
99	.72419 39195 14329 58780 24438 049	

N	logarithm	ref
5300	.72427 58696 00789 04563 29922 916	(401)
01	.72435 78042 26426 51579 30933 824	
02	.72443 97233 97074 62004 08228 324	
03	.72452 16271 18562 68020 67728 080	
04	.72460 35153 96716 72068 29196 397	
5305	.72468 53882 37359 47090 91455 793	(401)
06	.72476 72456 46310 36785 74172 128	
07	.72484 90876 29385 55851 36231 800	
08	.72493 09141 92397 90235 70738 459	
09	.72501 27253 41156 97383 76655 668	
5310	.72509 45210 81469 06485 07121 910	
11	.72517 63014 19137 18720 94464 281	
12	.72525 80663 59961 07511 51937 204	
13	.72533 98159 09737 18762 52212 453	
14	.72542 15500 74258 71111 82646 728	
5315	.72550 32688 59315 56175 77352 999	
16	.72558 49722 70694 38795 26101 824	
17	.72566 66603 14178 57281 60078 757	
18	.72574 83329 95548 23662 14523 987	
19	.72582 99903 20580 23925 68280 275	
5320	.72591 16322 95048 18267 60275 238	(108,256)
21	.72599 32589 24722 41334 82963 992	
22	.72607 48702 15370 02470 52758 129	
23	.72615 64661 72754 85958 57466 974	
24	.72623 80468 02637 51267 80777 032	

N	logarithm	ref	
5325	.72631 96121 10775 33296 03795 488	(401)	
26	.72640 11621 02922 42613 83683 626		
27	.72648 26967 84829 65708 09405 942		
28	.72656 42161 62244 65225 34620 749		
29	.72664 57202 40911 80214 87738 009		
5330	.72672 72090 26572 26371 59170 079		
31	.72680 86825 24963 96278 65801 068		
32	.72689 01407 41821 59649 92700 428		
33	.72697 15836 82876 63572 12106 385		
34	.72705 30113 53857 32746 79704 784		
5335	.72713 44237 60488 69732 08228 882		
36	.72721 58209 08492 55184 18405 594		
37	.72729 72028 03587 48098 67273 663		
38	.72737 85694 51488 86051 53899 190		
39	.72745 99208 57908 85440 02513 920		
5340	.72754 12570 28556 41723 23101 677		
41	.72762 25779 69137 29662 49458 248		
42	.72770 38836 85354 03561 54750 059		
43	.72778 51741 82905 97506 44596 883		
44	.72786 64494 67489 25605 27703 835		
5345	.72794 77095 44796 82227 64067 851		(402)
46	.72802 89544 20518 42243 90783 822		
47	.72811 01841 00340 61264 25475 527		
48	.72819 13985 89946 75877 47376 463		
49	.72827 25978 95017 03889 56085 650		

N	logarithm	ref
5350	.72835 37820 21228 44562 08023 447	(402)
51	.72843 49509 74254 78850 30612 394	
52	.72851 61047 59766 69641 14208 037	
53	.72859 72433 83431 61990 81804 699	
54	.72867 83668 50913 83362 36541 091	
5355	.72875 94751 67874 43862 87030 647	
56	.72884 05683 39971 36480 50541 420	
57	.72892 16463 72859 37321 34050 357	
58	.72900 27092 72190 05845 93196 732	
59	.72908 37570 43611 85105 69159 477	
5360	.72916 47896 92770 01979 03483 134	
61	.72924 58072 25306 67407 30877 100	
62	.72932 68096 46860 76630 50012 828	
63	.72940 77969 63068 09422 72343 589	
64	.72948 87691 79561 30327 48971 386	
5365	.72956 97263 01969 88892 75585 578	
66	.72965 06683 35920 19905 75497 725	
67	.72973 15952 87035 43627 60797 153	
68	.72981 25071 60935 66027 71651 692	
69	.72989 34039 63237 79017 93778 011	
5370	.72997 42856 99555 60686 54105 950	
71	.73005 51523 75499 75531 94661 207	
72	.73013 60039 96677 74696 24690 703	
73	.73021 68405 68693 96198 51054 942	
74	.73029 76620 97149 65167 86911 615	

N	logarithm	ref
5375	.73037 84685 87642 94076 38714 691	
76	.73045 92600 45768 82971 71553 196	
77	.73054 00364 77119 19709 52853 863	
78	.73062 07978 87282 80185 74471 770	
79	.73070 15442 81845 28568 53193 104	
5380	.73078 22756 66389 17530 09674 106	
81	.73086 29920 46493 88478 25840 257	(403)
82	.73094 36934 27735 71787 80769 714	
83	.73102 43798 15687 87031 65084 986	
84	.73110 50512 15920 43211 73876 790	
5385	.73118 57076 34000 38989 78184 029	
86	.73126 63490 75491 62917 75053 765	
87	.73134 69755 45954 93668 16205 052	(403)
88	.73142 75870 50948 00264 15320 464	
89	.73150 81835 96025 42309 33989 107	
5390	.73158 87651 86738 70217 46324 884	
91	.73166 93318 28636 25441 82283 756	
92	.73174 98835 27263 40704 49703 691	
93	.73183 04202 88162 40225 35090 988	(403)
94	.73191 09421 16872 39950 83176 611	
5395	.73199 14490 18929 47782 55266 152	
96	.73207 19409 99866 63805 66407 002	
97	.73215 24180 65213 80517 01396 278	
98	.73223 28802 20497 83053 09653 034	
99	.73231 33274 71242 49417 78978 251	(388)

N	logarithm	ref
5400	.73239 37598 22968 50709 88226 045	
01	.73247 41772 81193 51350 38909 548	
02	.73255 45798 51432 09309 65764 847	
03	.73263 49675 39195 76334 26296 355	
04	.73271 53403 49992 98173 69326 944	
5405	.73279 56982 89329 14806 82576 170	
06	.73287 60413 62706 60668 19289 839	
07	.73295 63695 75624 64874 03944 191	(404)
08	.73303 66829 33579 51448 17047 895	
09	.73311 69814 42064 39547 59065 065	
5410	.73319 72651 06569 43687 93482 439	
11	.73327 75339 32581 73968 69043 858	
12	.73335 77879 25585 36298 21175 139	
13	.73343 80270 91061 32618 52622 415	(404)
14	.73351 82514 34487 61129 93326 971	
5415	.73359 84609 61339 16515 39559 600	
16	.73367 86556 77087 90164 72337 445	
17	.73375 88355 87202 70398 55146 274	(318)
18	.73383 90006 97149 42692 10991 131	
19	.73391 91510 12390 89898 78798 217	(405)
5420	.73399 92865 38386 92473 49190 896	
21	.73407 94072 80594 28695 79662 635	
22	.73415 95132 44466 74892 89169 686	
23	.73423 96044 35455 05662 32166 285	
24	.73431 96808 59006 94094 52105 108	

(27)

N	logarithm	ref
5425	.73439 97425 20567 11995 14425 693	
26	.73447 97894 25577 30107 19053 525	
27	.73455 98215 79476 18332 92432 422	
28	.73463 98389 87699 45955 59112 862	
29	.73471 98416 55679 81860 92918 835	
5430	.73479 98295 88846 94758 47715 797	
31	.73487 98027 92627 53402 67802 264	(405)
32	.73495 97612 72445 26813 77947 544	
33	.73503 97050 33720 84498 53098 103	
34	.73511 96340 81871 96670 67774 997	
5435	.73519 95484 22313 34471 25184 816	
36	.73527 94480 60456 70188 66066 513	
37	.73535 93330 01710 77478 57296 488	(406)
38	.73543 92032 51481 31583 60274 271	
39	.73551 90588 15171 09552 79111 100	
5440	.73559 88996 98179 90460 88643 680	
41	.73567 87259 05904 55627 42295 365	(406)
42	.73575 85374 43738 88835 59806 995	
43	.73583 83343 17073 76550 94859 569	(407)
44	.73591 81165 31297 08139 82610 920	
5445	.73599 78840 91793 76087 67168 543	
46	.73607 76370 03945 76217 09020 650	
47	.73615 73752 73132 07905 72447 573	
48	.73623 70989 04728 74303 92935 522	
49	.73631 68079 04108 82552 24614 754	(407)

N	logarithm	ref
5450	.73639 65022 76642 43998 67744 129	
51	.73647 61820 27696 74415 76264 020	
52	.73655 58471 62635 94217 45439 519	
53	.73663 54976 86821 28675 79615 843	
54	.73671 51336 05611 08137 40107 827	
5455	.73679 47549 24360 68239 73245 346	
56	.73687 43616 48422 50127 18596 503	
57	.73695 39537 83146 00666 97390 370	
58	.73703 35313 33877 72664 81161 062	
59	.73711 30943 05961 25080 40634 862	
5460	.73719 26427 04737 23242 74882 145	
61	.73727 21765 35543 39065 20755 751	
62	.73735 16958 03714 51260 42637 484	
63	.73743 12005 14582 45555 02514 370	
64	.73751 06906 73476 14904 10406 252	
5465	.73759 01662 85721 59705 55166 329	
66	.73766 96273 56641 88014 15676 158	
67	.73774 90738 91557 15755 52456 649	
68	.73782 85058 95784 66939 79716 551	
69	.73790 79233 74638 73875 17859 879	
5470	.73798 73263 33430 77381 26473 725	
71	.73806 67147 77469 27002 17817 870	(408)
72	.73814 60887 12059 81219 50837 559	
73	.73822 54481 42505 07665 05720 814	
74	.73830 47930 74104 83333 39021 599	

N	logarithm	ref
5475	.73838 41235 12155 94794 19370 143	
76	.73846 34394 61952 38404 43791 685	
77	.73854 27409 28785 20520 34654 901	(393)
78	.73862 20279 17942 57709 17271 212	
79	.73870 13004 34709 76960 78166 184	(408)
5480	.73878 05584 84369 15899 04044 166	
81	.73885 98020 72200 22993 01467 313	
82	.73893 90312 03479 57767 97270 109	
83	.73901 82458 83480 91016 19730 451	(409)
84	.73909 74461 17475 05007 60518 379	
5485	.73917 66319 10729 93700 17443 458	
86	.73925 58032 68510 62950 18021 826	
87	.73933 49601 96079 30722 23883 879	
88	.73941 41026 98695 27299 16043 547	
89	.73949 32307 81614 95491 61050 073	
5490	.73957 23444 50091 90847 58043 203	
91	.73965 14437 09376 81861 66732 644	
92	.73973 05285 64717 50184 16322 643	
93	.73980 95990 21358 90829 95402 487	
94	.73988 86550 84543 12387 22823 739	
5495	.73996 76967 59509 37225 99584 938	
96	.74004 67240 51494 01706 41744 530	
97	.74012 57369 65730 56386 94382 724	
98	.74020 47355 07449 66232 26632 959	
99	.74028 37196 81879 10821 07803 639	

N	logarithm	ref
5500	.74036 26894 94243 84553 64610 765	
01	.74044 16449 49765 96859 19542 078	(210)
02	.74052 05860 53664 72403 10373 273	
03	.74059 95128 11156 51293 90856 858	(409)
04	.74067 84252 27454 89290 12604 163	
5505	.74075 73233 07770 58006 88181 015	
06	.74083 62070 57311 45122 35437 543	
07	.74091 50764 81282 54584 03092 563	(410)
08	.74099 39315 84886 06814 77592 968	
09	.74107 27723 73321 38918 71268 517	
5510	.74115 15988 51785 04886 91802 387	
11	.74123 04110 25470 75802 93037 844	
12	.74130 92088 99569 40048 07141 337	
13	.74138 79924 79269 03506 58142 322	
14	.74146 67617 69754 89770 56870 066	
5515	.74154 55167 76209 40344 77307 691	
16	.74162 42575 03812 14851 14383 658	
17	.74170 29839 57739 91233 23220 880	
18	.74178 16961 43166 65960 39863 645	
19	.74186 03940 65263 54231 83502 470	(330)
5520	.74193 90777 29198 90180 40216 997	
21	.74201 77471 40138 27076 28257 042	(410)
22	.74209 64023 03244 37530 44881 827	
23	.74217 50432 23677 13697 94777 457	
24	.74225 36699 06593 67481 00072 639	

N	logarithm	ref
5525	.74233 22823 57148 30731 91972 628	(341)
26	.74241 08805 80492 55455 84031 378	
27	.74248 94645 81775 14013 27081 802	
28	.74256 80343 66141 99322 45844 085	
29	.74264 65899 38736 25061 57231 907	
5530	.74272 51313 04698 25870 70376 451	(410)
31	.74280 36584 69165 57553 68388 026	
32	.74288 21714 37272 97279 71875 112	
33	.74296 06702 14152 43784 84240 615	
34	.74303 91548 04933 17573 18775 088	
5535	.74311 76252 14741 61118 07566 650	
36	.74319 60814 48701 39062 92247 324	
37	.74327 45235 11933 38421 96595 458	
38	.74335 29514 09555 68780 81013 910	
39	.74343 13651 46683 62496 78903 612	
5540	.74350 97647 28429 74899 14952 143	
41	.74358 81501 59903 84489 05356 871	
42	.74366 65214 46212 93139 40002 250	
43	.74374 48785 92461 26294 46610 787	
44	.74382 32216 03750 33169 36887 205	
5545	.74390 15504 85178 86949 34675 275	
46	.74397 98652 41842 84988 86146 787	
47	.74405 81658 78835 49010 52042 097	
48	.74413 64524 01247 25303 81981 657	
49	.74421 47248 14165 84923 70867 919	

N	logarithm	ref
5550	.74429 29831 22676 23888 97396 981	
51	.74437 12273 31860 63380 44699 303	
52	.74444 94574 46798 49939 03128 821	
53	.74452 76734 72566 55663 55219 738	
54	.74460 58754 14238 78408 42830 264	
5555	.74468 40632 76886 41981 16492 547	
56	.74476 22370 65577 96339 66988 011	
57	.74484 03967 85379 17789 39167 291	(411)
58	.74491 85424 41353 09180 28033 940	
59	.74499 66740 38560 00103 57111 052	
5560	.74507 47915 82057 47088 39109 918	
61	.74515 28950 76900 33798 18919 813	
62	.74523 09845 28140 71226 98937 991	
63	.74530 90599 40827 97895 46758 932	(412)
64	.74538 71213 20008 80046 85241 869	
5565	.74546 51686 70727 11842 64975 588	
66	.74554 32019 98024 15558 19159 495	
67	.74562 12213 06938 41778 00919 884	
68	.74569 92266 02505 69591 03080 346	
69	.74577 72178 89759 06785 60405 223	(412)
5570	.74585 51951 73728 90044 34334 989	
71	.74593 31584 59442 85138 80232 409	
72	.74601 11077 51925 87123 97158 325	
73	.74608 90430 56200 20532 60195 862	(412)
74	.74616 69643 77285 39569 35341 858	

N	logarithm	ref
5575	.74624 48717 20198 28304 76984 268	
76	.74632 27650 89953 00869 07984 285	
77	.74640 06444 91561 01645 82381 904	
78	.74647 85099 30031 05465 30743 609	
79	.74655 63614 10369 17797 88170 858	
5580	.74663 41989 37578 74947 04988 014	
81	.74671 20225 16660 44242 40128 337	(413)
82	.74678 98321 52612 24232 37236 652	
83	.74686 76278 50429 44876 83507 244	
84	.74694 54096 15104 67739 51275 561	
5585	.74702 31774 51627 86180 22382 230	
86	.74710 09313 64986 25546 95327 909	
87	.74717 86713 60164 43367 75237 449	
88	.74725 63974 42144 29542 46651 825	
89	.74733 41096 15905 06534 29166 285	
5590	.74741 18078 86423 29561 15933 112	
91	.74748 94922 58672 86786 95047 402	(413)
92	.74756 71627 37624 99512 53834 229	
93	.74764 48193 28248 22366 66055 524	
94	.74772 24620 35508 43496 62055 008	
5595	.74780 00908 64368 84758 81859 472	
96	.74787 77058 19790 01909 11254 670	
97	.74795 53069 06729 84793 00854 093	
98	.74803 28941 30143 57535 68178 845	
99	.74811 04674 94983 78731 82766 828	

N	logarithm	ref
5600	.74818 80270 06200 41635 34329 428	
01	.74826 55726 68740 74348 83973 851	
02	.74834 31044 87549 40012 98509 264	
03	.74842 06224 67568 36995 67854 841	
04	.74849 81266 13736 99081 05567 825	
5605	.74857 56169 30991 95658 32509 656	
06	.74865 30934 24267 31910 43668 237	
07	.74873 05560 98494 49002 58154 348	
08	.74880 80049 58602 24270 52390 214	
09	.74888 54400 09516 71408 76508 215	
5610	.74896 28612 56161 40658 53977 688	
11	.74904 02687 03457 18995 64477 765	
12	.74911 76623 56322 30318 10034 155	
13	.74919 50422 19672 35633 64437 761	
14	.74927 24082 98420 33247 05963 015	
5615	.74934 97605 97476 58947 33403 750	
16	.74942 70991 21748 86194 65444 466	
17	.74950 44238 76142 26307 23384 771	
18	.74958 17348 65559 28647 97234 780	
19	.74965 90320 94899 80810 95199 240	
5620	.74973 63155 69061 08807 76568 110	
21	.74981 35852 92937 77253 68031 303	
22	.74989 08412 71421 89553 63435 301	
23	.74996 80835 09402 88088 06999 293	(414)
24	.75004 53120 11767 54398 60008 495	

(28)

N	logarithm	ref
5625	.75012 25267 83400 09373 51002 276	
26	.75019 97278 29182 13433 09474 694	
27	.75027 69151 53992 66714 83105 017	
28	.75035 40887 62708 09258 38535 805	
29	.75043 12486 60202 21190 45716 076	
5630	.75050 83948 51346 22909 45827 078	
31	.75058 55273 41008 75270 02808 162	
32	.75066 26461 34055 79767 38500 238	
33	.75073 97512 35350 78721 51424 239	
34	.75081 68426 49754 55461 19212 061	
5635	.75089 39203 82125 34507 84707 347	
36	.75097 09844 37318 81759 25753 535	
37	.75104 80348 20188 04673 08686 511	
38	.75112 50715 35583 52450 25549 226	
39	.75120 20945 88353 16218 15045 584	(414)
5640	.75127 91039 83342 29213 67250 922	
41	.75135 60997 25393 66966 12096 332	(104,262)
42	.75143 30818 19347 47479 91644 114	
43	.75151 00502 70041 31417 16171 568	
44	.75158 70050 82310 22280 04080 358	
5645	.75166 39462 60986 66593 05648 635	
46	.75174 08738 10900 54085 10643 085	
47	.75181 77877 36879 17871 39808 066	(80,262)
48	.75189 46880 43747 34635 20248 949	
49	.75197 15747 36327 24809 44726 777	

N	logarithm	ref
5650	.75204 84478 19438 52758 14881 339	
51	.75212 53072 97898 26957 68399 700	(414)
52	.75220 21531 76521 00177 90147 259	
53	.75227 89854 60118 69663 07278 338	(415)
54	.75235 58041 53500 77312 68343 319	
5655	.75243 26092 61474 09862 06409 294	
56	.75250 94007 88842 99062 86211 210	
57	.75258 61787 40409 21863 35350 422	(284)
58	.75266 29431 20972 00588 59557 602	
59	.75273 96939 35328 03120 42036 870	(357)
5660	.75281 64311 88271 43077 26908 053	
61	.75289 31548 84593 79993 86763 904	
62	.75296 98650 29084 19500 74359 131	
63	.75304 65616 26529 13503 58448 045	
64	.75312 32446 81712 60362 43787 614	
5665	.75319 99141 99416 05070 75322 711	
66	.75327 65701 84418 39434 26570 288	
67	.75335 32126 41496 02249 72219 224	
68	.75342 98415 75422 79483 44962 550	
69	.75350 64569 90970 04449 76578 735	(415)
5670	.75358 30588 92906 57989 23278 716	
71	.75365 96472 85998 68646 75335 311	
72	.75373 62221 75010 12849 51011 640	
73	.75381 27835 64702 15084 74805 171	
74	.75388 93314 59833 48077 40023 977	

N	logarithm	ref
5675	.75396 58658 65160 32967 55711 753	
76	.75404 23867 85436 39487 77938 172	
77	.75411 88942 25412 86140 25471 069	
78	.75419 53881 89838 40373 79846 990	
79	.75427 18686 83459 18760 69856 565	
5680	.75434 83357 11018 87173 40461 192	
81	.75442 47892 77258 60961 06157 460	
82	.75450 12293 86917 05125 88805 739	
83	.75457 76560 44730 34499 39939 353	(416)
84	.75465 40692 55432 13918 47570 696	
5685	.75473 04690 23753 58401 27510 680	
86	.75480 68553 54423 33322 99217 838	
87	.75488 32282 52167 54591 46193 419	
88	.75495 95877 21709 88822 60938 772	
89	.75503 59337 67771 53515 74491 296	(96,263)
5690	.75511 22663 95071 17228 70555 240	
91	.75518 85856 08324 99752 84243 567	
92	.75526 48914 12246 72287 85447 129	
93	.75534 11838 11547 57616 46847 344	(416)
94	.75541 74628 10936 30278 96588 564	
5695	.75549 37284 15119 16747 55626 288	
96	.75556 99806 28799 95600 59767 380	
97	.75564 62194 56679 97696 66418 397	
98	.75572 24449 03458 06348 46058 141	
99	.75579 86569 73830 57496 58450 523	

N	logarithm	ref
5700	.75587 48556 72491 39883 13613 790	(416)
01	.75595 10410 04131 95225 17562 173	
02	.75602 72129 73441 18388 02835 971	
03	.75610 33715 85105 57558 43836 082	
04	.75617 95168 43809 14417 56978 965	
5705	.75625 56487 54233 44313 85687 998	(417)
06	.75633 17673 21057 56435 70237 176	
07	.75640 78725 48958 13984 02463 086	
08	.75648 39644 42609 34344 65361 048	
09	.75656 00430 06682 89260 57581 333	
5710	.75663 61082 45848 05004 02841 300	(417)
11	.75671 21601 64771 62548 44269 329	
12	.75678 81987 68117 97740 23696 351	
13	.75686 42240 60549 01470 45910 807	
14	.75694 02360 46724 19846 27892 818	
5715	.75701 62347 31300 54362 33043 336	(348)
16	.75709 22201 18932 62071 90424 026	
17	.75716 81922 14272 55757 99023 621	
18	.75724 41510 21970 04104 17066 457	
19	.75732 00965 46672 31865 36378 876	
5720	.75739 60287 93024 20038 41829 186	(348)
21	.75747 19477 65668 06032 55856 825	
22	.75754 78534 69243 83839 68106 362	
23	.75762 37459 08389 04204 50181 962	
24	.75769 96250 87738 74794 55537 908	

N	logarithm	ref
5725	.75777 54910 11925 60370 04520 761	
26	.75785 13436 85579 82953 54578 711	
27	.75792 71831 13329 21999 55653 675	
28	.75800 30092 99799 14563 90771 654	
29	.75807 88222 49612 55473 01846 845	
5730	.75815 46219 67389 97493 00715 015	
31	.75823 04084 57749 51498 65411 578	
32	.75830 61817 25306 86642 21709 838	
33	.75838 19417 74675 30522 09934 816	
34	.75845 76886 10465 69351 37068 079	
5735	.75853 34222 37286 48126 14158 949	
36	.75860 91426 59743 70793 79057 476	
37	.75868 48498 82441 00421 04484 516	(417)
38	.75876 05439 09979 59361 91454 258	
39	.75883 62247 46958 29425 48064 510	
5740	.75891 18923 97973 52043 53670 033	
41	.75898 75468 67619 28438 08454 219	(417)
42	.75906 31881 60487 19788 68414 354	
43	.75913 88162 81166 47399 65775 718	(297)
44	.75921 44312 34243 92867 14849 733	
5745	.75929 00330 24303 98246 03351 380	
46	.75936 56216 55928 66216 69191 049	
47	.75944 11971 33697 60251 62756 003	
48	.75951 67594 62188 04781 94696 597	
49	.75959 23086 45974 85363 69232 385	(205)

N	logarithm	ref
5750	.75966 78446 89630 48844 02993 228	
51	.75974 33675 97725 03527 29410 481	
52	.75981 88773 74826 19340 88673 356	
53	.75989 43740 25499 28001 03265 501	
54	.75996 98575 54307 23178 39096 837	
5755	.76004 53279 65810 60663 52245 667	
56	.76012 07852 64567 58532 21326 075	
57	.76019 62294 55133 97310 65495 572	
58	.76027 16605 42063 20140 48117 980	
59	.76034 70785 29906 32943 66096 476	
5760	.76042 24834 23212 04587 24891 749	
61	.76049 78752 26526 67047 99240 152	
62	.76057 32539 44394 15576 79586 772	
63	.76064 86195 81356 08863 04248 262	
64	.76072 39721 41951 69198 77320 314	
5765	.76079 93116 30717 82642 72344 596	
66	.76087 46380 52188 99184 21749 982	
67	.76094 99514 10897 32906 92082 869	
68	.76102 52517 11372 62152 45041 373	
69	.76110 05389 58142 29683 84328 161	
5770	.76117 58131 55731 42848 88336 676	
71	.76125 10743 08662 73743 28685 474	
72	.76132 63224 21456 59373 74615 402	
73	.76140 15574 98631 01820 83264 290	
74	.76147 67795 44701 68401 75833 850	

N	logarithm	ref
5775	.76155 19885 64181 91832 99663 436	(418)
76	.76162 71845 61582 70392 76225 304	
77	.76170 23675 41412 68083 35055 992	
78	.76177 75375 08178 14793 33638 440	
79	.76185 26944 66383 06459 63249 414	
5780	.76192 78384 20529 05229 40786 834	(393)
81	.76200 29693 75115 39621 86591 527	
82	.76207 80873 34639 04689 88277 964	
83	.76215 31923 03594 62181 50588 490	
84	.76222 82842 86474 40701 31285 539	
5785	.76230 33632 87768 35871 63096 329	
86	.76237 84293 11964 10493 61724 498	
87	.76245 34823 63546 94708 19943 120	
88	.76252 85224 46999 86156 87783 538	
89	.76260 35495 66803 50142 38834 431	
5790	.76267 85637 27436 19789 22665 496	(186,7)
91	.76275 35649 33373 96204 03390 135	
92	.76282 85531 89090 48635 84381 500	
93	.76290 35284 99057 14636 19156 242	
94	.76297 84908 67743 00219 08440 287	
5795	.76305 34402 99614 80020 83430 948	
96	.76312 83767 99136 97459 75269 668	
97	.76320 33003 70771 64895 70739 657	
98	.76327 82110 18978 63789 54202 689	
99	.76335 31087 48215 44862 35789 296	

N	logarithm	ref
5800	.76342 79935 62937 28254 65856 577	(418)
01	.76350 28654 67597 03685 35727 829	
02	.76357 77244 66645 30610 64728 192	
03	.76365 25705 64530 38382 73530 467	
04	.76372 74037 65698 26408 43825 275	
5805	.76380 22240 74592 64307 64329 683	(419)
06	.76387 70314 95654 92071 63148 413	
07	.76395 18260 33324 20221 26501 756	
08	.76402 66076 92037 29965 03834 246	
09	.76410 13764 76228 73356 99318 194	
5810	.76417 61323 90330 73454 49766 106	(419)
11	.76425 08754 38773 24475 88966 038	
12	.76432 56056 25983 91957 98453 898	
13	.76440 03229 56388 12913 44736 693	
14	.76447 50274 34408 95988 02980 713	
5815	.76454 97190 64467 21617 67178 610	(419)
16	.76462 43978 50981 42185 46809 329	
17	.76469 90637 98367 82178 50004 814	
18	.76477 37169 11040 38344 53237 429	
19	.76484 83571 93410 79848 57541 957	
5820	.76492 29846 49888 48429 31286 096	(420)
21	.76499 75992 84880 58555 39503 297	
22	.76507 22011 02791 97581 59801 797	
23	.76514 67901 08025 25904 84863 693	
24	.76522 13663 04980 77120 11547 849	

(29)

N	logarithm	ref	
5825	.76529 59296 98056 58176 16610 460	(420)	
26	.76537 04802 91648 49531 19057 045		
27	.76544 50180 90150 05308 29139 631		
28	.76551 95430 97952 53450 84012 890		
29	.76559 40553 19444 95877 70062 955		
5830	.76566 85547 59014 08638 31922 629		
31	.76574 30414 21044 42067 68186 701		
32	.76581 75153 09918 20941 13841 037		
33	.76589 19764 30015 44629 09419 123		
34	.76596 64247 85713 87251 56899 711		
5835	.76604 08603 81388 97832 62359 203		
36	.76611 52832 21414 00454 65392 383		
37	.76618 96933 10159 94412 55315 117		
38	.76626 40906 51995 54367 74162 589		
39	.76633 84752 51287 30502 06496 652		(421)
5840	.76641 28471 12399 48671 56035 846		
41	.76648 72062 39694 10560 09121 623		
42	.76656 15526 37530 93832 85034 288		
43	.76663 58863 10267 52289 73172 182		(405)
44	.76671 02072 62259 16018 57107 571		
5845	.76678 45154 97858 91548 25532 738		
46	.76685 88110 21417 62001 70109 707		
47	.76693 30938 37283 87248 70237 071		
48	.76700 73639 49804 04058 64747 317		
49	.76708 16213 63322 26253 10548 079		(421)

N	logarithm	ref
5850	.76715 58660 82180 44858 28220 697	(421)
51	.76723 00981 10718 28257 34589 471	
52	.76730 43174 53273 22342 62274 950	
53	.76737 85241 14180 50667 66244 627	
54	.76745 27180 97773 14599 17374 338	
5855	.76752 68994 08381 93468 83033 707	(422)
56	.76760 10680 50335 44724 94708 906	
57	.76767 52240 27960 04084 02676 035	
58	.76774 93673 45579 85682 17738 359	
59	.76782 34980 07516 82226 40040 685	
5860	.76789 76160 18090 65145 74974 073	(380)
61	.76797 17213 81618 84742 36184 135	
62	.76804 58141 02416 70342 35696 090	
63	.76811 98941 84797 30446 61169 792	
64	.76819 39616 33071 52881 40297 867	
5865	.76826 80164 51548 04948 92360 151	(422)
66	.76834 20586 44533 33577 66947 527	
67	.76841 60882 16331 65472 69868 317	
68	.76849 01051 71245 07265 76250 319	
69	.76856 41095 13573 45665 30851 579	
5870	.76863 81012 47614 47606 35592 986	(423)
71	.76871 20803 77663 60400 24325 736	
72	.76878 60469 08014 11884 24846 719	
73	.76886 00008 42957 10571 08174 855	
74	.76893 39421 86781 45798 25101 389	

N	logarithm	ref
5875	.76900 78709 43773 87877 30027 153	(197)
76	.76908 17871 18218 88242 92099 760	
77	.76915 56907 14398 79601 93663 720	
78	.76922 95817 36593 76082 16036 406	
79	.76930 34601 89081 73381 12622 824	
5880	.76937 73260 76138 48914 69382 099	(384)
81	.76945 11794 02037 61965 52658 583	
82	.76952 50201 71050 53831 44390 478	
83	.76959 88483 87446 47973 64708 844	
84	.76967 26640 55492 50164 81939 858	
5885	.76974 64671 79453 48637 10023 160	
86	.76982 02577 63592 14229 93359 121	
87	.76989 40358 12169 00537 79097 845	
88	.76996 78013 29442 44057 76882 700	
89	.77004 15543 19668 64337 06061 165	
5890	.77011 52947 87101 64120 30375 759	
91	.77018 90227 35993 29496 80147 803	
92	.77026 27381 70593 30047 61966 763	
93	.77033 64410 95149 18992 55897 871	
94	.77041 01315 13906 33337 00220 767	
5895	.77048 38094 31107 94018 63711 825	(423)
96	.77055 74748 50995 06054 05482 846	
97	.77063 11277 77806 58685 22388 799	
98	.77070 47682 15779 25525 84017 227	
99	.77077 83961 69147 64707 55271 975	

N	logarithm	ref	
5900	.77085 20116 42144 19026 06563 845	(424)	
01	.77092 56146 38999 16087 11620 781		
02	.77099 92051 63940 68452 32930 174		
03	.77107 27832 21194 73784 94825 858		
04	.77114 63488 14985 14995 44232 354		
5905	.77121 99019 49533 60386 99078 902		
06	.77129 34426 29059 63800 84395 815		
07	.77136 69708 57780 64761 56105 663		
08	.77144 04866 39911 88622 12521 780		
09	.77151 39899 79666 46708 93566 590		
5910	.77158 74808 81255 36466 67722 210		
11	.77166 09593 48887 41603 06725 782		
12	.77173 44253 86769 32233 48021 984		
13	.77180 78789 99105 65025 44985 135		
14	.77188 13201 90098 83343 04923 299		
5915	.77195 47489 63949 17391 14876 798		
16	.77202 81653 24854 84359 55223 500		
17	.77210 15692 77011 88567 01103 254		
18	.77217 49608 24614 21605 11673 818		
19	.77224 83399 71853 62482 07210 623		
5920	.77232 17067 22919 77766 34062 684		(424)
21	.77239 50610 82000 21730 17476 984		
22	.77246 84030 53280 36493 02303 593		
23	.77254 17326 40943 52164 81593 833		
24	.77261 50498 49170 86989 13103 728		

N	logarithm	ref
5925	.77268 83546 82141 47486 23715 003	(382)
26	.77276 16471 44032 28596 01785 850	
27	.77283 49272 39018 13820 77443 704	
28	.77290 81949 71271 75367 90832 211	
29	.77298 14503 44963 74292 48324 597	
5930	.77305 46933 64262 60639 66715 598	(382)
31	.77312 79240 33334 73587 05404 136	
32	.77320 11423 56344 41586 86578 860	
33	.77327 43483 37453 82508 03418 715	
34	.77334 75419 80823 03778 16320 635	
5935	.77342 07232 90610 02525 37166 478	(338)
36	.77349 38922 70970 65720 01641 291	
37	.77356 70489 26058 70316 29614 980	
38	.77364 01932 60025 83393 73599 446	
39	.77371 33252 77021 62298 55293 238	
5940	.77378 64449 81193 54784 90225 757	(338)
41	.77385 95523 76686 99156 00513 032	
42	.77393 26474 67645 24405 15737 059	
43	.77400 57302 58209 50356 61960 724	
44	.77407 88007 52518 87806 38890 254	
5945	.77415 18589 54710 38662 85197 182	(338)
46	.77422 49048 68918 96087 32011 768	
47	.77429 79384 99277 44634 44599 806	
48	.77437 09598 49916 60392 52234 748	
49	.77444 39689 24965 11123 66277 042	

N	logarithm	ref
5950	.77451 69657 28549 56403 86472 582	(424)
51	.77458 99502 64794 47762 95482 151	
52	.77466 29225 37822 28824 41653 717	
53	.77473 58825 51753 35445 10049 433	
54	.77480 88303 10705 95854 81739 182	
5955	.77488 17658 18796 30795 81372 492	
56	.77495 46890 80138 53662 13040 619	
57	.77502 76000 98844 70638 84440 604	
58	.77510 04988 79024 80841 19353 086	
59	.77517 33854 24786 76453 58445 628	
5960	.77524 62597 40236 42868 48413 321	
61	.77531 91218 29477 58825 19468 402	
62	.77539 19716 96611 96548 51190 608	
63	.77546 48093 45739 21887 26749 989	
64	.77553 76347 80956 94452 75513 863	
5965	.77561 04480 06360 67757 04049 616	
66	.77568 32490 26043 89351 15535 004	
67	.77575 60378 44098 00963 17587 620	
68	.77582 88144 64612 38636 18525 176	
69	.77590 15788 91674 32866 12068 213	
5970	.77597 43311 29369 08739 50496 877	
71	.77604 70711 81779 86071 06273 349	
72	.77611 97990 52987 79541 22141 523	
73	.77619 25147 47071 98833 49715 509	
74	.77626 52182 68109 48771 76568 523	

N	logarithm	ref
5975	.77633 79096 20175 29457 41833 707	
76	.77641 05888 07342 36406 40328 427	
77	.77648 32558 33681 60686 15213 555	
78	.77655 59107 03261 89052 39199 257	
79	.77662 85534 20150 04085 84308 767	
5980	.77670 11839 88410 84328 80211 649	
81	.77677 38024 12107 04421 61137 992	(425)
82	.77684 64086 95299 35239 01385 008	
83	.77691 90028 42046 44026 39427 465	
84	.77699 15848 56404 94535 90643 392	
5985	.77706 41547 42429 47162 48666 461	
86	.77713 67125 04172 59079 75376 452	
87	.77720 92581 45684 84375 79539 182	(425)
88	.77728 17916 71014 74188 84107 287	
89	.77735 43130 84208 76842 82193 202	
5990	.77742 68223 89311 37982 81725 691	
91	.77749 93195 90365 00710 38801 267	
92	.77757 18046 91410 05718 79741 822	
93	.77764 42776 96484 91428 11869 764	
94	.77771 67386 09625 94120 23011 973	
5995	.77778 91874 34867 48073 69743 841	
96	.77786 16241 76241 85698 54384 681	
97	.77793 40488 37779 37670 90755 740	
98	.77800 64614 23508 33067 58712 078	
99	.77807 88619 37454 99500 47459 533	

N	logarithm	ref
6000	.77815 12503 83643 63250 87667 980	
01	.77822 36267 66096 49403 72392 103	
02	.77829 59910 88833 81981 66810 860	
03	.77836 83433 55873 84079 06796 817	
04	.77844 06835 71232 77995 86326 517	
6005	.77851 30117 38924 85371 33743 035	
06	.77858 53278 62962 27317 76881 858	
07	.77865 76319 47355 24553 97071 209	(426)
08	.77872 99239 96111 97538 72017 934	
09	.77880 22040 13238 66604 07590 044	
6010	.77887 44720 02739 52088 58507 000	
11	.77894 67279 68616 74470 37948 820	(426)
12	.77901 89719 14870 54500 16095 059	
13	.77909 12038 45499 13334 07604 709	
14	.77916 34237 64498 72666 48048 065	
6015	.77923 56316 75863 54862 59301 567	
16	.77930 78275 83585 83091 03916 625	
17	.77938 00114 91655 81456 28473 438	
18	.77945 21834 04061 75130 95930 768	
19	.77952 43433 24789 90488 06982 664	
6020	.77959 64912 57824 55233 10433 065	
21	.77966 86272 07147 98536 02599 260	
22	.77974 07511 76740 51163 15755 101	
23	.77981 28631 70580 45608 95624 921	
24	.77988 49631 92644 16227 67939 041	

(30)

N	logarithm	ref
6025	.77995 70512 46905 99364 94061 770	(303)
26	.78002 91273 37338 33489 15702 777	
27	.78010 11914 67911 59322 88722 704	
28	.78017 32436 42594 19974 06043 878	
29	.78024 52838 65352 61067 09676 958	
6030	.78031 73121 40151 30873 91874 357	
31	.78038 93284 70952 80444 85421 255	
32	.78046 13328 61717 63739 43074 998	
33	.78053 33253 16404 37757 06163 699	
34	.78060 53058 38969 62667 62354 795	
6035	.78067 72744 33368 01941 92604 346	(89,261)
36	.78074 92311 03552 22482 07297 830	
37	.78082 11758 53472 94751 71593 164	
38	.78089 31086 87078 92906 19976 703	
39	.78096 50296 08316 94922 60042 915	
6040	.78103 69386 21131 82729 65508 448	(427)
41	.78110 88357 29466 42337 58471 283	
42	.78118 07209 37261 63967 80925 654	
43	.78125 25942 48456 42182 55543 390	
44	.78132 44556 66987 76014 35732 366	
6045	.78139 63051 96790 69095 44982 666	(427)
46	.78146 81428 41798 29787 05511 131	
47	.78153 99686 05941 71308 56214 879	
48	.78161 17824 93150 11866 59944 420	
49	.78168 35845 07350 74784 00106 961	

N	logarithm	ref
6050	.78175 53746 52468 88628 66610 478	(428)
51	.78182 71529 32427 87342 31159 122	
52	.78189 89193 51149 10369 11910 535	
53	.78197 06739 12552 02784 27505 594	
54	.78204 24166 20554 15422 40481 145	
6055	.78211 41474 79071 05005 90076 226	
56	.78218 58664 92016 34273 14442 305	
57	.78225 75736 63301 72106 62268 013	
58	.78232 92689 96836 93660 93828 881	
59	.78240 09524 96529 80490 71472 525	
6060	.78247 26241 66286 20678 39549 762	
61	.78254 42840 10010 08961 93802 100	
62	.78261 59320 31603 46862 40216 030	
63	.78268 75682 34966 42811 43354 559	
64	.78275 91926 23997 12278 64176 384	
6065	.78283 08052 02591 77898 87353 110	(428)
66	.78290 24059 74644 69599 38094 914	
67	.78297 39949 44048 24726 88495 009	
68	.78304 55721 14692 88174 53403 290	
69	.78311 71374 90467 12508 75839 505	
6070	.78318 86910 75257 58096 01956 305	(429)
71	.78326 02328 72948 93229 45562 477	
72	.78333 17628 87423 94255 42216 709	
73	.78340 32811 22563 45699 92902 161	
74	.78347 47875 82246 40394 97292 156	

N	logarithm	ref
6075	.78354 62822 70349 79604 76617 268	(429)
76	.78361 77651 90748 73151 86144 068	
77	.78368 92363 47316 39543 17275 791	
78	.78376 06957 43924 06095 89285 180	
79	.78383 21433 84441 09063 30689 719	
6080	.78390 35792 72734 93760 50279 494	
81	.78397 50034 12671 14689 97807 890	
82	.78404 64158 08113 35667 14355 319	
83	.78411 78164 62923 29945 72376 163	
84	.78418 92053 80960 80343 05439 118	
6085	.78426 05825 66083 79365 27671 092	(388)
86	.78433 19480 22148 29332 42914 808	
87	.78440 33017 53008 42503 43610 272	
88	.78447 46437 62516 41200 99410 197	
89	.78454 59740 54522 57936 35539 545	
6090	.78461 72926 32875 35534 00909 248	(429)
91	.78468 85995 01421 27256 25994 241	
92	.78475 98946 64004 96927 70485 854	
93	.78483 11781 24469 19059 60728 668	
94	.78490 24498 86654 78974 16951 856	
6095	.78497 37099 54400 72928 70305 092	
96	.78504 49583 31544 08239 69709 040	
97	.78511 61950 21920 03406 78530 458	
98	.78518 74200 29361 88236 61091 922	
99	.78525 86333 57701 03966 59026 185	

N	logarithm	ref
6100	.78532 98350 10767 03388 57485 138	(393)
01	.78540 10249 92387 50972 41213 378	
02	.78547 22033 06388 22989 40496 331	
03	.78554 33699 56593 07635 66992 887	
04	.78561 45249 46824 05155 39462 504	
6105	.78568 56682 80901 27963 99396 693	
06	.78575 67999 62643 00771 16564 830	
07	.78582 79199 95865 60703 84484 178	
08	.78589 90283 84383 57429 05824 043	
09	.78597 01251 32009 53276 67753 926	
6110	.78604 12102 42554 23362 07245 574	(430)
11	.78611 22837 19826 55708 66338 768	
12	.78618 33455 67633 51370 37380 719	
13	.78625 43957 89780 24553 98248 909	
14	.78632 54343 90070 02741 37567 203	
6115	.78639 64613 72304 26811 69925 057	
16	.78646 74767 40282 51163 41109 630	
17	.78653 84804 97802 43836 23360 591	
18	.78660 94726 48659 86633 00657 413	
19	.78668 04531 96648 75241 44048 929	
6120	.78675 14221 45561 19355 77034 903	(430)
21	.78682 23794 99187 42798 31009 383	
22	.78689 33252 61315 83640 90775 567	
23	.78696 42594 35732 94326 30141 911	
24	.78703 51820 26223 41789 37609 207	

N	logarithm	ref
6125	.78710 60930 36570 07578 32158 330	
26	.78717 69924 70553 87975 69148 349	
27	.78724 78803 31953 94119 36334 701	
28	.78731 87566 24547 52123 40017 084	
29	.78738 96213 52110 03198 81326 745	
6130	.78746 04745 18415 03774 22662 815	
31	.78753 13161 27234 25616 44287 320	(431)
32	.78760 21461 82337 55950 91088 518	
33	.78767 29646 87492 97582 09522 161	(431)
34	.78774 37716 46466 69013 74740 306	
6135	.78781 45670 63023 04569 07917 263	
36	.78788 53509 40924 54510 83782 267	
37	.78795 61232 83931 85161 28368 458	
38	.78802 68840 95803 79022 06987 726	
39	.78809 76333 80297 34894 02440 966	
6140	.78816 83711 41167 67996 83473 313	
41	.78823 90973 82168 10088 63483 852	
42	.78830 98121 07050 09585 49499 363	
43	.78838 05153 19563 31680 81421 574	(432)
44	.78845 12070 23455 58464 61557 452	
6145	.78852 18872 22472 89042 74441 998	
46	.78859 25559 20359 39655 96963 039	
47	.78866 32131 20857 43798 98797 475	
48	.78873 38588 27707 52339 33168 440	
49	.78880 44930 44648 33636 17932 824	

N	logarithm	ref
6150	.78887 51157 75416 73659 07008 585	(432)
51	.78894 57270 23747 76106 52151 283	
52	.78901 63267 93374 62524 55089 242	
53	.78908 69150 88028 72425 10026 744	
54	.78915 74919 11439 63404 36524 655	
6155	.78922 80572 67335 11261 02767 841	(432)
56	.78929 86111 59441 10114 39228 782	
57	.78936 91535 91481 72522 42736 701	
58	.78943 96845 67179 29599 70961 593	
59	.78951 02040 90254 31135 27322 465	
6160	.78958 07121 64425 45710 36329 140	(432)
61	.78965 12087 93409 60816 09366 920	
62	.78972 16939 80921 82971 00933 424	
63	.78979 21677 30675 37838 55336 904	
64	.78986 26300 46381 70344 43865 309	
6165	.78993 30809 31750 44793 92435 389	(432)
66	.79000 35203 90489 44988 99731 086	
67	.79007 39484 26304 74345 45840 481	
68	.79014 43650 42900 56009 91400 533	
69	.79021 47702 43979 32976 67258 845	
6170	.79028 51640 33241 68204 54661 673	(332)
71	.79035 55464 14386 44733 55977 401	
72	.79042 59173 91110 65801 55964 679	
73	.79049 62769 67109 54960 73594 409	
74	.79056 66251 46076 56194 04434 770	

N	logarithm	ref
6175	.79063 69619 31703 34031 53608 443	
76	.79070 72873 27679 73666 59331 200	
77	.79077 76013 37693 81072 07041 013	
78	.79084 79039 65431 83116 34126 805	
79	.79091 81952 14578 27679 25265 995	
6180	.79098 84750 88815 83767 98379 926	
81	.79105 87435 91825 41632 81216 319	
82	.79112 90007 27286 12882 78567 822	
83	.79119 92464 98875 30601 30135 753	
84	.79126 94809 10268 49461 59048 114	
6185	.79133 97039 65139 45842 11040 945	
86	.79140 99156 67160 17941 84312 070	
87	.79148 01160 20000 85895 50056 281	
88	.79155 03050 27329 91888 63691 003	
89	.79162 04826 92814 00272 66781 457	
6190	.79169 06490 20117 97679 79674 344	
91	.79176 08040 12904 93137 84849 053	
92	.79183 09476 74836 18185 00995 386	
93	.79190 10800 09571 26984 47826 790	
94	.79197 12010 20767 96439 01638 064	
6195	.79204 13107 12082 26305 41616 517	
96	.79211 14090 87168 39308 86915 517	
97	.79218 14961 49678 81257 24499 393	(433)
98	.79225 15719 03264 21155 27768 607	
99	.79232 16363 51573 51318 65974 132	(433)

N	logarithm	ref
6200	.79239 16894 98253 87488 04429 948	(434)
01	.79246 17313 46950 68942 95532 561	
02	.79253 17619 01307 58615 60596 430	
03	.79260 17811 64966 43204 62514 206	
04	.79267 17891 41567 33288 69250 634	
6205	.79274 17858 34748 63440 08179 001	
06	.79281 17712 48146 92338 11268 972	
07	.79288 17453 85397 02882 51134 665	
08	.79295 17082 50132 02306 67951 800	
09	.79302 16598 45983 22290 87252 735	
6210	.79309 16001 76580 19075 28608 220	(393)
11	.79316 15292 45550 73573 05204 663	
12	.79323 14470 56520 91483 14325 700	
13	.79330 13536 13115 03403 18746 866	
14	.79337 12489 18955 64942 19052 128	
6215	.79344 11329 77663 56833 16881 051	(434)
16	.79351 10057 92857 85045 69115 356	
17	.79358 08673 68155 80898 33013 603	
18	.79365 07177 07173 01171 02302 752	
19	.79372 05568 13523 28217 34235 308	
6220	.79379 03846 90818 70076 67620 780	(435)
21	.79386 02013 42669 60586 31840 150	
22	.79393 00067 72684 59493 46852 061	
23	.79399 98009 84470 52567 14199 390	
24	.79406 95839 81632 51709 99024 906	

(31)

N	logarithm	ref	
6225	.79413 93557 67773 95070 03104 658	(350)	
26	.79420 91163 46496 47152 28907 765		
27	.79427 88657 21399 98930 34691 249		
28	.79434 86038 96082 67957 80638 547		
29	.79441 83308 74140 98479 66050 337		
6230	.79448 80466 59169 61543 57596 283		
31	.79455 77512 54761 55111 08636 326		
32	.79462 74446 64508 04168 69620 099		
33	.79469 71268 91998 60838 89573 071		
34	.79476 67979 40821 04491 08677 993		
6235	.79483 64578 14561 41852 41960 215		
36	.79490 61065 16804 07118 54085 433		
37	.79497 57440 51131 62064 25278 429		
38	.79504 53704 21124 96154 08371 319		
39	.79511 49856 30363 26652 76989 873		
6240	.79518 45896 82423 98735 64886 401		
41	.79525 41825 80882 85598 96427 730		
42	.79532 37643 29313 88570 08246 776		
43	.79539 33349 31289 37217 62066 204		
44	.79546 28943 90379 89461 48702 643		
6245	.79553 24427 10154 31682 83259 963		(385)
46	.79560 19798 94179 78833 91520 044		
47	.79567 15059 46021 74547 87539 517		
48	.79574 10208 69243 91248 42460 905		
49	.79581 05246 67408 30259 44546 617		

N	logarithm	ref
6250	.79588 00173 44075 21914 50444 211	
51	.79594 94989 02803 25666 27691 338	
52	.79601 89693 47149 30195 88468 793	
53	.79608 84286 80668 53522 14610 054	
54	.79615 78769 06914 43110 73875 709	
6255	.79622 73140 29438 75983 27501 141	
56	.79629 67400 51791 58826 29025 855	
57	.79636 61549 77521 28100 14412 791	(435)
58	.79643 55588 10174 50147 83465 992	
59	.79650 49515 53296 21303 72554 953	
6260	.79657 43332 10429 68002 18653 996	
61	.79664 37037 85116 46886 14704 990	
62	.79671 30632 80896 44915 56311 731	
63	.79678 24117 01307 79475 79774 279	(267)
64	.79685 17490 49886 98485 91471 569	
6265	.79692 10753 30168 80506 88600 556	
66	.79699 03905 45686 34849 71280 191	
67	.79705 96946 99971 01683 46028 484	
68	.79712 89877 96552 52143 20620 923	
69	.79719 82698 38958 88437 90338 486	(430,435)
6270	.79726 75408 30716 43958 15613 503	
71	.79733 68007 75349 83383 91081 575	(435)
72	.79740 60496 76382 02792 06047 803	
73	.79747 52875 37334 29763 96375 508	
74	.79754 45143 61726 23492 87805 672	

N	logarithm	ref
6275	.79761 37301 53075 74891 30715 273	(436)
76	.79768 29349 14899 06698 26322 716	
77	.79775 21286 50710 73586 44348 529	
78	.79782 13113 64023 62269 32139 484	
79	.79789 04830 58348 91608 15264 320	
6280	.79795 96437 37196 12718 89589 193	(436)
81	.79802 87934 04073 09079 04841 013	
82	.79809 79320 62485 96634 39666 784	
83	.79816 70597 15939 23905 68197 083	
84	.79823 61763 67935 72095 18121 776	
6285	.79830 52820 21976 55193 20286 079	(436)
86	.79837 43766 81561 20084 49815 071	
87	.79844 34603 50187 46654 58774 721	
88	.79851 25330 31351 47896 00377 529	
89	.79858 15947 28547 70014 44740 831	
6290	.79865 06454 45268 92534 86205 839	(436)
91	.79871 96851 85006 28407 42225 452	
92	.79878 87139 51249 24113 43828 899	
93	.79885 77317 47485 59771 17671 217	
94	.79892 67385 77201 49241 59675 619	
6295	.79899 57344 43881 40234 00276 739	(70,264)
96	.79906 47193 51008 14411 61272 773	
97	.79913 36933 02062 87497 04294 509	
98	.79920 26563 00525 09377 70899 234	
99	.79927 16083 49872 64211 14297 488	

N	logarithm	ref
6300	.79934 05494 53581 70530 22720 651	(70,264)
01	.79940 94796 15126 81348 34437 306	
02	.79947 83988 37980 84264 44426 341	
03	.79954 73071 25615 01568 02714 728	
04	.79961 62044 81498 90344 04387 913	
6305	.79968 50909 09100 42577 71280 749	
06	.79975 39664 11885 85259 25356 871	
07	.79982 28309 93319 80488 53784 445	
08	.79989 16846 56865 25579 65716 172	
09	.79996 05274 05983 53165 40781 438	
6310	.80002 93592 44134 31301 69298 500	(437)
11	.80009 81801 74775 63571 84214 579	
12	.80016 69902 01363 89190 84781 713	
13	.80023 57893 27353 83109 51976 240	
14	.80030 45775 56198 56118 55669 745	
6315	.80037 33548 91349 54952 53559 320	(437)
16	.80044 21213 36256 62393 81864 951	
17	.80051 08768 94367 97376 37801 874	
18	.80057 96215 69130 15089 53835 689	
19	.80064 83553 63988 07081 63728 047	
6320	.80071 70782 82385 01363 60380 707	(437)
21	.80078 57903 27762 62512 45485 737	
22	.80085 44915 03560 91774 70989 653	
23	.80092 31818 13218 27169 72379 247	
24	.80099 18612 60171 43592 93796 872	

N	logarithm	ref
6325	.80106 05298 47855 52919 04992 940	(438)
26	.80112 91875 79704 04105 10123 371	
27	.80119 78344 59148 83293 48399 718	
28	.80126 64704 89620 13914 86599 714	
29	.80133 50956 74546 56791 03445 940	
6330	.80140 37100 17355 10237 65860 332	
31	.80147 23135 21471 10166 97102 224	
32	.80154 09061 90318 30190 36797 617	
33	.80160 94880 27318 81720 92867 361	
34	.80167 80590 35893 14075 85361 923	
6335	.80174 66192 19460 14578 82210 403	(392)
36	.80181 51685 81437 08662 26891 461	
37	.80188 37071 25239 59969 58033 805	
38	.80195 22348 54281 70457 20953 871	
39	.80202 07517 71975 80496 71138 341	
6340	.80208 92578 81732 68976 69679 111	(190)
41	.80215 77531 86961 53404 70668 330	
42	.80222 62376 91069 90009 00561 119	
43	.80229 47113 97463 73840 29513 561	
44	.80236 31743 09547 38873 34703 559	
6345	.80243 16264 30723 58108 55642 145	
46	.80250 00677 64393 43673 41482 804	
47	.80256 84983 13956 46923 90336 388	
48	.80263 69180 82810 58545 80599 172	
49	.80270 53270 74352 08655 94301 601	

N	logarithm	ref
6350	.80277 37252 91975 66903 32485 271	(439)
51	.80284 21127 39074 42570 22615 667	
52	.80291 04894 19039 84673 18038 196	
53	.80297 88553 35261 82063 89485 015	
54	.80304 72104 91128 63530 08640 172	
6355	.80311 55548 90026 97896 23770 554	(310)
56	.80318 38885 35341 94124 27430 128	
57	.80325 22114 30457 01414 16244 971	
58	.80332 05235 78754 09304 42786 546	
59	.80338 88249 83613 47772 59540 701	
6360	.80345 71156 48413 87335 54979 843	(439)
61	.80352 53955 76532 39149 81745 745	
62	.80359 36647 71344 55111 76950 407	
63	.80366 19232 36224 27957 74602 433	
64	.80373 01709 74543 91364 10166 322	
6365	.80379 84079 89674 20047 17262 103	(437)
66	.80386 66342 84984 29863 16512 720	
67	.80393 48498 63841 77907 96546 570	
68	.80400 30547 29612 62616 87162 580	
69	.80407 12488 85661 23864 24665 209	
6370	.80413 94323 35350 43063 09376 751	(440)
71	.80420 76050 82041 43264 55334 319	
72	.80427 57671 29093 89257 32178 837	
73	.80434 39184 79865 87666 99243 438	
74	.80441 20591 37713 87055 31848 563	

N	logarithm	ref
6375	.80448 01891 05992 78019 39811 134	(440)
76	.80454 83083 88055 93290 78175 114	
77	.80461 64169 87255 07834 50170 764	
78	.80468 45149 06940 38948 02409 926	
79	.80475 26021 50460 46360 12324 626	
6380	.80482 06787 21162 32329 67856 289	
81	.80488 87446 22391 41744 39402 863	
82	.80495 67998 57491 62219 44031 119	
83	.80502 48444 29805 24196 01961 415	
84	.80509 28783 42673 01039 85332 165	
6385	.80516 09015 99434 09139 59251 292	(441)
86	.80522 89142 03426 08005 15141 894	
87	.80529 69161 57985 00365 96389 372	
88	.80536 49074 66445 32269 16297 247	
89	.80543 28881 32139 93177 68358 896	
6390	.80550 08581 58400 16068 28852 415	
91	.80556 88175 48555 77529 51765 819	
92	.80563 67663 05934 97859 56059 780	
93	.80570 47044 33864 41164 05275 100	
94	.80577 26319 35669 15453 79492 093	
6395	.80584 05488 14672 72742 39649 057	(441)
96	.80590 84550 74197 09143 84227 006	
97	.80597 63507 17562 64969 98307 824	
98	.80604 42357 48088 24827 95012 985	
99	.80611 21101 69091 17717 49329 995	

N	logarithm	ref
6400	.80617 99739 83887 17128 24333 683	
01	.80624 78271 95790 41136 89809 483	
02	.80631 56698 08113 52504 33285 809	
03	.80638 35018 24167 58772 63482 660	
04	.80645 13232 47262 12362 06183 540	
6405	.80651 91340 80705 10667 92537 809	
06	.80658 69343 27802 96157 39800 536	
07	.80665 47239 91860 56466 24516 959	
08	.80672 25030 76181 24495 48158 604	
09	.80679 02715 84066 78507 95218 152	
6410	.80685 80295 18817 42224 83770 096	
11	.80692 57768 83731 84922 08504 247	
12	.80699 35136 82107 21526 76239 136	
13	.80706 12399 17239 12713 33922 341	
14	.80712 89555 92421 64999 89124 778	
6415	.80719 66607 10947 30844 23035 963	
16	.80726 43552 76107 08739 95967 270	
17	.80733 20392 91190 43312 45370 189	
18	.80739 97127 59485 25414 76376 573	
19	.80746 73756 84277 92223 44867 879	
6420	.80753 50280 68853 27334 33080 374	
21	.80760 26699 16494 60858 17753 286	(441)
22	.80767 03012 30483 69516 30826 864	
23	.80773 79220 14100 76736 12697 314	
24	.80780 55322 70624 52746 58035 559	

(32)

N	logarithm	ref	
6425	.80787 31320 03332 14673 54176 765	(442)	
26	.80794 07212 15499 26635 12087 574		
27	.80800 82999 10399 99836 89917 977		
28	.80807 58680 91306 92667 09144 738		
29	.80814 34257 61491 10791 63313 298		
6430	.80821 09729 24222 07249 19385 055		
31	.80827 85095 82767 82546 11696 921		
32	.80834 60357 40394 84751 28540 061		
33	.80841 35514 00368 09590 91364 672		
34	.80848 10565 65951 00543 26617 709		
6435	.80854 85512 40405 48933 30220 410		
36	.80861 60354 26991 94027 24692 479		
37	.80868 35091 28969 23127 08929 799		
38	.80875 09723 49594 71665 00642 505		
39	.80881 84250 92124 23297 71460 266		
6440	.80888 58673 59812 10000 74711 603		
41	.80895 32991 55911 12162 65884 076		
42	.80902 07204 83672 58679 15772 148		
43	.80908 81313 46346 27047 16319 538		
44	.80915 55317 47180 43458 79162 877		
6445	.80922 29216 89421 82895 26883 445		(442)
46	.80929 03011 76315 69220 76973 786		
47	.80935 76702 11105 75276 18525 984		
48	.80942 50287 97034 22972 81648 370		
49	.80949 23769 37341 83385 99617 420		

N	logarithm	ref
6450	.80955 97146 35267 76848 63771 618	(285)
51	.80962 70418 94049 73044 71154 012	
52	.80969 43587 16923 91102 64910 234	
53	.80976 16651 07124 99688 67448 699	
54	.80982 89610 67886 17100 06369 718	
6455	.80989 62466 02439 11358 33170 255	
56	.80996 35217 14014 00302 34731 033	
57	.81003 07864 05839 51681 37592 698	
58	.81009 80406 81142 83248 05027 748	
59	.81016 52845 43149 62851 26914 908	
6460	.81023 25179 95084 08529 02422 648	
61	.81029 97410 40168 88601 15508 516	
62	.81036 69536 81625 21762 03240 956	
63	.81043 41559 22672 77173 16950 285	
64	.81050 13477 66529 74555 76215 466	
6465	.81056 85292 16412 84283 15693 347	
66	.81063 57002 75537 27473 24797 001	
67	.81070 28609 47116 76080 80229 792	
68	.81077 00112 34363 52989 71381 811	
69	.81083 71511 40488 32105 18595 293	
6470	.81090 42806 68700 38445 84305 628	
71	.81097 13998 22207 48235 77064 579	
72	.81103 85086 04215 88996 48452 301	
73	.81110 56070 17930 39638 82884 750	
74	.81117 26950 66554 30554 80323 079	

N	logarithm	ref
6475	.81123 97727 53289 43709 31891 587	
76	.81130 68400 81336 12731 88410 790	
77	.81137 38970 53893 23008 21852 194	
78	.81144 09436 74158 11771 79721 312	
79	.81150 79799 45326 68195 32375 471	
6480	.81157 50058 70593 33482 13282 972	
81	.81164 20214 53151 00957 52230 112	(443)
82	.81170 90266 96191 16160 01482 618	
83	.81177 60216 02903 76932 54908 001	
84	.81184 30061 76477 33513 60065 353	
6485	.81190 99804 20098 88628 23269 081	
86	.81197 69443 36953 97579 07633 097	
87	.81204 38979 30226 68337 24101 940	
88	.81211 08412 03099 61633 15475 325	
89	.81217 77741 58753 91047 33432 597	
6490	.81224 46968 00369 23101 08563 558	
91	.81231 16091 31123 77347 13412 138	(443)
92	.81237 85111 54194 26460 18539 366	
93	.81244 54028 72755 96327 41612 086	
94	.81251 22842 89982 66138 89523 873	
6495	.81257 91554 09046 68477 93554 582	
96	.81264 60162 33118 89411 37574 952	
97	.81271 28667 65368 68579 79302 702	
98	.81277 97070 08963 99287 64616 527	
99	.81284 65369 67071 28593 34934 409	

N	logarithm	ref
6500	.81291 33566 42855 57399 27662 632	
01	.81298 01660 39480 40541 69721 922	
02	.81304 69651 60107 86880 64157 074	
03	.81311 37540 07898 59389 69836 465	
04	.81318 05325 86011 75245 74247 823	
6505	.81324 73008 97605 05918 59396 622	
06	.81331 40589 45834 77260 60813 455	
07	.81338 08067 33855 69596 19676 762	
08	.81344 75442 64821 17811 28057 229	
09	.81351 42715 41883 11442 67290 228	
6510	.81358 09885 68191 94767 39482 620	
11	.81364 76953 46896 66891 92160 238	
12	.81371 43918 81144 81841 36062 397	
13	.81378 10781 74082 48648 56089 711	
14	.81384 77542 28854 31443 15411 558	
6515	.81391 44200 48603 49540 52739 465	
16	.81398 10756 36471 77530 72772 724	
17	.81404 77209 95599 45367 29822 515	
18	.81411 43561 29125 38456 04620 830	
19	.81418 09810 40186 97743 74320 449	
6520	.81424 75957 31920 19806 75692 254	
21	.81431 42002 07459 56939 61526 137	(444)
22	.81438 07944 69938 17243 50241 743	
23	.81444 73785 22487 64714 68715 311	
24	.81451 39523 68238 19332 88328 835	

N	logarithm	ref	
6525	.81458 05160 10318 57149 54247 800	(444)	
26	.81464 70694 51856 10376 07933 694		
27	.81471 36126 95976 67472 02897 532		
28	.81478 01457 45804 73233 13700 607		
29	.81484 66686 04463 28879 38208 654		
6530	.81491 31812 75073 92142 93105 655		
31	.81497 96837 60756 77356 02673 451		
32	.81504 61760 64630 55538 80843 367		
33	.81511 26581 89812 54487 06526 018		
34	.81517 91301 39418 58859 92225 470		
6535	.81524 55919 16563 10267 45943 933		
36	.81531 20435 24359 07358 26383 132		
37	.81537 84849 65918 05906 91448 511		
38	.81544 49162 44350 18901 40062 431		
39	.81551 13373 62764 16630 47292 482		
6540	.81557 77483 24267 26770 92801 056		
41	.81564 41491 31965 34474 82622 300		
42	.81571 05397 88962 82456 64272 580		
43	.81577 69202 98362 71080 35200 552		
44	.81584 32906 63266 58446 44582 966		
6545	.81590 96508 86774 60478 88472 294		(445)
46	.81597 60009 71985 51011 98302 273		
47	.81604 23409 21996 61877 22757 458		
48	.81610 86707 39903 82990 03012 865		
49	.81617 49904 28801 62436 41349 773		

N	logarithm	ref
6550	.81624 12999 91783 06559 63153 760	
51	.81630 75994 31939 80046 72301 026	(290)
52	.81637 38887 52362 06014 99939 072	
53	.81644 01679 56138 66098 46667 769	(445)
54	.81650 64370 46357 00534 18126 863	
6555	.81657 26960 26103 08248 53995 965	
56	.81663 89448 98461 46943 50413 033	
57	.81670 51836 66515 33182 75817 385	
58	.81677 14123 33346 42477 80223 256	
59	.81683 76309 02035 09373 97929 907	
6560	.81690 38393 75660 27536 43674 289	
61	.81697 00377 57299 49836 02232 260	
62	.81703 62260 50028 88435 11474 354	
63	.81710 24042 56923 14873 38882 065	(445)
64	.81716 85723 81055 60153 51530 652	
6565	.81723 47304 25498 14826 79544 414	
66	.81730 08783 93321 29078 73030 411	
67	.81736 70162 87594 12814 52496 589	
68	.81743 31441 11384 35744 52760 259	
69	.81749 92618 67758 27469 60352 877	(446)
6570	.81756 53695 59780 77566 44427 070	
71	.81763 14671 90515 35672 81171 829	(446)
72	.81769 75547 63024 11572 71741 812	
73	.81776 36322 80367 75281 53706 667	
74	.81782 96997 45605 57131 06026 292	

N	logarithm	ref
6575	.81789 57571 61795 47854 47557 944	(447)
76	.81796 18045 31993 98671 29101 093	
77	.81802 78418 59256 21372 18985 922	
78	.81809 38691 46635 88403 82211 362	
79	.81815 98863 97185 32953 53138 541	
6580	.81822 58936 13955 49034 01745 528	(356)
81	.81829 18907 99995 91567 93449 241	
82	.81835 78779 58354 76472 42500 385	
83	.81842 38550 92078 80743 58957 277	
84	.81848 98222 04213 42540 89244 408	
6585	.81855 57792 97802 61271 50301 591	
86	.81862 17263 75888 97674 57329 540	
87	.81868 76634 41513 73905 45137 691	
88	.81875 35904 97716 73619 83100 130	
89	.81881 95075 47536 42057 83725 403	
6590	.81888 54145 94009 86128 04846 071	
91	.81895 13116 40172 74491 45433 771	
92	.81901 71986 89059 37645 35045 629	
93	.81908 30757 43702 68007 16907 790	
94	.81914 89428 07134 19998 24641 865	
6595	.81921 47998 82384 10127 52640 089	
96	.81928 06469 72481 17075 20094 954	
97	.81934 64840 80452 81776 28689 091	
98	.81941 23112 09325 07504 13951 172	
99	.81947 81283 62122 59953 90283 597	

N	logarithm	ref	
6600	.81954 39355 41868 67325 89667 692	(448)	
01	.81960 97327 51585 20408 94052 208		
02	.81967 55199 94292 72663 61430 819		
03	.81974 12972 73010 40305 45614 384		
04	.81980 70645 90756 02388 09703 692		
6605	.81987 28219 50546 00886 33268 408		
06	.81993 85693 55395 40779 13237 942		
07	.82000 43068 08317 90132 58509 961		
08	.82007 00343 12325 80182 78282 220		
09	.82013 57518 70430 05418 64113 454		
6610	.82020 14594 85640 23664 65718 977		
11	.82026 71571 60964 56163 60506 712		
12	.82033 28448 99409 87659 16859 314		
13	.82039 85227 03981 66478 51168 061		
14	.82046 41905 77684 04614 78624 187		
6615	.82052 98485 23519 77809 57773 322		(281)
16	.82059 54965 44490 25635 28838 687		
17	.82066 11346 43595 51577 45818 695		
18	.82072 67628 23834 23117 02364 618		
19	.82079 23810 88203 71812 51443 937		
6620	.82085 79894 39699 93382 18795 021		
21	.82092 35878 81317 47786 10178 761		
22	.82098 91764 16049 59308 12432 778		
23	.82105 47550 46888 16637 88333 813		
24	.82112 03237 76823 72952 65273 924		

(33)

N	logarithm	ref
6625	.82118 58826 08845 45999 17756 075	(448)
26	.82125 14315 45941 18175 43714 727	
27	.82131 69705 91097 36612 34667 022	
28	.82138 24997 47299 13255 39700 126	
29	.82144 80190 17530 24946 23300 345	
6630	.82151 35284 04773 13504 17029 555	
31	.82157 90279 12008 85807 65054 529	
32	.82164 45175 42217 13875 63534 723	
33	.82170 99972 98376 34948 93874 070	
34	.82177 54671 83463 51571 49842 343	
6635	.82184 09272 00454 31671 58571 617	
36	.82190 63773 52323 08642 95433 378	
37	.82197 18176 42042 81425 92801 811	
38	.82203 72480 72585 14588 42708 791	
39	.82210 26686 46920 38406 93396 096	
6640	.82216 80793 68017 48947 39770 362	
41	.82223 34802 38844 08146 07766 285	
42	.82229 88712 62366 43890 32623 577	
43	.82236 42524 41549 50099 31083 170	
44	.82242 96237 79356 86804 67508 160	
6645	.82249 49852 78750 80231 13934 982	
46	.82256 03369 42692 22877 04060 288	
47	.82262 56787 74140 73594 81169 009	
48	.82269 10107 76054 57671 40009 070	
49	.82275 63329 51390 66908 62618 214	

N	logarithm	ref
6650	.82282 16453 03104 59703 48108 396	(448)
51	.82288 69478 34150 61128 36413 208	
52	.82295 22405 47481 63011 26003 757	
53	.82301 75234 46049 24015 85578 465	
54	.82308 27965 32803 69721 59732 202	
6655	.82314 80598 10693 92703 68610 190	(269)
56	.82321 33132 82667 52613 01552 105	
57	.82327 85569 51670 76256 04731 782	
58	.82334 37908 20648 57674 62797 951	
59	.82340 90148 92544 58225 74521 389	
6660	.82347 42291 70301 06661 22453 908	(449)
61	.82353 94336 56858 99207 36604 561	
62	.82360 46283 55157 99644 52138 459	
63	.82366 98132 68136 39386 61103 581	
64	.82373 49883 98731 17560 58190 957	
6665	.82380 01537 49878 01085 80533 586	
66	.82386 53093 24511 24753 41549 474	
67	.82393 04551 25563 91305 58834 131	
68	.82399 55911 55967 71514 76107 896	
69	.82406 07174 18653 04262 79223 435	
6670	.82412 58339 16548 96620 06238 752	(409)
71	.82419 09406 52583 23924 51561 063	
72	.82425 60376 29682 29860 64166 845	
73	.82432 11248 50771 26538 39903 406	
74	.82438 62023 18773 94572 07877 292	

N	logarithm	ref
6675	.82445 12700 36612 83159 10934 835	(449)
76	.82451 63280 07209 10158 80240 171	
77	.82458 13762 33482 62171 03956 017	
78	.82464 64147 18351 94614 90032 515	
79	.82471 14434 64734 31807 23109 429	
6680	.82477 64624 75545 67041 15536 994	
81	.82484 14717 53700 62664 52520 683	
82	.82490 64713 02112 50158 31395 186	
83	.82497 14611 23693 30214 95032 859	
84	.82503 64412 21353 72816 59391 916	
6685	.82510 14115 98003 17313 35209 621	(411)
86	.82516 63722 56549 72501 43845 737	
87	.82523 13231 99900 16701 27281 477	
88	.82529 62644 30959 97835 52279 206	
89	.82536 11959 52633 33507 08708 129	
6690	.82542 61177 67823 11077 02041 195	(450)
91	.82549 10298 79430 87742 40028 456	
92	.82555 59322 90356 90614 13552 082	
93	.82562 08250 03500 16794 71668 272	
94	.82568 57080 21758 33455 90841 252	
6695	.82575 05813 48027 77916 38374 578	
96	.82581 54449 85203 57719 30044 941	
97	.82588 02989 36179 50709 81943 660	
98	.82594 51432 03848 05112 56531 068	
99	.82600 99777 91100 39609 02908 961	

N	logarithm	ref
6700	.82607 48027 00826 43414 91316 292	
01	.82613 96179 35914 76357 41853 290	(450)
02	.82620 44234 99252 68952 47439 157	
03	.82626 92193 93726 22481 91008 519	(419)
04	.82633 40056 22220 09070 56951 783	
6705	.82639 87821 87617 71763 36804 544	
06	.82646 35490 92801 24602 29191 203	
07	.82652 83063 40651 52703 34027 917	
08	.82659 30539 34048 12333 40990 039	
09	.82665 77918 75869 30987 12249 152	(450)
6710	.82672 25201 68992 07463 59484 850	
11	.82678 72388 16292 11943 15176 355	
12	.82685 19478 20643 86063 98179 111	
13	.82691 66471 84920 42998 73591 443	
14	.82698 13369 11993 67531 06916 399	
6715	.82704 60170 04734 16132 12523 861	
16	.82711 06874 66011 17036 96418 022	
17	.82717 53482 98692 70320 93315 322	
18	.82723 99995 05645 47975 98037 918	
19	.82730 46410 89734 93986 91227 759	(451)
6720	.82736 92730 53825 24407 59386 355	
21	.82743 38954 00779 27437 09245 286	
22	.82749 85081 33458 63495 76472 531	
23	.82756 31112 54723 65301 28719 650	
24	.82762 77047 67433 37944 63014 894	

N	logarithm	ref
6725	.82769 22886 74445 58965 97507 264	
26	.82775 68629 78616 78430 57566 583	
27	.82782 14276 82802 19004 56244 588	
28	.82788 59827 89855 76030 69102 101	
29	.82795 05283 02630 17604 03407 274	
6730	.82801 50642 23976 84647 61709 948	
31	.82807 95905 56745 90987 99797 135	
32	.82814 41073 03786 23430 79034 615	
33	.82820 86144 67945 41836 13099 683	(425)
34	.82827 31120 52069 79194 09110 008	
6735	.82833 76000 59004 41700 03153 623	
36	.82840 20784 91593 08829 90225 023	
37	.82846 65473 52678 33415 48572 356	(396)
38	.82853 10066 45101 41719 58460 677	
39	.82859 54563 71702 33511 15356 249	
6740	.82865 98965 35319 82140 37536 849	
41	.82872 43271 38791 34613 68133 046	
42	.82878 87481 84953 11668 71605 396	
43	.82885 31596 76640 07849 24662 527	
44	.82891 75616 16685 91580 01625 037	
6745	.82898 19540 07923 05241 54240 161	
46	.82904 63368 53182 65244 85952 136	
47	.82911 07101 55294 62106 20633 200	
48	.82917 50739 17087 60521 65780 145	
49	.82923 94281 41388 99441 70181 350	

N	logarithm	ref
6750	.82930 37728 31024 92145 76059 203	
51	.82936 81079 88820 26316 65692 831	
52	.82943 24336 17598 64115 02526 036	
53	.82949 67497 20182 42253 66765 337	
54	.82956 10562 99392 72071 85473 025	
6755	.82962 53533 58049 39609 57160 102	
56	.82968 96408 98971 05681 70884 005	
57	.82975 39189 24975 05952 19855 984	
58	.82981 81874 38877 51008 09563 025	
59	.82988 24464 43493 26433 60409 158	
6760	.82994 66959 41635 92884 04881 053	
61	.83001 09359 36117 86159 79242 734	(451)
62	.83007 51664 29750 17280 09764 274	
63	.83013 93874 25342 72556 93489 330	(452)
64	.83020 35989 25704 13668 73546 349	
6765	.83026 78009 33641 77734 09008 297	
66	.83033 19934 51961 77385 39305 735	
67	.83039 61764 83469 00842 43198 074	
68	.83046 03500 30967 11985 92307 849	
69	.83052 45140 97258 50430 99222 798	
6770	.83058 86686 85144 31600 60170 603	
71	.83065 28137 97424 46798 92271 066	
72	.83071 69494 36897 63284 65370 544	
73	.83078 10756 06361 24344 28463 445	
74	.83084 51923 08611 49365 30705 562	

N	logarithm	ref
6775	.83090 92995 46443 33909 37024 054	
76	.83097 33973 22650 49785 38328 853	
77	.83103 74856 40025 45122 56330 265	
78	.83110 15645 01359 44443 42967 564	
79	.83116 56339 09442 48736 74453 322	(452)
6780	.83122 96938 67063 35530 39938 266	
81	.83129 37443 77009 58964 24801 396	(362)
82	.83135 77854 42067 49862 88570 146	
83	.83142 18170 65022 15808 37475 319	
84	.83148 58392 48657 41212 91645 547	
6785	.83154 98519 95755 87391 46946 021	
86	.83161 38553 09098 92634 31466 221	
87	.83167 78491 91466 72279 56661 385	
88	.83174 18336 45638 18785 63152 426	
89	.83180 58086 74391 01803 61189 038	
6790	.83186 97742 80501 68249 65780 703	
91	.83193 37304 66745 42377 26500 288	(452)
92	.83199 76772 35896 25849 51964 980	
93	.83206 16145 90726 97811 28999 217	(453)
94	.83212 55425 34009 14961 36484 344	
6795	.83218 94610 68513 11624 53899 671	
96	.83225 33701 97007 99823 64559 620	
97	.83231 72699 22261 69351 53551 651	
98	.83238 11602 47040 87843 00379 638	
99	.83244 50411 74111 00846 66317 368	

N	logarithm	ref	
6800	.83250 89127 06236 31896 76476 838	(453)	
01	.83257 27748 46179 82584 96595 999		
02	.83263 66275 96703 32632 04550 623		
03	.83270 04709 60567 39959 56594 931		
04	.83276 43049 40531 40761 48335 643		
6805	.83282 81295 39353 49575 70444 079		
06	.83289 19447 59790 59355 59110 967		
07	.83295 57506 04598 41541 41248 585		
08	.83301 95470 76531 46131 74444 860		
09	.83308 33341 78343 01754 81674 056		
6810	.83314 71119 12785 15739 80768 680		
11	.83321 08802 82608 74188 08657 195		
12	.83327 46392 90563 42044 40372 181		
13	.83333 83889 39397 63168 02833 528		
14	.83340 21292 31858 60403 83411 274		
6815	.83346 58601 70692 35653 33272 677		
16	.83352 95817 58643 69945 65518 119		
17	.83359 32939 98456 23508 48110 425		
18	.83365 69968 92872 35838 91602 178		
19	.83372 06904 44633 25774 31665 613		
6820	.83378 43746 56478 91563 06429 661		(454)
21	.83384 80495 31148 10935 28628 702		
22	.83391 17150 71378 41173 52567 607		
23	.83397 53712 79906 19183 35907 615		
24	.83403 90181 59466 61563 96277 605		

(34)

N	logarithm	ref
6825	.83410 26557 12793 64678 62715 303	
26	.83416 62839 42620 04725 21942 994	
27	.83422 99028 51677 37806 59482 237	(454)
28	.83429 35124 42696 00000 95612 167	
29	.83435 71127 18405 07432 16175 875	(455)
6830	.83442 07036 81532 56339 98239 410	
31	.83448 42853 34805 23150 30607 933	
32	.83454 78576 80948 64545 29203 512	
33	.83461 14207 22687 17533 47309 107	(327)
34	.83467 49744 62743 99519 80683 215	
6835	.83473 85189 03841 08375 67549 709	
36	.83480 20540 48699 22508 83467 351	
37	.83486 55799 00038 00933 31083 481	
38	.83492 90964 60575 83339 24776 365	
39	.83499 26037 33029 90162 70190 696	
6840	.83505 61017 20116 22655 38670 717	
41	.83511 95904 24549 62954 36595 449	(455)
42	.83518 30698 49043 74151 69620 492	
43	.83524 65399 96311 00364 01830 870	
44	.83531 00008 69062 66802 09809 370	
6845	.83537 34524 70008 79840 31624 844	
46	.83543 68948 01858 27086 10744 925	
47	.83550 03278 67318 77449 34877 599	
48	.83556 37516 69096 81211 69746 078	
49	.83562 71662 09897 70095 87801 421	

N	logarithm	ref
6850	.83569 05714 92425 57334 91877 324	
51	.83575 39675 19383 37741 33791 524	
52	.83581 73542 93472 87776 27898 227	
53	.83588 07318 17394 65618 59595 995	
54	.83594 41000 93848 11233 88795 496	
6855	.83600 74591 25531 46443 48351 538	
56	.83607 08089 15141 74993 37463 789	
57	.83613 41494 65374 82623 10050 593	(426)
58	.83619 74807 78925 37134 58100 263	
59	.83626 08028 58486 88460 90004 273	
6860	.83632 41157 06751 68735 03876 705	
61	.83638 74193 26410 92358 55864 369	
62	.83645 07137 20154 56070 23451 946	
63	.83651 39988 90671 39014 63766 559	(455)
64	.83657 72748 40649 02810 66886 113	
6865	.83664 05415 72773 91620 04155 801	
66	.83670 37990 89731 32215 71517 113	
67	.83676 70473 94205 34050 27853 727	
68	.83683 02864 88878 89324 28358 620	
69	.83689 35163 76433 73054 52926 754	(348)
6870	.83695 67370 59550 43142 29577 688	
71	.83701 99485 40908 40441 52912 441	(353)
72	.83708 31508 23185 88826 97608 964	
73	.83714 63439 09059 95262 26960 527	
74	.83720 95278 01206 49867 96461 369	

N	logarithm	ref
6875	.83727 27025 02300 25989 52443 923	
76	.83733 58680 15014 80265 25771 942	
77	.83739 90243 42022 52694 20593 824	
78	.83746 21714 85994 66703 98160 469	
79	.83752 53094 49601 29218 55711 951	
6880	.83758 84382 35511 30726 00437 321	
81	.83765 15578 46392 45346 18511 833	
82	.83771 46682 84911 30898 39215 876	
83	.83777 77695 53733 28968 94139 916	(324)
84	.83784 08616 55522 64978 71479 716	
6885	.83790 39445 92942 48250 65426 126	
86	.83796 70183 68654 72077 20653 708	
87	.83803 00829 85320 13787 71912 467	
88	.83809 31384 45598 34815 78726 960	
89	.83815 61847 52147 80766 55207 041	
6890	.83821 92219 07625 81483 94974 496	
91	.83828 22499 14688 51117 91209 828	
92	.83834 52687 75990 88191 51823 435	
93	.83840 82784 94186 75668 09755 424	
94	.83847 12790 71928 81018 28408 307	
6895	.83853 42705 11868 56287 02216 816	
96	.83859 72528 16656 38160 52359 051	
97	.83866 02259 88941 48033 17613 215	
98	.83872 31900 31371 92074 40364 137	
99	.83878 61449 46594 61295 47763 808	(456)

N	logarithm	ref
6900	.83884 90907 37255 31616 28050 155	
01	.83891 20274 05998 63932 02028 238	
02	.83897 49549 55468 04179 89718 106	
03	.83903 78733 88305 83405 72173 490	
04	.83910 07827 07153 17830 48475 539	
6905	.83916 36829 14650 08916 87905 797	
06	.83922 65740 13435 43435 77302 594	
07	.83928 94560 06146 93532 63605 059	(456)
08	.83935 23288 95421 16793 91588 906	
09	.83941 51926 83893 56313 36798 199	
6910	.83947 80473 74198 40758 33677 243	
11	.83954 08929 68968 84435 98906 785	(62,265,268)
12	.83960 37294 70836 87359 49948 676	
13	.83966 65568 82433 35314 18803 164	
14	.83972 93752 06387 99923 60982 966	
6915	.83979 21844 45329 38715 59708 270	
16	.83985 49846 01884 95188 25326 817	
17	.83991 77756 78680 98875 89963 200	(457)
18	.83998 05576 78342 65414 97401 523	
19	.84004 33306 03493 96609 88205 551	
6920	.84010 60944 56757 80498 80080 482	
21	.84016 88492 40755 91419 43480 465	
22	.84023 15949 58108 90074 72465 986	
23	.84029 43316 11436 23598 50815 241	
24	.84035 70592 03356 25621 13393 603	

N	logarithm	ref
6925	.84041 97777 36486 16335 02785 302	
26	.84048 24872 13442 02560 21191 411	
27	.84054 51876 36838 77809 77598 248	
28	.84060 78790 09290 22355 30220 286	
29	.84067 05613 33409 03292 24221 659	
6930	.84073 32346 11806 74605 24720 363	
31	.84079 58988 47093 77233 45079 231	
32	.84085 85540 41879 39135 70487 750	
33	.84092 12001 98771 75355 76838 816	
34	.84098 38373 20377 88087 44904 491	
6935	.84104 64654 09303 66739 69814 815	
36	.84110 90844 68153 88001 65843 761	
37	.84117 16944 99532 15907 66506 374	
38	.84123 42955 06041 01902 19971 158	
39	.84129 68874 90281 84904 79791 757	
6940	.84135 94704 54854 91374 90961 979	
41	.84142 20444 02359 35376 71298 212	
42	.84148 46093 35393 18643 88153 256	
43	.84154 71652 56553 30644 30465 623	
44	.84160 97121 68435 48644 76148 323	
6945	.84167 22500 73634 37775 54821 170	
46	.84173 47789 74743 51095 05890 623	
47	.84179 72988 74355 29654 31981 195	(457)
48	.84185 98097 75061 02561 47722 423	
49	.84192 23116 79450 87046 23895 431	(458)

N	logarithm	ref
6950	.84198 48045 90113 88524 26943 076	
51	.84204 72885 09638 00661 53847 692	
52	.84210 97634 40610 05438 62380 419	
53	.84217 22293 85615 73214 96726 121	
54	.84223 46863 47239 62793 08487 875	
6955	.84229 71343 28065 21482 73075 027	
56	.84235 95733 30674 85165 01478 784	
57	.84242 20033 57649 78356 47439 337	
58	.84248 44244 11570 14273 10008 469	
59	.84254 68364 95014 94894 31511 642	(358)
6960	.84260 92396 10562 11026 90913 504	
61	.84267 16337 60788 42368 92590 801	(458)
62	.84273 40189 48269 57573 50516 638	
63	.84279 63951 75580 14312 67860 044	
64	.84285 87624 45293 59341 12004 804	
6965	.84292 11207 59982 28559 84991 483	
66	.84298 34701 22217 47079 89386 610	
67	.84304 58105 34569 29285 89582 935	(267)
68	.84310 81419 99606 78899 68534 713	
69	.84317 04645 19897 89043 79931 937	
6970	.84323 27780 98009 42304 95817 443	
71	.84329 50827 36507 10797 49650 819	(458)
72	.84335 73784 37955 56226 74823 033	
73	.84341 96652 04918 29952 38625 688	
74	.84348 19430 39957 73051 71678 823	

N	logarithm	ref
6975	.84354 42119 45635 16382 92821 172	(459)
76	.84360 64719 24510 80648 29466 760	
77	.84366 87229 79143 76457 33431 768	
78	.84373 09651 12092 04389 92235 538	
79	.84379 31983 25912 55059 35879 614	
6980	.84385 54226 23161 09175 39108 719	(342)
81	.84391 76380 06392 37607 19157 530	
82	.84397 98444 78160 01446 28987 151	
83	.84404 20420 41016 52069 46015 149	
84	.84410 42306 97513 31201 56343 023	
6985	.84416 64104 50200 70978 34484 983	
86	.84422 85813 01627 94009 18601 894	
87	.84429 07432 54343 13439 81244 247	
88	.84435 28963 10893 33014 95608 025	
89	.84441 50404 73824 47140 97307 294	
6990	.84447 71757 45681 40948 41667 387	(459)
91	.84453 93021 29007 90354 56542 519	
92	.84460 14196 26346 62125 90661 669	
93	.84466 35282 40239 13940 57506 579	
94	.84472 56279 73225 94450 74725 685	
6995	.84478 77188 27846 43344 99087 828	(418)
96	.84484 98008 06638 91410 56979 556	
97	.84491 18739 12140 60595 70449 844	
98	.84497 39381 46887 64071 78806 059	
99	.84503 59935 13415 06295 55764 963	

N	logarithm	ref
7000	.84509 80400 14256 83071 22162 586	(460)
01	.84516 00776 51945 81612 54226 760	
02	.84522 21064 29013 80604 87416 130	
03	.84528 41263 47991 50267 15829 421	
04	.84534 61374 11408 52413 87188 784	
7005	.84540 81396 21793 40516 93400 983	(460)
06	.84547 01329 81673 59767 56700 235	
07	.84553 21174 93575 47138 11376 464	
08	.84559 40931 60024 31443 81092 773	
09	.84565 60599 83544 33404 51795 892	
7010	.84571 80179 66658 65706 40223 373	(460)
11	.84577 99671 11889 33063 58011 322	
12	.84584 19074 21757 32279 71406 411	
13	.84590 38388 98782 52309 56585 930	
14	.84596 57615 45483 74320 50589 665	
7015	.84602 76753 64378 71753 97867 313	(460)
16	.84608 95803 57984 10386 92445 222	
17	.84615 14765 28815 48393 15716 181	
18	.84621 33638 79387 36404 69856 002	
19	.84627 52424 12213 17573 06870 648	
7020	.84633 71121 29805 27630 53277 624	(460)
21	.84639 89730 34674 94951 30425 375	
22	.84646 08251 29332 40612 70454 406	
23	.84652 26684 16286 78456 27903 865	
24	.84658 45028 98046 15148 86967 295	

(35)

N	logarithm	ref
7025	.84664 63285 77117 50243 64401 268	(267)
26	.84670 81454 56006 76241 08090 634	
27	.84676 99535 37218 78649 91274 069	
28	.84683 17528 23257 36048 02433 647	
29	.84689 35433 16625 20143 30852 128	
7030	.84695 53250 19823 95834 47841 653	
31	.84701 70979 35354 21271 83647 562	
32	.84707 88620 65715 47918 00031 000	
33	.84714 06174 13406 20608 58534 018	
34	.84720 23639 80923 77612 84430 837	
7035	.84726 41017 70764 50694 26368 963	
36	.84732 58307 85423 65171 11703 834	
37	.84738 75510 27395 39976 97530 649	
38	.84744 92624 99172 87721 17417 078	
39	.84751 09652 03248 14749 23840 494	
7040	.84757 26591 42112 21203 26333 396	(462)
41	.84763 43443 18255 01082 25340 684	
42	.84769 60207 34165 42302 41792 436	
43	.84775 76883 92331 26757 42395 838	
44	.84781 93472 95239 30378 60649 913	
7045	.84788 09974 45375 23195 13586 693	
46	.84794 26388 45223 69394 14242 475	
47	.84800 42714 97268 27380 79862 792	
48	.84806 58954 03991 49838 35844 736	
49	.84812 75105 67874 83788 15420 260	

N	logarithm	ref
7050	.84818 91169 91398 70649 55084 080	
51	.84825 07146 77042 46299 85769 809	
52	.84831 23036 27284 41134 19777 926	
53	.84837 38838 44601 80125 33459 209	
54	.84843 54553 31470 82883 45657 227	
7055	.84849 70180 90366 63715 91913 516	
56	.84855 85721 23763 31686 94439 026	
57	.84862 01174 34133 90677 27855 448	(462)
58	.84868 16540 23950 39443 80710 016	
59	.84874 31818 95683 71679 12767 376	
7060	.84880 47010 51803 76071 08082 107	
61	.84886 62114 94779 36362 23855 488	
62	.84892 77132 27078 31409 35080 087	
63	.84898 92062 51167 35242 74975 751	
64	.84905 06905 69512 17125 71220 575	
7065	.84911 21661 84577 41613 77980 417	
66	.84917 36330 98826 68614 03740 530	
67	.84923 50913 14722 53444 34942 878	
68	.84929 65408 34726 46892 55432 686	
69	.84935 79816 61298 95275 61717 795	(463)
7070	.84941 94137 96899 40498 74044 368	
71	.84948 08372 43986 20114 43292 497	
72	.84954 22520 05016 67381 53695 259	
73	.84960 36580 82447 11324 21384 767	
74	.84966 50554 78732 76790 88768 752	

N	logarithm	ref
7075	.84972 64441 96327 84513 14741 211	(463)
76	.84978 78242 37685 51164 60730 662	
77	.84984 91956 05257 89419 72589 520	
78	.84991 05583 01496 08012 58328 142	
79	.84997 19123 28850 11795 61697 034	
7080	.85003 32576 89769 01798 31620 772	
81	.85009 45943 86700 75285 87487 121	
82	.85015 59224 22092 25817 80294 887	
83	.85021 72417 98389 43306 49663 996	
84	.85027 85525 18037 14075 76711 315	
7085	.85033 98545 83479 20919 32795 708	
86	.85040 11479 97158 43159 24135 829	
87	.85046 24327 61516 56704 32304 145	
88	.85052 37088 78994 34108 50600 686	
89	.85058 49763 52031 44629 16309 999	
7090	.85064 62351 83066 54285 38844 798	
91	.85070 74853 74537 25916 23779 787	
92	.85076 87269 28880 19238 92779 137	
93	.85082 99598 48530 90906 99421 087	
94	.85089 11841 35923 94568 40923 142	
7095	.85095 23997 93492 80923 65771 330	
96	.85101 36068 23669 97783 77256 991	
97	.85107 48052 28886 90128 32924 548	
98	.85113 59950 11574 00163 39933 725	
99	.85119 71761 74160 67379 46339 656	

N	logarithm	ref
7100	.85125 83487 19075 28609 28294 350	(463)
01	.85131 95126 48745 18085 73172 936	
02	.85138 06679 65596 67499 58628 156	
03	.85144 18146 72055 06057 27576 525	
04	.85150 29527 70544 60538 59119 611	
7105	.85156 40822 63488 55354 35403 854	(75,267)
06	.85162 52031 53309 12604 04422 361	
07	.85168 63154 42427 52133 38762 101	
08	.85174 74191 33263 91591 90299 930	
09	.85180 85142 28237 46490 40850 849	
7110	.85186 96007 29766 30258 48771 930	
11	.85193 06786 40267 54301 91525 305	
12	.85199 17479 62157 28060 04203 646	
13	.85205 28086 97850 59063 14021 525	
14	.85211 38608 49761 52989 70776 066	
7115	.85217 49044 20303 13723 73280 287	
16	.85223 59394 11887 43411 91772 525	
17	.85229 69658 26925 42520 86305 340	
18	.85235 79836 67827 09894 21117 287	
19	.85241 89929 37001 42809 74990 937	
7120	.85247 99936 36856 37036 47600 539	(464)
21	.85254 09857 69798 86891 61852 690	
22	.85260 19693 38234 85297 62223 405	
23	.85266 29443 44569 23839 09094 937	
24	.85272 39107 91205 92819 69095 745	

N	logarithm	ref
7125	.85278 48686 80547 81319 01446 948	
26	.85284 58180 14996 77249 40318 649	
27	.85290 67587 96953 67412 73199 472	(307)
28	.85296 76910 28818 37557 15282 684	
29	.85302 86147 12989 72433 79872 244	(406)
7130	.85308 95298 51865 55853 44812 124	
31	.85315 04364 47842 70743 14942 268	
32	.85321 13345 03316 99202 80584 512	
33	.85327 22240 20683 22561 72061 809	
34	.85333 31050 02335 21435 10254 109	
7135	.85339 39774 50665 75780 53194 206	
36	.85345 48413 68066 64954 38706 899	
37	.85351 56967 56928 67768 23094 782	
38	.85357 65436 19641 62545 15874 000	
39	.85363 73819 58594 27176 10563 270	
7140	.85369 82117 76174 39176 11529 509	
41	.85375 90330 74768 75740 56893 359	
42	.85381 98458 56763 13801 37497 938	
43	.85388 06501 24542 30083 11944 111	
44	.85394 14458 80490 01159 17695 594	
7145	.85400 22331 26989 03507 78257 184	
46	.85406 30118 66421 13568 06429 419	
47	.85412 37821 01167 07796 03642 956	
48	.85418 45438 33606 62720 55375 962	
49	.85424 52970 66118 54999 22657 809	

N	logarithm	ref
7150	.85430 60418 01080 61474 29662 345	(464)
51	.85436 67780 40869 59228 47394 035	
52	.85442 75057 87861 25640 73470 248	
53	.85448 82250 44430 38442 08002 955	
54	.85454 89358 12950 75771 25583 124	
7155	.85460 96380 95795 16230 43371 067	(465)
56	.85467 03318 95335 38940 85296 015	
57	.85473 10172 13942 23598 42368 177	
58	.85479 16940 53985 50529 29106 543	
59	.85485 23624 17834 00745 36085 685	
7160	.85491 30223 07855 55999 78604 812	
61	.85497 36737 26416 98842 41482 332	
62	.85503 43166 75884 12675 19979 150	
63	.85509 49511 58621 81807 56853 967	
64	.85515 55771 76993 91511 75553 804	
7165	.85521 61947 33363 28078 09542 996	
66	.85527 68038 30091 78870 27773 886	
67	.85533 74044 69540 32380 56302 445	
68	.85539 79966 54068 78284 96052 058	
69	.85545 85803 86036 07498 36728 687	
7170	.85551 91556 67800 12229 66890 634	
71	.85557 97225 01717 86036 80176 133	
72	.85564 02808 90145 23881 77691 966	
73	.85570 08308 35437 22185 66566 337	
74	.85576 13723 39947 78883 54669 190	

N	logarithm	ref
7175	.85582 19054 06029 93479 41503 191	(465)
76	.85588 24300 36035 67101 05268 576	
77	.85594 29462 32316 02554 86105 052	
78	.85600 34539 97221 04380 65513 959	
79	.85606 39533 33099 78906 41963 881	
7180	.85612 44442 42300 34303 02682 891	(376)
81	.85618 49267 27169 80638 91640 631	
82	.85624 54007 90054 29934 73723 388	
83	.85630 58664 33298 96217 95105 367	
84	.85636 63236 59247 95577 39819 326	
7185	.85642 67724 70244 46217 82529 755	(465)
86	.85648 72128 68630 68514 37511 757	
87	.85654 76448 56747 85067 03838 820	
88	.85660 80684 36936 20755 06782 618	
89	.85666 84836 11535 02791 35428 030	
7190	.85672 88903 82882 60776 76506 514	(465)
91	.85678 92887 53316 26754 44451 003	
92	.85684 96787 25172 35264 07675 473	
93	.85691 00603 00786 23396 11082 330	
94	.85697 04334 82492 30845 94800 768	
7195	.85703 07982 72623 99968 09159 233	(465)
96	.85709 11546 73513 75830 25895 140	
97	.85715 15026 87493 06267 45604 976	
98	.85721 18423 16892 41936 01437 930	
99	.85727 21735 64041 36367 59036 171	

N	logarithm	ref
7200	.85733 24964 31268 46023 12724 907	
01	.85739 28109 20901 30346 77955 352	
02	.85745 31170 35266 51819 80003 723	
03	.85751 34147 76689 76014 38929 376	
04	.85757 37041 47495 71647 50795 217	
7205	.85763 39851 50008 10634 65153 472	
06	.85769 42577 86549 68143 58799 962	
07	.85775 45220 59442 22648 05799 950	(466)
08	.85781 47779 71006 55981 43788 701	
09	.85787 50255 23562 53390 36549 827	
7210	.85793 52647 19429 03588 32874 532	
11	.85799 54955 60923 98809 21704 843	(466)
12	.85805 57180 50364 34860 83563 927	
13	.85811 59321 90066 11178 38276 571	(467)
14	.85817 61379 82344 30877 88982 921	
7215	.85823 63354 29513 00809 62448 560	
16	.85829 65245 33885 31611 45674 001	
17	.85835 67052 97773 37762 18806 676	
18	.85841 68777 23488 37634 84358 494	
19	.85847 70418 13340 53549 92732 036	(440)
7220	.85853 71975 69639 11828 64058 462	
21	.85859 73449 94692 42846 06350 183	
22	.85865 74840 90807 81084 29971 369	
23	.85871 76148 60291 65185 58429 356	
24	.85877 77373 05449 38005 35489 993	

(36)

N	logarithm	ref
7225	.85883 78514 28585 46665 28619 992	(467)
26	.85889 79572 32003 42606 28759 337	
27	.85895 80547 18005 81641 46426 782	
28	.85901 81438 88894 24009 04161 497	
29	.85907 82247 46969 34425 25303 898	
7230	.85913 82972 94530 82137 19118 697	
31	.85919 83615 33877 40975 62263 213	
32	.85925 84174 67306 89407 76603 970	
33	.85931 84650 97116 10590 03384 611	
34	.85937 85044 25600 92420 73748 170	
7235	.85943 85354 55056 27592 75616 696	(468)
36	.85949 85581 87776 13646 16931 284	
37	.85955 85726 26053 53020 85255 501	
38	.85961 85787 72180 53109 03745 240	
39	.85967 85766 28448 26307 83488 008	
7240	.85973 85661 97146 90071 72214 659	(468)
41	.85979 85474 80565 66964 99386 568	
42	.85985 85204 80992 84714 17661 273	
43	.85991 84852 00715 76260 40739 553	
44	.85997 84416 42020 79811 77596 965	
7245	.86003 83898 07193 38895 63102 826	(453)
46	.86009 83296 98518 02410 85029 631	
47	.86015 82613 18278 24680 07455 888	
48	.86021 81846 68756 65501 90565 375	
49	.86027 80997 52234 90203 06845 783	

N	logarithm	ref
7250	.86033 80065 70993 69690 53689 735	(296)
51	.86039 79051 27312 80503 62401 155	
52	.86045 77954 23471 04866 03609 962	
53	.86051 76774 61746 30737 89098 059	
54	.86057 75512 44415 51867 70039 593	
7255	.86063 74167 73754 67844 31658 434	
56	.86069 72740 52038 84148 84305 857	
57	.86075 71230 81542 12206 50961 378	
58	.86081 69638 64537 69438 51159 688	
59	.86087 67964 03297 79313 81346 667	
7260	.86093 66207 00093 71400 91667 405	
61	.86099 64367 57195 81419 59189 187	
62	.86105 62445 76873 51292 57562 396	
63	.86111 60441 61395 29197 23122 256	
64	.86117 58355 13028 69617 17434 384	
7265	.86123 56186 34040 33393 86287 056	
66	.86129 53935 26695 87778 15133 153	
67	.86135 51601 93260 06481 80984 691	
68	.86141 49186 35996 69729 00762 882	
69	.86147 46688 57168 64307 76106 644	
7270	.86153 44108 59037 83621 34642 487	
71	.86159 41446 43865 27739 67718 689	
72	.86165 38702 13911 03450 64606 689	
73	.86171 35875 71434 24311 43172 600	
74	.86177 32967 18693 10699 77021 764	

N	logarithm	ref	
7275	.86183 29976 57944 89865 19119 255		
76	.86189 26903 91445 95980 21889 232		
77	.86195 23749 21451 70191 53796 053		
78	.86201 20512 50216 60671 12410 037		
79	.86207 17193 79994 22667 33960 797		
7280	.86213 13793 13037 18555 99381 007		(115,260)
81	.86219 10310 51597 17891 36843 524		
82	.86225 06745 97924 97457 20794 733		
83	.86231 03099 54270 41317 67487 018		
84	.86236 99371 22882 40868 27013 232		
7285	.86242 95561 06008 94886 71846 048		
86	.86248 91669 05897 09583 81885 084		
87	.86254 87695 24792 98654 26014 651		
88	.86260 83639 64941 83327 40175 020		
89	.86266 79502 28587 92418 01950 073		
7290	.86272 75283 17974 62377 01674 195		
91	.86278 70982 35344 37342 10061 286		
92	.86284 66599 82938 69188 42358 741		
93	.86290 62135 62998 17579 19029 268		
94	.86296 57589 77762 50016 22963 399		
7295	.86302 52962 29470 41890 53225 541	(468)	
96	.86308 48253 20359 76532 75336 421		
97	.86314 43462 52667 45263 68094 778		
98	.86320 38590 28629 47444 66941 144		
99	.86326 33636 50480 90528 03866 548		

N	logarithm	ref
7300	.86332 28601 20455 90107 43869 005	
01	.86338 23484 40787 69968 17960 598	
02	.86344 18286 13708 62137 52728 019	
03	.86350 13006 41450 06934 96449 368	
04	.86356 07645 26242 53022 41770 074	
7305	.86362 02202 70315 57454 44940 730	
06	.86367 96678 75897 85728 41619 689	
07	.86373 91073 45217 11834 59243 242	(469)
08	.86379 85386 80500 18306 25966 175	
09	.86385 79618 83972 96269 76175 545	(469)
7310	.86391 73769 57860 45494 52580 476	
11	.86397 67839 04386 74443 04880 783	
12	.86403 61827 25775 00320 85017 241	
13	.86409 55734 24247 49126 39006 296	
14	.86415 49560 02025 55700 95362 019	
7315	.86421 43304 61329 63778 50108 109	
16	.86427 36968 04379 26035 48382 741	
17	.86433 30550 33393 04140 62639 046	
18	.86439 24051 50588 68804 67444 022	
19	.86445 17471 58182 99830 10878 657	
7320	.86451 10810 58391 86160 82542 065	
21	.86457 04068 53430 25931 78162 395	(469)
22	.86462 97245 45512 26518 60817 322	
23	.86468 90341 36851 04587 18766 867	
24	.86474 83356 29658 86143 19901 349	

N	logarithm	ref
7325	.86480 76290 26147 06581 62807 232	
26	.86486 69143 28526 10736 24453 620	
27	.86492 61915 39005 52929 04502 205	
28	.86498 54606 59793 97019 66243 391	
29	.86504 47216 93099 16454 74161 390	
7330	.86510 39746 41127 94317 28131 026	
31	.86516 32195 06086 23375 94249 019	(470)
32	.86522 24562 90179 06134 32302 501	
33	.86528 16849 95610 54880 19877 500	(103,260)
34	.86534 09056 24583 91734 73110 168	
7335	.86540 01181 79301 48701 64083 477	
36	.86545 93226 61964 67716 34872 135	
37	.86551 85190 74774 00695 08238 465	
38	.86557 77074 19929 09583 94981 984	
39	.86563 68876 99628 66407 97945 417	
7340	.86569 60599 16070 53320 12679 877	
41	.86575 52240 71451 62650 24771 948	
42	.86581 43801 67967 96954 03835 395	
43	.86587 35282 07814 69061 94170 225	
44	.86593 26681 93186 02128 02091 830	
7345	.86599 18001 26275 29678 79932 918	
46	.86605 09240 09274 95662 06720 967	
47	.86611 00398 44376 54495 65533 899	
48	.86616 91476 33770 71116 17536 706	
49	.86622 82473 79647 21027 72701 723	(461)

N	logarithm	ref
7350	.86628 73390 84194 90350 57215 257	(54,260)
51	.86634 64227 49601 75869 77573 288	
52	.86640 54983 78054 85083 81368 928	
53	.86646 45659 71740 36253 14774 355	
54	.86652 36255 32843 58448 76719 904	
7355	.86658 26770 63548 91600 69773 016	
56	.86664 17205 66039 86546 47719 742	
57	.86670 07560 42499 05079 59851 477	
58	.86675 97834 95108 19997 91959 632	
59	.86681 88029 26048 15152 04040 907	
7360	.86687 78143 37498 85493 64715 859	
61	.86693 68177 31639 37123 82363 440	
62	.86699 58131 10647 87341 32974 190	
63	.86705 48004 76701 64690 84724 740	
64	.86711 37798 31977 09011 19276 319	
7365	.86717 27511 78649 71483 49799 921	(470)
66	.86723 17145 18894 14679 35730 795	
67	.86729 06698 54884 12608 94254 939	
68	.86734 96171 88792 50769 08530 240	
69	.86740 85565 22791 26191 32644 927	
7370	.86746 74878 59051 47489 93316 005	
71	.86752 64111 99743 34909 88330 296	
72	.86758 53265 47036 20374 81730 769	
73	.86764 42339 03098 47534 95750 787	
74	.86770 31332 70097 71814 99498 925	

N	logarithm	ref
7375	.86776 20246 50200 60461 94397 004	(363)
76	.86782 09080 45572 92592 96373 974	
77	.86787 97834 58379 59243 14818 302	
78	.86793 86508 90784 63413 28291 478	
79	.86799 75103 44951 20117 57005 293	
7380	.86805 63618 23041 56431 32065 512	
81	.86811 52053 27217 11538 61484 562	
82	.86817 40408 59638 36779 92965 885	
83	.86823 28684 22464 95699 73462 550	
84	.86829 16880 17855 64094 05512 772	
7385	.86835 04996 47968 30058 00354 938	
86	.86840 93033 14959 94033 27824 768	
87	.86846 80990 20986 68855 63037 217	
88	.86852 68867 68203 79802 29855 733	
89	.86858 56665 58765 64639 41151 482	
7390	.86864 44383 94825 73669 35855 143	
91	.86870 32022 78536 69778 12803 875	
92	.86876 19582 12050 28482 61386 067	
93	.86882 07061 97517 37977 88986 457	
94	.86887 94462 37087 99184 45234 226	
7395	.86893 81783 32911 25795 43056 658	
96	.86899 69024 87135 44323 76540 959	
97	.86905 56187 01907 94149 35606 820	
98	.86911 43269 79375 27566 17492 316	
99	.86917 30273 21683 09829 35055 725	

N	logarithm	ref
7400	.86923 17197 30976 19202 21895 843	
01	.86929 04042 09398 47003 34293 378	
02	.86934 90807 59092 97653 49976 008	
03	.86940 77493 82201 88722 63709 661	
04	.86946 64100 80866 50976 79718 600	
7405	.86952 50628 57227 28425 00936 887	
06	.86958 37077 13423 78366 15093 778	
07	.86964 23446 51594 71435 77635 631	
08	.86970 09736 73877 91652 91486 873	
09	.86975 95947 82410 36466 83652 603	
7410	.86981 82079 79328 16803 78665 370	
11	.86987 68132 66766 57113 68878 701	(471)
12	.86993 54106 46859 95416 81609 914	
13	.86999 40001 21741 83350 43134 778	
14	.87005 25816 93544 86215 39536 562	
7415	.87011 11553 64400 83022 74412 018	
16	.87016 97211 36440 66540 23436 853	
17	.87022 82790 11794 43338 85793 206	(471)
18	.87028 68289 92591 33839 32461 699	
19	.87034 53710 80959 72358 51380 573	
7420	.87040 39052 79027 07155 89474 449	
21	.87046 24315 88920 00479 91555 264	
22	.87052 09500 12764 28614 36097 872	
23	.87057 94605 52684 81924 67892 880	
24	.87063 79632 10805 64904 27579 208	

(37)

N	logarithm	ref
7425	.87069 64579 89249 96220 78058 916	(472)
26	.87075 49448 90140 08762 27796 807	
27	.87081 34239 15597 49683 51007 326	
28	.87087 18950 67742 80452 04731 271	
29	.87093 03583 48695 76894 42804 823	
7430	.87098 88137 60575 29242 26723 412	
31	.87104 72613 05499 42178 33402 918	
32	.87110 57009 85585 34882 59840 720	
33	.87116 41328 02949 41078 24679 093	
34	.87122 25567 59707 09077 66673 444	
7435	.87128 09728 57973 01828 40067 907	
36	.87133 93810 99860 96959 06880 766	
37	.87139 77814 87483 86825 26102 220	
38	.87145 61740 22953 78555 39806 970	
39	.87151 45587 08381 94096 56184 120	
7440	.87157 29355 45878 70260 29486 875	
41	.87163 13045 37553 58768 36904 532	
42	.87168 96656 85515 26298 52359 222	
43	.87174 80189 91871 54530 17229 910	
44	.87180 63644 58729 40190 08006 106	
7445	.87186 47020 88194 95098 00873 777	
46	.87192 30318 82373 46212 33235 928	
47	.87198 13538 43369 35675 62170 315	
48	.87203 96679 73286 20860 19826 771	
49	.87209 79742 74226 74413 65766 595	

N	logarithm	ref
7450	.87215 62727 48292 84304 36246 479	(351)
51	.87221 45633 97585 53866 90449 432	
52	.87227 28462 24205 01847 53665 147	
53	.87233 11212 30250 62449 57422 289	
54	.87238 93884 17820 85378 76575 132	
7455	.87244 76477 89013 35888 63347 022	(472)
56	.87250 58993 45924 94825 78333 091	
57	.87256 41430 90651 58675 18464 692	
58	.87262 23790 25288 39605 41937 978	
59	.87268 06071 51929 65513 90109 083	
7460	.87273 88274 72668 80072 06358 334	
61	.87279 70399 89598 42770 51925 946	
62	.87285 52447 04810 28964 18721 612	
63	.87291 34416 20395 29917 39110 449	
64	.87297 16307 38443 52848 92677 707	
7465	.87302 98120 61044 20977 09974 681	
66	.87308 79855 90285 73564 73248 256	
67	.87314 61513 28255 65964 14156 497	
68	.87320 43092 77040 69662 08472 713	
69	.87326 24594 38726 72324 67780 415	
7470	.87332 06018 15398 77842 28161 585	
71	.87337 87364 09141 06374 35880 666	
72	.87343 68632 22036 94394 30066 687	
73	.87349 49822 56168 94734 22395 943	
74	.87355 30935 13618 76629 73777 625	

N	logarithm	ref
7475	.87361 11969 96467 25764 68044 807	(395)
76	.87366 92927 06794 44315 82653 210	
77	.87372 73806 46679 50997 56390 117	
78	.87378 54608 18200 81106 54095 865	
79	.87384 35332 23435 86566 28400 294	
7480	.87390 15978 64461 35971 78476 550	(473)
81	.87395 96547 43353 14634 05814 644	
82	.87401 77038 62186 24624 67017 142	
83	.87407 57452 23034 84820 23619 385	
84	.87413 37788 27972 30946 88936 623	
7485	.87419 18046 79071 15624 71940 446	(473)
86	.87424 98227 78403 08412 18166 882	
87	.87430 78331 28038 95850 47658 566	
88	.87436 58357 30048 81507 89943 328	
89	.87442 38305 86501 86024 16051 597	
7490	.87448 18176 99466 47154 67574 981	(474)
91	.87453 97970 71010 19814 82768 393	
92	.87459 77687 03199 76124 19698 102	
93	.87465 57325 98101 05450 76438 064	
94	.87471 36887 57779 14455 08316 890	
7495	.87477 16371 84298 27134 42217 839	(83,259)
96	.87482 95778 79721 84866 87934 163	
97	.87488 75108 46112 46455 46582 180	
98	.87494 54360 85531 88172 16074 429	
99	.87500 33536 00041 03801 93655 248	

N	logarithm	ref
7500	.87506 12633 91700 04686 75501 138	
01	.87511 91654 62568 19769 53388 255	
02	.87517 70598 14703 95638 08429 373	
03	.87523 49464 50164 96569 01882 670	
04	.87529 28253 71008 04571 63034 667	
7505	.87535 06965 79289 19431 74159 675	
06	.87540 85600 77063 58755 52558 068	
07	.87546 64158 66385 58013 29675 734	(120,259)
08	.87552 42639 49308 70583 27307 024	
09	.87558 21043 27885 67795 30883 543	
7510	.87563 99370 04168 38974 59851 093	
11	.87569 77619 80207 91485 35137 111	
12	.87575 55792 58054 50774 43710 923	
13	.87581 33888 39757 60415 00239 123	
14	.87587 11907 27365 82150 05838 413	
7515	.87592 89849 22926 95936 03928 217	
16	.87598 67714 28487 99986 33185 373	
17	.87604 45502 46095 10814 77603 236	(281)
18	.87610 23213 77793 63279 13657 483	
19	.87616 00848 25628 10624 54580 951	
7520	.87621 78405 91642 24526 91749 783	
21	.87627 55886 77878 95136 33183 231	
22	.87633 33290 86380 31120 39159 369	
23	.87639 10618 19187 59707 54949 056	(268,265)
24	.87644 87868 78341 26730 40670 430	

N	logarithm	ref
7525	.87650 65042 65880 96668 98266 224	(474)
26	.87656 42139 83845 52693 95606 214	
27	.87662 19160 34272 96709 87717 076	
28	.87667 96104 19200 49398 35141 947	
29	.87673 72971 40664 50261 19431 986	
7530	.87679 49762 00700 57663 55772 200	
31	.87685 26476 01343 48877 02743 840	
32	.87691 03113 44627 20122 69225 639	
33	.87696 79674 32584 86614 18436 164	
34	.87702 56158 67248 82600 69119 572	
7535	.87708 32566 50650 61409 93877 036	(439)
36	.87714 08897 84820 95491 14646 121	
37	.87719 85152 71789 76457 95330 364	
38	.87725 61331 13586 15131 31581 357	
39	.87731 37433 12238 41582 37735 563	
7540	.87737 13458 69774 05175 30908 156	(45,259)
41	.87742 89407 88219 74610 12246 142	
42	.87748 65280 69601 37965 45343 006	
43	.87754 41077 15944 02741 31817 164	
44	.87760 16797 29271 95901 84056 464	
7545	.87765 92441 11608 63917 95130 988	(440)
46	.87771 68008 64976 72810 05876 417	
47	.87777 43499 91398 08190 69150 199	
48	.87783 18914 92893 75307 11262 766	(474)
49	.87788 94253 71483 99083 90586 063	

N	logarithm	ref
7550	.87794 69516 29188 24165 53341 606	
51	.87800 44702 68025 14958 86570 334	
52	.87806 19812 90012 55675 68286 476	
53	.87811 94846 97167 50375 14817 686	
54	.87817 69804 91506 23006 25333 666	
7555	.87823 44686 75044 17450 23565 524	
56	.87829 19492 49795 97562 96718 086	
57	.87834 94222 17775 47217 31577 400	
58	.87840 68875 80995 70345 47815 650	
59	.87846 43453 41468 90981 28495 712	(475)
7560	.87852 17955 01206 53302 47777 578	
61	.87857 92380 62219 21672 95828 851	(102,258)
62	.87863 66730 26516 80685 00941 549	
63	.87869 41003 96108 35201 48857 429	
64	.87875 15201 73002 10397 99304 033	
7565	.87880 89323 59205 51804 99743 693	
66	.87886 63369 56725 25349 96337 676	
67	.87892 37339 67567 17399 42127 703	
68	.87898 11233 93736 34801 02437 034	
69	.87903 85052 37237 04925 57493 324	
7570	.87909 58795 00072 75709 02275 463	
71	.87915 32461 84246 15694 43586 578	
72	.87921 06052 91759 14073 94355 427	
73	.87926 79568 24612 80730 65168 345	(475)
74	.87932 53007 84807 46280 53033 972	

N	logarithm	ref
7575	.87938 26371 74342 62114 27382 920	(478)
76	.87943 99659 95217 00439 13304 601	
77	.87949 72872 49428 54320 72023 379	
78	.87955 46009 38974 37724 78616 247	
79	.87961 19070 65850 85558 96974 208	
7580	.87966 92056 32053 53714 52009 542	(478)
81	.87972 64966 39577 19107 99111 134	
82	.87978 37800 90415 79722 90850 053	
83	.87984 10559 86562 54651 40937 548	
84	.87989 83243 30009 84135 85437 634	
7585	.87995 55851 22749 29610 41236 448	(479)
86	.88001 28383 66771 73742 61770 539	
87	.88007 00840 64067 20474 90016 260	
88	.88012 73222 16624 95066 08742 429	
89	.88018 45528 26433 44132 88028 423	
7590	.88024 17758 95480 35691 30049 867	(274)
91	.88029 89914 25752 59198 11134 080	
92	.88035 61994 19236 25592 21087 426	
93	.88041 33998 77916 67335 99796 740	
94	.88047 05928 03778 38456 71106 977	
7595	.88052 77781 98805 14587 73977 226	
96	.88058 49560 64979 93009 90917 259	
97	.88064 21264 04284 92692 73706 745	
98	.88069 92892 18701 54335 66399 284	
99	.88075 64445 10210 40409 25613 402	

N	logarithm	ref
7600	.88081 35922 80791 35196 38112 652	(479)
01	.88087 07325 32423 44833 35676 956	
02	.88092 78652 67084 97351 07267 330	
03	.88098 49904 86753 42716 08486 130	
04	.88104 21081 93405 52871 68334 944	
7605	.88109 92183 89017 21778 93272 277	(476)
06	.88115 63210 75563 65457 68573 139	
07	.88121 34162 55019 22027 56992 689	
08	.88127 05039 29357 51748 94736 038	
09	.88132 75841 00551 37063 84736 349	
7610	.88138 46567 70572 82636 87243 356	
11	.88144 17219 41393 15396 07724 410	
12	.88149 87796 14982 84573 82080 195	
13	.88155 58297 93311 61747 59177 196	
14	.88161 28724 78348 40880 80699 072	
7615	.88166 99076 72061 38363 58319 013	
16	.88172 69353 76417 93053 48195 213	
17	.88178 39555 93384 66316 22791 560	
18	.88184 09683 24927 42066 40025 653	
19	.88189 79735 73011 26808 09746 239	
7620	.88195 49713 39600 49675 57542 198	(480)
21	.88201 19616 26658 62473 85885 148	
22	.88206 89444 36148 39719 32607 788	
23	.88212 59197 70031 78680 26720 076	
24	.88218 28876 30269 99417 41565 319	

(38)

N	logarithm	ref
7625	.88223 98480 18823 44824 45318 296	
26	.88229 68009 37651 80668 48827 481	
27	.88235 37463 88713 95630 50803 468	
28	.88241 06843 73968 01345 80355 687	
29	.88246 76148 95371 32444 36879 484	
7630	.88252 45379 54880 46591 27295 662	
31	.88258 14535 54451 24527 00644 565	
32	.88263 83616 96038 70107 80036 770	
33	.88269 52623 81597 10345 91962 481	
34	.88275 21556 13079 95449 92961 692	
7635	.88280 90413 92439 98864 93657 201	
36	.88286 59197 21629 17312 80152 537	
37	.88292 27906 02598 70832 32796 879	
38	.88297 96540 37299 02819 42319 030	
39	.88303 65100 27679 80067 23332 516	(480)
7640	.88309 33585 75689 92806 25213 877	
41	.88315 01996 83277 54744 40356 203	
42	.88320 70333 52390 03107 09799 987	
43	.88326 38595 84973 98677 26243 347	(262)
44	.88332 06783 82975 25835 34433 678	
7645	.88337 74897 48338 92599 28942 788	
46	.88343 42936 83009 30664 49327 569	
47	.88349 10901 88929 95443 72678 258	
48	.88354 78792 68043 66107 03556 338	
49	.88360 46609 22292 45621 61324 119	(480)

N	logarithm	ref
7650	.88366 14351 53617 60791 64868 061	
51	.88371 82019 63959 62298 14717 862	
52	.88377 49613 55258 24738 72563 372	
53	.88383 17133 29452 46667 38171 358	
54	.88388 84578 88480 50634 23704 177	
7655	.88394 51950 34279 83225 25442 366	
56	.88400 19247 68787 15101 92913 216	
57	.88405 86470 93938 41040 95427 338	
58	.88411 53620 11668 79973 86025 259	
59	.88417 20695 23912 75026 62836 083	
7660	.88422 87696 32603 93559 27850 242	
61	.88428 54623 39675 27205 43108 354	
62	.88434 21476 47058 91911 84308 219	
63	.88439 88255 56686 27977 91831 981	
64	.88445 54960 70488 00095 19195 459	
7665	.88451 21591 90393 97386 78921 676	
66	.88456 88149 18333 33446 85840 609	
67	.88462 54632 56234 46379 97817 155	
68	.88468 21042 06024 98840 53909 342	
69	.88473 87377 69631 78072 09958 789	(430)
7670	.88479 53639 48980 95946 71615 425	
71	.88485 19827 45997 89004 24798 471	
72	.88490 85941 62607 18491 63595 699	
73	.88496 51982 00732 70402 15602 959	(480)
74	.88502 17948 62297 55514 64705 984	

N	logarithm	ref
7675	.88507 83841 49224 09432 71306 471	
76	.88513 49660 63433 92623 89994 434	
77	.88519 15406 06847 90458 84668 828	
78	.88524 81077 81386 13250 41108 431	
79	.88530 46675 88967 96292 76994 991	
7680	.88536 12200 31511 99900 49390 611	
81	.88541 77651 10936 09447 59671 369	(376)
82	.88547 43028 29157 35406 55919 169	
83	.88553 08331 88092 13387 32773 789	
84	.88558 73561 89656 04176 28747 124	
7685	.88564 38718 35763 93775 21001 599	
86	.88570 03801 28329 93440 17594 736	
87	.88575 68810 69267 39720 47191 849	(476)
88	.88581 33746 60488 94497 46248 844	
89	.88586 98609 03906 45023 43667 100	
7690	.88592 63398 01431 03960 42922 400	
91	.88598 28113 54973 09419 01669 890	(481)
92	.88603 92755 66442 24997 08827 023	
93	.88609 57324 37747 39818 59136 471	
94	.88615 21819 70796 68572 25210 949	
7695	.88620 86241 67497 51550 27061 941	
96	.88626 50590 29756 54686 99114 264	
97	.88632 14865 59479 69597 54708 450	
98	.88637 79067 58572 13616 48092 890	
99	.88643 43196 28938 29836 33907 706	(481)

N	logarithm	ref
7700	.88649 07251 72481 87146 24162 298	(476)
01	.88654 71233 91105 80270 42708 529	
02	.88660 35142 86712 29806 77211 485	
03	.88665 98978 61202 82265 28619 775	
04	.88671 62741 16478 10106 58137 301	
7705	.88677 26430 54438 11780 31698 468	
06	.88682 90046 76982 11763 61948 743	
07	.88688 53589 86008 60599 47732 549	
08	.88694 17059 83415 34935 11090 389	
09	.88699 80456 71099 37560 31767 178	
7710	.88705 43780 50956 97445 79233 692	
11	.88711 07031 24883 69781 42223 085	
12	.88716 70208 94774 36014 55784 401	
13	.88722 33313 62523 03888 25855 012	
14	.88727 96345 30023 07479 51353 920	
7715	.88733 59303 99167 07237 43797 837	(481)
16	.88739 22189 71846 90021 44441 982	
17	.88744 85002 49953 69139 38947 516	
18	.88750 47742 35377 84385 69577 538	
19	.88756 10409 30009 02079 44923 554	
7720	.88761 73003 35736 15102 47164 358	(482)
21	.88767 35524 54447 42937 36859 224	
22	.88772 97972 88030 31705 55277 337	
23	.88778 60348 38371 54205 24265 365	
24	.88784 22651 07357 09949 43655 104	

N	logarithm	ref
7725	.88789 84880 96872 25203 86213 084	(482)
26	.88795 47038 08801 53024 90134 061	
27	.88801 09122 45028 73297 49080 296	
28	.88806 71134 07436 92772 99768 530	
29	.88812 33072 97908 45107 07106 552	
7730	.88817 94939 18324 90897 46881 272	
31	.88823 56732 70567 17721 86000 188	
32	.88829 18453 56515 40175 60288 158	
33	.88834 80101 78048 99909 49841 365	
34	.88840 41677 37046 65667 51940 372	
7735	.88846 03180 35386 33324 51524 161	
36	.88851 64610 74945 25923 89227 054	
37	.88857 25968 57599 93715 26980 390	
38	.88862 87253 85226 14192 11180 868	
39	.88868 48466 59698 92129 33427 426	
7740	.88874 09606 82892 59620 88828 545	(483)
41	.88879 70674 56680 76117 31881 862	
42	.88885 31669 82936 28463 29927 984	
43	.88890 92592 63531 30935 14180 359	
44	.88896 53443 00337 25278 28333 108	
7745	.88902 14220 95224 80744 74748 675	
46	.88907 74926 50063 94130 58227 182	
47	.88913 35559 66723 89813 27359 356	
48	.88918 96120 47073 19789 13464 900	
49	.88924 56608 92979 63710 67118 183	

N	logarithm	ref
7750	.88930 17025 06310 28923 92263 107	
51	.88935 77368 88931 50505 77919 024	
52	.88941 37640 42708 91301 27479 575	
53	.88946 97839 69507 41960 85606 291	(484)
54	.88952 57966 71191 20977 62718 844	
7755	.88958 18021 49623 74724 57083 792	
56	.88963 78004 06667 77491 74503 676	
57	.88969 37914 44185 31523 45608 334	(376)
58	.88974 97752 64037 67055 40750 274	
59	.88980 57518 68085 42351 82505 977	(477)
7760	.88986 17212 58188 43742 55784 958	
61	.88991 76834 36205 85660 15548 456	
62	.88997 36384 03996 10676 92139 586	
63	.89002 95861 63416 89541 94226 808	
64	.89008 55267 16325 21218 09362 555	
7765	.89014 14600 64577 32919 02158 858	
66	.89019 73862 10028 80146 10081 819	
67	.89025 33051 54534 46725 36866 763	
68	.89030 92168 99948 44844 43555 907	
69	.89036 51214 48124 15089 37160 395	
7770	.89042 10188 00914 26481 56948 514	
71	.89047 69089 60170 76514 58361 935	
72	.89053 27919 27744 91190 94561 816	
73	.89058 86677 05487 25058 95606 584	
74	.89064 45362 95247 61249 45263 229	

N	logarithm	ref
7775	.89070 03976 98875 11512 55453 938	
76	.89075 62519 18218 16254 38339 899	
77	.89081 20989 55124 44573 76044 081	
78	.89086 79388 11440 94298 88014 829	
79	.89092 37714 89013 92023 96032 087	
7780	.89097 95969 89688 93145 86858 065	
81	.89103 54153 15310 81900 72534 168	
82	.89109 12264 67723 71400 48326 008	
83	.89114 70304 48771 03669 48318 296	
84	.89120 28272 60295 49680 98661 451	
7785	.89125 86169 04139 09393 68471 705	
86	.89131 43993 82143 11788 18386 546	
87	.89137 01746 96148 14903 46777 270	
88	.89142 59428 47994 05873 33620 485	
89	.89148 17038 39520 00962 82030 331	(366)
7790	.89153 74576 72564 45604 57453 257	
91	.89159 32043 48965 14435 24527 121	
92	.89164 89438 70559 11331 81606 433	
93	.89170 46762 39182 69447 92955 537	(483)
94	.89176 04014 56671 51250 18611 509	
7795	.89181 61195 24860 48554 41918 592	
96	.89187 18304 45583 82561 94735 933	
97	.89192 75342 20675 03895 80320 441	
98	.89198 32308 51966 92636 93886 522	
99	.89203 89203 41291 58360 40844 510	

N	logarithm	ref
7800	.89209 46026 90480 40171 52719 559	
01	.89215 02779 01364 06742 00752 788	
02	.89220 59459 75772 56346 07186 462	
03	.89226 16069 15535 16896 54234 984	
04	.89231 72607 22480 45980 90743 489	
7805	.89237 29073 98436 30897 36535 801	
06	.89242 85469 45229 88690 84453 549	
07	.89248 41793 64687 66189 00088 195	
08	.89253 98046 58635 40038 19207 768	
09	.89259 54228 28898 16739 42880 061	
7810	.89265 10338 77300 32684 30294 063	
11	.89270 66378 05665 54190 89281 399	
12	.89276 22346 15816 77539 64539 547	
13	.89281 78243 09576 29009 23558 579	
14	.89287 34068 88765 64912 40253 220	
7815	.89292 89823 55205 71631 76301 951	
16	.89298 45507 10716 65655 60194 952	
17	.89304 01119 57117 93613 63992 613	(477)
18	.89309 56660 96228 32312 77796 392	
19	.89315 12131 29865 88772 81933 763	
7820	.89320 67530 59848 00262 16859 013	
21	.89326 22858 87991 34333 50771 642	
22	.89331 78116 16111 88859 44954 112	
23	.89337 33302 46024 92068 16830 697	(477)
24	.89342 88417 79545 02579 00749 181	

(39)

N	logarithm	ref	
7825	.89348 43462 18486 09438 06487 154	(483)	
26	.89353 98435 64661 32153 75484 645		
27	.89359 53338 19883 20732 34804 835		
28	.89365 08169 85963 55713 48824 598		
29	.89370 62930 64713 48205 68656 605		
7830	.89376 17620 57943 39921 79304 727		
31	.89381 72239 67463 03214 44554 482		
32	.89387 26787 95081 41111 49600 251		
33	.89392 81265 42606 87351 41411 005		
34	.89398 35672 11847 06418 66836 274		
7835	.89403 90008 04608 93579 08454 081		
36	.89409 44273 22698 74915 18162 582		
37	.89414 98467 67922 07361 48517 128		
38	.89420 52591 42083 78739 81814 487		
39	.89426 06644 46988 07794 56925 937		
7840	.89431 60626 84438 44227 93880 961		(484)
41	.89437 14538 56237 68735 16203 270		
42	.89442 68379 64187 93039 71000 860		
43	.89448 22150 10090 59928 46811 836		
44	.89453 75849 95746 43286 89207 706		
7845	.89459 29479 22955 48134 14155 874		
46	.89464 83037 93517 10658 19143 035		
47	.89470 36526 09229 98250 92061 189		
48	.89475 89943 71892 09543 17857 983		
49	.89481 43290 83300 74439 82953 094		

N	logarithm	ref
7850	.89486 96567 45252 54154 77422 352	(484)
51	.89492 49773 59543 41245 94951 320	
52	.89498 02909 27968 59650 30560 027	
53	.89503 55974 52322 64718 76100 561	
54	.89509 08969 34399 43251 13529 221	
7855	.89514 61893 75992 13531 05954 934	
56	.89520 14747 78893 25360 86465 624	
57	.89525 67531 44894 60096 44734 247	
58	.89531 20244 75787 30682 11406 165	
59	.89536 72887 73361 81685 40269 578	
7860	.89542 25460 39407 89331 88210 687	
61	.89547 77962 75714 61539 92955 283	
62	.89553 30394 84070 37955 48598 464	
63	.89558 82756 66262 89986 78924 149	
64	.89564 35048 24079 20839 08516 089	
7865	.89569 87269 59305 65549 31662 057	(485)
66	.89575 39420 73727 91020 79052 892	
67	.89580 91501 69130 96057 82278 096	
68	.89586 43512 47299 11400 36119 643	
69	.89591 95453 10015 99758 58645 702	
7870	.89597 47323 59064 55847 49105 931	(478)
71	.89602 99123 96227 06421 43630 028	
72	.89608 50854 23285 10308 68731 216	
73	.89614 02514 42019 58445 92616 328	
74	.89619 54104 54210 73912 74304 167	

N	logarithm	ref
7875	.89625 05624 61638 11966 10553 809	
76	.89630 57074 66080 60074 80604 525	
77	.89636 08454 69316 37953 88728 971	(457)
78	.89641 59764 73122 97599 04601 341	
79	.89647 11004 79277 23321 01482 112	(485)
7880	.89652 62174 89555 31779 92221 072	
81	.89658 13275 05732 72019 63080 278	
82	.89663 64305 29584 25502 05378 611	
83	.89669 15265 62884 06141 44959 572	(485)
84	.89674 66156 07405 60338 69483 997	
7885	.89680 16976 64921 67015 53549 331	
86	.89685 67727 37204 37648 81637 114	
87	.89691 18408 26025 16304 68890 346	
88	.89696 69019 33154 79672 79722 362	
89	.89702 19560 60363 37100 44258 880	
7890	.89707 70032 09420 30626 72614 871	
91	.89713 20433 82094 35016 67007 884	
92	.89718 70765 80153 57795 31709 485	
93	.89724 21028 05365 39281 80836 446	
94	.89729 71220 59496 52623 43983 330	
7895	.89735 21343 44313 03829 69698 109	
96	.89740 71396 61580 31806 26802 455	
97	.89746 21380 13063 08389 03558 343	
98	.89751 71294 00525 38378 04682 604	
99	.89757 21138 25730 59571 46211 058	

N	logarithm	ref
7900	.89762 70912 90441 42799 48213 865	(28,258)
01	.89768 20617 96419 91958 25363 717	
02	.89773 70253 45427 44043 75358 518	
03	.89779 19819 39224 69185 65200 168	
04	.89784 69315 79571 70681 15331 073	
7905	.89790 18742 68227 85028 81630 030	(482)
06	.89795 68100 06951 81962 35269 085	
07	.89801 17387 97501 64484 40433 009	
08	.89806 66606 41634 68900 29902 998	
09	.89812 15755 41107 64851 78506 226	
7910	.89817 64834 97676 55350 74432 872	
11	.89823 13845 13096 76812 88422 224	
12	.89828 62785 89122 99091 40819 497	
13	.89834 11657 27509 25510 66504 963	
14	.89839 60459 30008 92899 77697 016	
7915	.89845 09191 98374 71626 24630 775	(486)
16	.89850 57855 34358 65629 54113 842	
17	.89856 06449 39712 12454 65960 828	
18	.89861 54974 16185 83285 67308 237	
19	.89867 03429 65529 82979 24811 341	
7920	.89872 51815 89493 50098 14724 619	
21	.89878 00132 89825 56944 70867 394	
22	.89883 48380 68274 09594 30476 245	
23	.89888 96559 26586 47928 77945 813	
24	.89894 44668 66509 45669 86459 586	

N	logarithm	ref
7925	.89899 92708 89789 10412 57512 269	(487)
26	.89905 40679 98170 83658 58325 335	
27	.89910 88581 93399 40849 57157 342	
28	.89916 36414 77218 91400 56510 630	
29	.89921 84178 51372 78733 24235 960	
7930	.89927 31873 17603 80309 22536 717	(486)
31	.89932 79498 77654 07663 34874 244	
32	.89938 27055 33265 06436 90775 904	
33	.89943 74542 86177 56410 88547 453	
34	.89949 21961 38131 71539 15891 314	
7935	.89954 69310 90866 99981 68432 330	(487)
36	.89960 16591 46122 24137 66152 579	
37	.89965 63803 05635 60678 67736 834	
38	.89971 10945 71144 60581 82830 249	
39	.89976 58019 44386 09162 82209 841	
7940	.89982 05024 27096 26109 05871 354	
41	.89987 51960 21010 65512 69033 075	
42	.89992 98827 27864 15903 66058 175	
43	.89998 45625 49391 00282 72297 153	
44	.90003 92354 87324 76154 43851 948	
7945	.90009 39015 43398 35560 15263 286	(374)
46	.90014 85607 19344 05110 95122 848	
47	.90020 32130 16893 46020 59611 798	
48	.90025 78584 37777 54138 43967 264	
49	.90031 24969 83726 59982 31878 312	

N	logarithm	ref
7950	.90036 71286 56470 28771 42813 002	(486)
51	.90042 17534 57737 60459 17278 055	
52	.90047 63713 89256 89766 00012 725	
53	.90053 09824 52755 86212 21118 410	
54	.90058 55866 49961 54150 75125 564	
7955	.90064 01839 82600 32799 97999 480	(486)
56	.90069 47744 52397 96276 42086 482	
57	.90074 93580 61079 53627 49002 081	
58	.90080 39348 10369 48864 20462 657	
59	.90085 85047 01991 60993 87062 213	
7960	.90091 30677 37669 04052 74995 739	(326)
61	.90096 76239 19124 27138 70730 751	
62	.90102 21732 48079 14443 83628 544	
63	.90107 67157 26254 85287 06516 693	
64	.90113 12513 55371 94146 74214 371	
7965	.90118 57801 37150 30693 20011 996	(326)
66	.90124 03020 73309 19821 30106 773	
67	.90129 48171 65567 21682 95995 660	
68	.90134 93254 15642 31719 64827 289	
69	.90140 38268 25251 80694 87714 394	
7970	.90145 83213 96112 34726 66008 272	(326)
71	.90151 28091 29939 95319 95536 813	
72	.90156 72900 28449 99399 08807 629	
73	.90162 17640 93357 19340 15177 821	
74	.90167 62313 26375 63003 38991 909	

N	logarithm	ref
7975	.90173 06917 29218 73765 55689 448	
76	.90178 51453 03599 30552 25883 870	
77	.90183 95920 51229 47870 27414 072	
78	.90189 40319 73820 75839 85370 270	
79	.90194 84650 73084 00227 00095 647	
7980	.90200 28913 50729 42475 73165 323	
81	.90205 73108 08466 59740 31344 155	
82	.90211 17234 48004 44917 48524 892	
83	.90216 61292 71051 26678 65648 214	
84	.90222 05282 79314 69502 08606 149	
7985	.90227 49204 74501 73705 04130 405	
86	.90232 93058 58318 75475 93667 117	
87	.90238 36844 32471 46906 45239 531	
88	.90243 80561 98664 96023 63300 129	
89	.90249 24211 58603 66821 96573 711	
7990	.90254 67793 13991 39295 43892 938	
91	.90260 11306 66531 29469 58027 845	
92	.90265 54752 17925 89433 47510 835	
93	.90270 98129 69877 07371 76458 651	(487)
94	.90276 41439 24086 07596 62392 833	
7995	.90281 84680 82253 50579 72060 164	
96	.90287 27854 46079 32984 15254 602	
97	.90292 70960 17262 87696 36642 199	
98	.90298 13997 97502 83858 05590 513	
99	.90303 56967 88497 26898 04003 992	

N	logarithm	ref
8000	.90308 99869 91943 58564 12166 842	
01	.90314 42704 09538 56954 92594 869	
02	.90319 85470 42978 36551 71897 786	
03	.90325 28168 93958 48250 20653 470	
04	.90330 70799 64173 79392 31295 679	
8005	.90336 13362 55318 53797 94016 698	
06	.90341 55857 69086 31796 70686 409	
07	.90346 98285 07170 10259 66789 275	
08	.90352 40644 71262 22631 01380 720	
09	.90357 82936 63054 38959 75064 387	(488)
8010	.90363 25160 84237 65931 35991 762	
11	.90368 67317 36502 46899 43885 638	(488)
12	.90374 09406 21538 61917 32088 906	
13	.90379 51427 41035 27769 67640 144	
14	.90384 93380 96680 98004 09377 496	
8015	.90390 35266 90163 62962 64072 294	
16	.90395 77085 23170 49813 40593 921	
17	.90401 18835 97388 22582 02107 373	(489)
18	.90406 60519 14502 82183 16305 004	
19	.90412 02134 76199 66452 03673 908	
8020	.90417 43682 84163 50175 83800 429	
21	.90422 85163 40078 45125 19713 252	
22	.90428 26576 45628 00085 60266 548	
23	.90433 67922 02495 00888 80564 636	
24	.90439 09200 12361 70444 20429 630	

(40)

N	logarithm	ref
8025	.90444 50410 76909 68770 20913 533	
26	.90449 91553 97819 93025 58856 236	
27	.90455 32629 76772 77540 79490 894	
28	.90460 73638 15447 93849 27098 122	
29	.90466 14579 15524 50718 73710 483	
8030	.90471 55452 78680 94182 45868 717	
31	.90476 96259 06595 07570 49431 176	
32	.90482 36998 00944 11540 92437 903	
33	.90487 77669 63404 64111 06030 826	
34	.90493 18273 95652 60688 63431 505	
8035	.90498 58810 99363 34102 96977 896	
36	.90503 99280 76211 54636 13221 566	
37	.90509 39683 27871 30054 06086 817	
38	.90514 80018 56016 05637 68093 167	
39	.90520 20286 62318 64213 99642 627	(489)
8040	.90525 60487 48451 26187 16373 219	
41	.90531 00621 16085 49569 54580 188	
42	.90536 40687 66892 30012 74706 333	
43	.90541 80687 02542 00838 62902 913	
44	.90547 20619 24704 33070 30662 561	
8045	.90552 60484 35048 35463 12525 637	
46	.90558 00282 35242 54535 61861 471	
47	.90563 40013 26954 74600 44725 923	
48	.90568 79677 11852 17795 31796 692	
49	.90574 19273 91601 44113 88387 810	

N	logarithm	ref
8050	.90579 58803 67868 51436 62544 761	(488)
51	.90584 98266 42318 75561 71221 637	
52	.90590 37662 16616 90235 84541 777	
53	.90595 76990 92427 07185 08143 311	
54	.90601 16252 71412 76145 63611 034	
8055	.90606 55447 55236 84894 66996 036	(489)
56	.90611 94575 45561 59281 05424 516	
57	.90617 33636 44048 63256 11797 201	
58	.90622 72630 52358 98904 37580 788	
59	.90628 11557 72153 06474 23692 837	
8060	.90633 50418 05090 64408 69481 528	
61	.90638 89211 52830 89375 99801 700	
62	.90644 27938 17032 36300 30188 600	
63	.90649 66597 99352 98392 30130 738	
64	.90655 05191 01450 07179 84443 282	
8065	.90660 43717 24980 32538 52743 393	(487)
66	.90665 82176 71599 82722 27028 919	
67	.90671 20569 42964 04393 87361 856	
68	.90676 58895 40727 82655 55657 984	
69	.90681 97154 66545 41079 47584 092	
8070	.90687 35347 22070 41738 22564 191	
71	.90692 73473 08955 85235 31896 129	
72	.90698 11532 28854 10735 64980 007	
73	.90703 49524 83416 95995 93659 800	
74	.90708 87450 74295 57395 14679 590	

N	logarithm	ref
8075	.90714 25310 03140 49964 90255 806	
76	.90719 63102 71601 67419 86766 875	
77	.90725 00828 81328 42188 11561 677	
78	.90730 38488 33969 45441 47888 209	
79	.90735 76081 31172 87125 87943 851	
8080	.90741 13607 74586 15991 64048 624	
81	.90746 51067 65856 19623 77942 843	(490)
82	.90751 88461 06629 24472 28210 550	
83	.90757 25787 98550 95882 35830 116	
84	.90762 63048 43266 38124 67853 421	
8085	.90768 00242 42419 94425 59214 970	
86	.90773 37369 97655 46997 32672 359	
87	.90778 74431 10616 17068 16879 472	(490)
88	.90784 11425 82944 64912 62593 776	
89	.90789 48354 16282 89881 57019 130	(492)
8090	.90794 85216 12272 30432 36285 459	
91	.90800 22011 72553 64158 96066 696	
92	.90805 58740 98767 07822 00338 367	
93	.90810 95403 92552 17378 88276 192	(490)
94	.90816 32000 55547 88013 79297 088	
8095	.90821 68530 89392 54167 76243 948	
96	.90827 04994 95723 89568 66715 571	
97	.90832 41392 76179 07261 22543 120	
98	.90837 77724 32394 59636 97414 474	
99	.90843 13989 66006 38464 22647 862	

N	logarithm	ref
8100	.90848 50188 78649 74918 01116 130	(395)
01	.90853 86321 71959 39609 99323 025	
02	.90859 22388 47569 42618 37632 861	
03	.90864 58389 07113 33517 78654 933	
04	.90869 94323 52224 01409 13784 042	
8105	.90875 30191 84533 74949 47898 511	
06	.90880 65994 05674 22381 82217 029	
07	.90886 01730 17276 51564 95315 717	
08	.90891 37400 20971 10003 22306 752	
09	.90896 73004 18387 84876 32179 925	
8110	.90902 08542 11156 03069 03308 483	(51,258)
11	.90907 44014 00904 31200 97120 623	
12	.90912 79419 89260 75656 29937 980	
13	.90918 14759 77852 82613 42982 481	
14	.90923 50033 68307 38074 70552 907	
8115	.90928 85241 62250 67896 06372 524	(493)
16	.90934 20383 61308 37816 68109 134	
17	.90939 55459 67105 53488 60068 887	
18	.90944 90469 81266 60506 34065 224	
19	.90950 25414 05415 44436 48464 282	
8120	.90955 60292 41175 30847 25408 110	(493)
21	.90960 95104 90168 85338 06217 056	
22	.90966 29851 54018 13569 04972 655	
23	.90971 64532 34344 61290 60282 371	
24	.90976 99147 32769 14372 85227 530	

N	logarithm	ref
8125	.90982 33696 50911 98835 15495 790	
26	.90987 68179 90392 80875 55699 492	
27	.90993 02597 52830 66900 23881 216	
28	.90998 36949 39844 03552 94207 902	
29	.91003 71235 53050 77744 37854 855	
8130	.91009 05455 94068 16681 62080 981	
31	.91014 39610 64512 87897 47496 582	
32	.91019 73699 66000 99279 83525 047	
33	.91025 07723 00147 99101 02059 772	
34	.91030 41680 68568 76047 09317 639	
8135	.91035 75572 72877 59247 15890 387	
36	.91041 09399 14688 18302 64995 193	
37	.91046 43159 95613 63316 58925 811	
38	.91051 76855 17266 44922 83705 575	
39	.91057 10484 81258 54315 31943 610	
8140	.91062 44048 89201 23277 23895 555	
41	.91067 77547 42705 24210 26730 144	
42	.91073 10980 43380 70163 72002 948	
43	.91078 44347 92837 14863 71338 613	
44	.91083 77649 92683 52742 30322 905	
8145	.91089 10886 44528 18966 60605 882	
46	.91094 44057 49978 89467 90217 519	
47	.91099 77163 10642 80970 72097 090	(493)
48	.91105 10203 28126 51021 90837 630	
49	.91110 43178 04035 98019 67646 792	

N	logarithm	ref
8150	.91115 76087 39976 61242 63525 412	
51	.91121 08931 37553 20878 80665 082	
52	.91126 41709 98369 98054 62066 065	
53	.91131 74423 24030 54863 89376 840	
54	.91137 07071 16137 94396 78956 598	
8155	.91142 39653 76294 60768 76161 993	
56	.91147 72171 06102 39149 47859 453	
57	.91153 04623 07162 55791 73164 356	
58	.91158 37009 81075 78060 32408 384	
59	.91163 69331 29442 14460 94336 344	
8160	.91169 01587 53861 14669 01533 765	
61	.91174 33778 55931 69558 54086 577	(319)
62	.91179 65904 37252 11230 91474 162	
63	.91184 97964 99420 13043 72697 081	
64	.91190 29960 44032 89639 54640 773	
8165	.91195 61890 72686 96974 68676 526	
66	.91200 93755 86978 32347 95501 006	
67	.91206 25555 88502 34429 38215 651	(408)
68	.91211 57290 78853 83288 93647 211	
69	.91216 88960 59627 00425 21910 736	
8170	.91222 20565 32415 48794 14216 290	
71	.91227 52104 98812 32837 58920 700	(493)
72	.91232 83579 60409 98512 05825 607	
73	.91238 14989 18800 33317 28723 125	
74	.91243 46333 75574 66324 86190 377	

N	logarithm	ref
8175	.91248 77613 32323 68206 80634 214	(491)
76	.91254 08827 90637 51264 15587 380	
77	.91259 39977 52105 69455 51257 418	
78	.91264 71062 18317 18425 58329 604	
79	.91270 02081 90860 35533 70025 171	
8180	.91275 33036 71322 99882 32416 125	
81	.91280 63926 61292 32345 52997 912	
82	.91285 94751 62354 95597 47521 235	
83	.91291 25511 76096 94140 85084 271	
84	.91296 56207 04103 74335 31486 588	
8185	.91301 86837 47960 24425 90846 023	
86	.91307 17403 09250 74571 45479 799	
87	.91312 47903 89558 96872 94051 147	
88	.91317 78339 90468 05401 87982 714	
89	.91323 08711 13560 56228 66138 019	
8190	.91328 39017 60418 47450 87772 230	(316)
91	.91333 69259 32623 19221 63753 526	
92	.91338 99436 31755 53777 86056 314	
93	.91344 29548 59395 75468 55527 570	
94	.91349 59596 17123 50783 07927 555	
8195	.91354 89579 06517 88379 38246 191	
96	.91360 19497 29157 39112 23296 337	
97	.91365 49350 86619 96061 42585 240	
98	.91370 79139 80482 94559 97465 420	
99	.91376 08864 12323 12222 28566 243	

N	logarithm	ref
8200	.91381 38523 83716 68972 31507 447	
01	.91386 68118 96239 27071 70895 869	
02	.91391 97649 51465 91147 92606 636	
03	.91397 27115 50971 08222 34350 079	
04	.91402 56516 96328 67738 34525 606	
8205	.91407 85853 89112 01589 39363 811	
06	.91413 15126 30893 84147 08358 047	
07	.91418 44334 23246 32289 17986 735	
08	.91423 73477 67741 05427 63727 644	
09	.91429 02556 65949 05536 60365 391	(411)
8210	.91434 31571 19440 77180 40593 417	
11	.91439 60521 29786 07541 51911 684	
12	.91444 89406 98554 26448 51821 327	
13	.91450 18228 27314 06404 01317 515	
14	.91455 46985 17633 62612 56681 771	
8215	.91460 75677 71080 53008 59574 970	
16	.91466 04305 89221 78284 25432 286	
17	.91471 32869 73623 81917 30161 298	
18	.91476 61369 25852 50198 95144 519	
19	.91481 89804 47473 12261 70547 572	(371)
8220	.91487 18175 40050 40107 16934 251	
21	.91492 46482 05148 48633 85189 707	(380)
22	.91497 74724 44330 95664 94752 992	
23	.91503 02902 59160 81976 10160 194	
24	.91508 31016 51200 51323 15899 395	

(41)

N	logarithm	ref
8225	.91513 59066 22011 90469 89578 686	
26	.91518 87051 73156 29215 73408 465	
27	.91524 14973 06194 40423 43999 254	
28	.91529 42830 22686 40046 80476 263	
29	.91534 70623 24191 87158 30911 911	
8230	.91539 98352 12269 83976 77077 566	
31	.91545 26016 88478 75894 97515 688	(312,491)
32	.91550 53617 54376 51507 28933 632	
33	.91555 81154 11520 42637 25920 317	(305)
34	.91561 08626 61467 24365 18986 987	
8235	.91566 36035 05773 15055 70933 288	
36	.91571 63379 45993 76385 31539 875	
37	.91576 90659 83684 13369 90588 776	(497)
38	.91582 17876 20398 74392 29212 728	
39	.91587 45028 57691 51229 69574 693	
8240	.91592 72116 97115 79081 22878 788	
41	.91597 99141 40224 36595 35713 824	
42	.91603 26101 88569 45897 34730 690	
43	.91608 52998 43702 72616 69654 768	(385)
44	.91613 79831 07175 25914 54634 615	
8245	.91619 06599 80537 58511 07928 113	
46	.91624 33304 65339 66712 89927 292	
47	.91629 59945 63130 90440 39523 045	
48	.91634 86522 75460 13255 08810 932	
49	.91640 13036 03875 62386 96139 291	

N	logarithm	ref
8250	.91645 39485 49925 08761 77500 850	
51	.91650 65871 15155 67028 36269 058	
52	.91655 92193 01113 95585 91280 319	
53	.91661 18451 09345 96611 23263 358	
54	.91666 44645 41397 16085 99616 897	
8255	.91671 70775 98812 43823 97536 850	
56	.91676 96842 83136 13498 25494 248	
57	.91682 22845 95912 02668 43065 067	
58	.91687 48785 38683 32807 79113 181	
59	.91692 74661 12992 69330 48327 628	
8260	.91698 00473 20382 21618 66115 379	
61	.91703 26221 62393 43049 61850 805	
62	.91708 51906 40567 31022 90483 053	
63	.91713 77527 56444 26987 42502 496	(498)
64	.91719 03085 11564 16468 52267 469	
8265	.91724 28579 07466 29095 04692 473	
66	.91729 54009 45689 38626 40299 037	
67	.91734 79376 27771 62979 58630 435	
68	.91740 04679 55250 64256 20031 423	
69	.91745 29919 29663 48769 45794 213	(494)
8270	.91750 55095 52546 67071 16671 845	
71	.91755 80208 25436 13978 69760 151	
72	.91761 05257 49867 28601 93749 496	
73	.91766 30243 27374 94370 22547 474	(491)
74	.91771 55165 59493 39059 27273 743	

N	logarithm	ref
8275	.91776 80024 47756 34818 06628 179	
76	.91782 04819 93696 98195 75633 527	
77	.91787 29551 98847 90168 52753 731	
78	.91792 54220 64741 16166 45389 112	
79	.91797 78825 92908 26100 33749 588	
8280	.91803 03367 84880 14388 53107 082	
81	.91808 27846 42187 19983 74428 331	
82	.91813 52261 66359 26399 83389 229	
83	.91818 76613 58925 61738 57771 912	
84	.91824 00902 21414 98716 43245 728	
8285	.91829 25127 55355 54691 27533 284	
86	.91834 49289 62274 91689 12962 724	
87	.91839 73388 43700 16430 87407 417	(494)
88	.91844 97424 01157 80358 93614 218	
89	.91850 21396 36173 79663 96921 463	
8290	.91855 45305 50273 55311 51367 881	
91	.91860 69151 44981 93068 64193 562	(494)
92	.91865 92934 21823 23530 58734 170	
93	.91871 16653 82321 22147 35709 546	(495)
94	.91876 40310 27999 09250 32907 869	
8295	.91881 63903 60379 50078 83266 536	
96	.91886 87433 80984 54806 71350 923	
97	.91892 10900 91335 78568 88232 174	(264)
98	.91897 34304 92954 21487 84765 197	
99	.91902 57645 87360 28700 23267 996	

N	logarithm	ref
8300	.91907 80923 76073 90383 27603 520	
01	.91913 04138 60614 41781 31665 173	
02	.91918 27290 42500 63232 26267 131	
03	.91923 50379 23250 80194 04440 638	
04	.91928 73405 04382 63271 05137 409	
8305	.91933 96367 87413 28240 55341 319	
06	.91939 19267 73859 36079 10589 495	
07	.91944 42104 65236 92988 93903 995	
08	.91949 64878 63061 50424 33135 188	
09	.91954 87589 68848 05117 96718 011	
8310	.91960 10237 84110 99107 27842 229	
11	.91965 32823 10364 19760 77037 852	(491)
12	.91970 55345 49120 99804 33176 855	
13	.91975 77805 01894 17347 52892 335	
14	.91981 00201 70195 95909 88416 255	
8315	.91986 22535 55538 04447 13836 915	
16	.91991 44806 59431 57377 49777 290	
17	.91996 67014 83387 14607 86495 370	(495)
18	.92001 89160 28914 81560 05407 645	
19	.92007 11242 97524 09196 99036 872	
8320	.92012 33262 90723 94048 89385 263	
21	.92017 55220 10022 78239 44734 215	
22	.92022 77114 56928 49511 94871 742	
23	.92027 98946 32948 41255 44748 715	
24	.92033 20715 39589 32530 86565 065	

N	logarithm	ref
8325	.92038 42421 78357 48097 10287 066	(492)
26	.92043 64065 50758 58437 12596 834	
27	.92048 85646 58297 79784 04275 175	
28	.92054 07165 02479 74147 16018 906	
29	.92059 28620 84808 49338 02693 775	
8330	.92064 50014 06787 58996 46024 115	
31	.92069 71344 69920 02616 55720 349	
32	.92074 92612 75708 25572 69045 479	
33	.92080 13818 25654 19145 48821 676	
34	.92085 34961 21259 20547 79878 097	
8335	.92090 56041 64024 12950 63941 055	
36	.92095 77059 55449 25509 12967 655	
37	.92100 98014 97034 33388 40924 025	
38	.92106 18907 90278 57789 54009 254	
39	.92111 39738 36680 65975 39326 160	
8340	.92116 60506 37738 71296 52000 003	
41	.92121 81211 94950 33217 00746 264	
42	.92127 01855 09812 57340 31888 596	
43	.92132 22435 83821 95435 11828 076	
44	.92137 42954 18474 45461 07964 854	
8345	.92142 63410 15265 51594 68073 329	
46	.92147 83803 75690 04254 98131 954	
47	.92153 04135 01242 40129 38608 779	
48	.92158 24403 93416 42199 39203 852	
49	.92163 44610 53705 39766 32049 580	

N	logarithm	ref
8350	.92168 64754 83602 08477 03370 152	(495)
51	.92173 84836 84598 70349 63601 149	
52	.92179 04856 58186 93799 15970 431	
53	.92184 24814 05857 93663 23541 409	
54	.92189 44709 29102 31227 74719 817	
8355	.92194 64542 29410 14252 47225 074	
56	.92199 84313 08270 96996 70527 346	
57	.92205 04021 67173 80244 86751 409	
58	.92210 23668 07607 11332 10048 410	
59	.92215 43252 31058 84169 84436 634	
8360	.92220 62774 39016 39271 40112 364	(376)
61	.92225 82234 32966 63777 48231 944	
62	.92231 01632 14395 91481 74166 129	
63	.92236 20967 84790 02856 29227 835	
64	.92241 40241 45634 25077 20874 370	
8365	.92246 59452 98413 32050 01385 240	(496)
66	.92251 78602 44611 44435 15016 639	
67	.92256 97689 85712 29673 43633 694	
68	.92262 16715 23199 02011 50821 578	
69	.92267 35678 58554 22527 24476 559	
8370	.92272 54579 93259 99155 17878 099	
71	.92277 73419 28797 86711 89243 068	
72	.92282 92196 66648 86921 39763 182	
73	.92288 10912 08293 48440 50126 737	
74	.92293 29565 55211 66884 15525 728	

N	logarithm	ref
8375	.92298 48157 08882 84850 79149 451	(496)
76	.92303 66686 70785 91947 64165 646	
77	.92308 85154 42399 24816 04190 297	
78	.92314 03560 25200 67156 72247 143	
79	.92319 21904 20667 49755 08217 995	
8380	.92324 40186 30276 50506 44784 941	
81	.92329 58406 55503 94441 31865 516	
82	.92334 76564 97825 53750 59541 910	
83	.92339 94661 58716 47810 79485 303	
84	.92345 12696 39651 43209 24876 390	
8385	.92350 30669 42104 53769 28823 197	(498)
86	.92355 48580 67549 40575 41277 224	
87	.92360 66430 17459 11998 44449 032	
88	.92365 84217 93306 23720 66724 314	
89	.92371 01943 96562 78760 95081 546	
8390	.92376 19608 28700 27499 86012 269	
91	.92381 37210 91189 67704 74945 094	
92	.92386 54751 85501 44554 84174 481	
93	.92391 72231 13105 50666 29295 374	
94	.92396 89648 75471 26117 24144 756	
8395	.92402 07004 74067 58472 84251 180	
96	.92407 24299 10362 82810 28793 371	
97	.92412 41531 85824 81743 81068 930	
98	.92417 58703 01920 85449 67474 228	
99	.92422 75812 60117 71691 14996 543	

N	logarithm	ref
8400	.92427 92860 61881 65843 47219 513	
01	.92433 09847 08678 40918 78842 950	
02	.92438 26772 01973 17591 08718 093	
03	.92443 43635 43230 64221 11399 349	
04	.92448 60437 33914 96881 27213 590	
8405	.92453 77177 75489 79380 50848 052	
06	.92458 93856 69418 23289 18457 910	
07	.92464 10474 17162 87963 93294 568	
08	.92469 27030 20185 80572 49855 733	
09	.92474 43524 79948 56118 56558 322	
8410	.92479 59957 97912 17466 56935 259	
11	.92484 76329 75537 15366 49357 207	
12	.92489 92640 14283 48478 65280 300	
13	.92495 08889 15610 63398 46020 912	
14	.92500 25076 80977 54681 18058 533	
8415	.92505 41203 11842 64866 66867 774	
16	.92510 57268 09663 84504 09280 575	
17	.92515 73271 75898 52176 64379 654	
18	.92520 89214 12003 54526 22924 240	
19	.92526 05095 19435 26278 15309 138	(496)
8420	.92531 20914 99649 50265 78058 181	
21	.92536 36673 54101 57455 18853 100	
22	.92541 52370 84246 26969 80098 858	
23	.92546 68006 91537 86115 01026 500	(278)
24	.92551 83581 77430 10402 78334 551	

(42)

N	logarithm	ref
8425	.92556 99095 43376 23576 25370 007	
26	.92562 14547 90828 97634 29849 955	
27	.92567 29939 21240 52856 10124 865	
28	.92572 45269 36062 57825 69984 599	
29	.92577 60538 36746 29456 52008 153	(497)
8430	.92582 75746 24742 33015 89458 195	
31	.92587 90893 01500 82149 56721 416	(497)
32	.92593 05978 68471 38906 18295 733	
33	.92598 21003 27103 13761 76325 386	
34	.92603 35966 78844 65644 16684 950	
8435	.92608 50869 25144 01957 53613 303	
36	.92613 65710 67448 78606 72898 580	
37	.92618 80491 07206 00021 73615 137	
38	.92623 95210 45862 19182 08413 566	
39	.92629 09868 84863 37641 22364 779	
8440	.92634 24466 25655 05550 90359 194	
41	.92639 39002 69682 21685 53062 053	
42	.92644 53478 18389 33466 51425 891	
43	.92649 67892 73220 36986 59761 187	(498)
44	.92654 82246 35618 77034 17366 223	
8445	.92659 96539 07027 47117 58717 163	
46	.92665 10770 88888 89489 42219 393	
47	.92670 24941 82644 95170 77521 129	(255)
48	.92675 39051 89737 03975 51390 323	
49	.92680 53101 11606 04534 52155 880	

N	logarithm	ref
8450	.92685 67089 49692 34319 92714 212	
51	.92690 81017 05435 79669 32102 146	
52	.92695 94883 80275 75809 95637 203	
53	.92701 08689 75651 06882 93626 259	
54	.92706 22434 93000 05967 38643 620	
8455	.92711 36119 33760 55104 61379 507	
56	.92716 49742 99369 85322 25059 981	
57	.92721 63305 91264 76658 38439 311	
58	.92726 76808 10881 58185 67365 805	
59	.92731 90249 59656 08035 44922 112	
8460	.92737 03630 39023 53421 80141 007	
61	.92742 16950 50418 70665 65297 666	(292)
62	.92747 30209 95275 85218 81779 451	
63	.92752 43408 75028 71688 04534 199	
64	.92757 56546 91110 53859 05098 034	
8465	.92762 69624 44954 04720 53203 703	
66	.92767 82641 37991 46488 16970 443	
67	.92772 95597 71654 50628 61676 392	(433)
68	.92778 08493 47374 37883 47114 529	
69	.92783 21328 66581 78293 23533 171	
8470	.92788 34103 30706 91221 26162 011	
71	.92793 46817 41179 45377 68324 709	
72	.92798 59470 99428 58843 33139 034	
73	.92803 72064 06882 99093 63805 551	
74	.92808 84596 64970 83022 52485 867	

N	logarithm	ref
8475	.92813 97068 75119 76966 27771 424	
76	.92819 09480 38756 96727 40743 833	
77	.92824 21831 57309 07598 49627 759	
78	.92829 34122 32202 24386 03037 344	
79	.92834 46352 64862 11434 21817 161	
8480	.92839 58522 56713 82648 79478 705	
81	.92844 70632 09182 01520 81233 404	
82	.92849 82681 23690 81150 41623 143	
83	.92854 94670 01663 84270 60749 304	
84	.92860 06598 44524 23270 99101 295	
8485	.92865 18466 53694 60221 50985 584	
86	.92870 30274 30597 06896 16556 195	
87	.92875 42021 76653 24796 72447 687	
88	.92880 53708 93284 25176 41011 582	
89	.92885 65335 81910 69063 58157 234	
8490	.92890 76902 43952 67285 39798 138	
91	.92895 88408 80829 80491 46904 643	
92	.92900 99854 93961 19177 49164 070	
93	.92906 11240 84765 43708 87249 216	
94	.92911 22566 54660 64344 33696 220	
8495	.92916 33832 05064 41259 52392 778	
96	.92921 45037 37393 84570 56677 699	
97	.92926 56182 53065 54357 66052 756	
98	.92931 67267 53495 60688 61507 838	
99	.92936 78292 40099 63642 39460 373	

N	logarithm	ref
8500	.92941 89257 14292 73332 64309 996	(499)
01	.92947 00161 77489 49931 19609 440	
02	.92952 11006 31104 03691 57852 635	
03	.92957 21790 76549 94972 48880 984	
04	.92962 32515 15240 34261 26908 788	
8505	.92967 43179 48587 82197 36168 801	
06	.92972 53783 78004 49595 75178 890	
07	.92977 64328 04901 97470 39630 759	
08	.92982 74812 30691 37057 63901 725	
09	.92987 85236 56783 29839 61190 511	
8510	.92992 95600 84587 87567 62278 018	(446)
11	.92998 05905 15514 72285 52914 062	
12	.93003 16149 50972 96353 09831 027	
13	.93008 26333 92371 22469 35385 416	
14	.93013 36458 41117 63695 90828 257	
8515	.93018 46522 98619 83480 28205 339	
16	.93023 56527 66284 95679 20888 234	
17	.93028 66472 45519 64581 92737 075	
18	.93033 76357 37730 04933 45896 059	
19	.93038 86182 44321 81957 87222 625	
8520	.93043 95947 66700 11381 53351 277	(499)
21	.93049 05653 06269 59456 34393 023	
22	.93054 15298 64434 42982 96271 364	
23	.93059 24884 42598 29334 01695 824	
24	.93064 34410 42164 36477 29773 962	

N	logarithm	ref
8525	.93069 43876 64535 32998 94262 819	(499)
26	.93074 53283 11113 38126 60460 781	
27	.93079 62629 83300 21752 60740 789	
28	.93084 71916 82497 04457 08725 868	
29	.93089 81144 10104 57531 12107 923	
8530	.93094 90311 67523 02999 84110 763	
31	.93099 99419 56152 13645 53598 295	
32	.93105 08467 77391 13030 73828 857	
33	.93110 17456 32638 75521 29856 625	
34	.93115 26385 23293 26309 44581 058	
8535	.93120 35254 50752 41436 83445 326	(500)
36	.93125 44064 16413 47817 57784 671	
37	.93130 52814 21673 23261 26825 651	
38	.93135 61504 67927 96495 98337 214	
39	.93140 70135 56573 47191 27934 551	
8540	.93145 78706 89005 05981 17036 671	(454)
41	.93150 87218 66617 54487 09478 649	
42	.93155 95670 90805 25340 86779 491	
43	.93161 04063 62962 02207 62066 553	
44	.93166 12396 84481 19808 72657 466	
8545	.93171 20670 56755 63944 71300 510	
46	.93176 28884 81177 71518 16074 370	
47	.93181 37039 59139 30556 58948 226	
48	.93186 45134 92031 80235 33003 109	
49	.93191 53170 81246 10900 38315 466	

N	logarithm	ref
8550	.93196 61147 28172 64091 26503 875	
51	.93201 69064 34201 32563 83939 846	
52	.93206 76922 00721 60313 13623 640	
53	.93211 84720 29122 42596 15726 056	
54	.93216 92459 20792 25954 66797 107	
8555	.93222 00138 77119 08237 97642 528	
56	.93227 07758 99490 38625 69869 051	
57	.93232 15319 89293 17650 51099 376	
58	.93237 22821 47913 97220 88857 777	
59	.93242 30263 76738 80643 83127 261	
8560	.93247 37646 77153 22647 57579 236	
61	.93252 44970 50542 29404 29476 590	
62	.93257 52234 98290 58552 78251 133	
63	.93262 59440 21782 19221 12756 318	(502)
64	.93267 66586 22400 72049 37196 176	
8565	.93272 73673 01529 29212 15731 386	
66	.93277 80700 60550 54441 35763 416	
67	.93282 87669 00846 63048 69897 650	
68	.93287 94578 23799 21948 36586 436	
69	.93293 01428 30789 49679 59452 970	
8570	.93298 08219 23198 16429 25296 947	
71	.93303 14951 02405 44054 40782 904	
72	.93308 21623 69791 06104 87812 160	
73	.93313 28237 26734 27845 77579 302	(502)
74	.93318 34791 74613 86280 03314 111	

N	logarithm	ref
8575	.93323 41287 14808 10170 91709 863	
76	.93328 47723 48694 80064 53038 923	
77	.93333 54100 77651 28312 29956 542	
78	.93338 60419 03054 39093 44993 788	
79	.93343 66678 26280 48437 46740 510	
8580	.93348 72878 48705 44246 54719 272	
81	.93353 79019 71704 66318 02951 154	(500)
82	.93358 85101 96653 06366 82214 348	
83	.93363 91125 24925 08047 80996 447	
84	.93368 97089 57894 66978 25141 367	
8585	.93374 02994 96935 30760 16191 778	
86	.93379 08841 43419 99002 68427 994	
87	.93384 14628 98721 23344 44604 197	
88	.93389 20357 64211 07475 90382 938	
89	.93394 26027 41261 07161 67468 796	
8590	.93399 31638 31242 30262 85442 123	
91	.93404 37190 35525 36759 32293 775	
92	.93409 42683 55480 38772 03661 739	
93	.93414 48117 92477 00585 30770 556	
94	.93419 53493 47884 38669 07074 456	
8595	.93424 58810 23071 21701 13605 101	
96	.93429 64068 19405 70589 43024 846	
97	.93434 69267 38255 58494 22386 419	(502)
98	.93439 74407 80988 10850 34599 923	
99	.93444 79489 48970 05389 38608 059	(502)

N	logarithm	ref	
8600	.93449 84512 43567 72161 88270 480	(198)	
01	.93454 89476 66146 93559 49958 165		
02	.93459 94382 18073 04337 18858 725		
03	.93464 99229 00710 91635 33993 531		
04	.93470 04017 15424 95001 91947 561		
8605	.93475 08746 63579 06414 59312 874		
06	.93480 13417 46536 70302 83846 600		
07	.93485 18029 65660 83570 04344 343		
08	.93490 22583 22313 95615 59229 895		
09	.93495 27078 17858 08356 93862 149		
8610	.93500 31514 53654 76251 66560 118		
11	.93505 35892 31065 06319 53346 941		
12	.93510 40211 51449 58164 51413 770		
13	.93515 44472 16168 43996 81304 440		
14	.93520 48674 26581 28654 87821 797		
8615	.93525 52817 84047 29627 39656 593		
16	.93530 56902 89925 17075 27739 818		
17	.93535 60929 45573 13853 62319 375		
18	.93540 64897 52348 95533 68761 972		
19	.93545 68807 11609 90424 82081 135		
8620	.93550 72658 24712 79596 40192 209		(501)
21	.93555 76450 93013 96899 75895 250		
22	.93560 80185 17869 28990 07586 682		
23	.93565 83861 00634 15348 28700 610		
24	.93570 87478 42663 48302 95880 673		

(43)

N	logarithm	ref
8625	.93575 91037 45311 73052 15883 313	
26	.93580 94538 09932 87685 31213 352	
27	.93585 97980 37880 43205 04492 752	(503)
28	.93591 01364 30507 43549 01563 441	
29	.93596 04689 89166 45611 73325 087	(364)
8630	.93601 07957 15209 59266 36308 698	
31	.93606 11166 09988 47386 51986 922	
32	.93611 14316 74854 25868 04821 941	
33	.93616 17409 11157 63650 79051 814	
34	.93621 20443 20248 82740 34216 160	
8635	.93626 23419 03477 58229 79422 064	
36	.93631 26336 62193 18321 46351 056	
37	.93636 29195 97744 44348 61008 065	
38	.93641 31997 11479 70797 14213 206	
39	.93646 34740 04746 85327 30837 276	
8640	.93651 37424 78893 28795 37781 834	
41	.93656 40051 35265 95275 30704 738	(438)
42	.93661 42619 75211 32080 39492 003	
43	.93666 45130 00075 39784 92476 857	
44	.93671 47582 11203 72245 79406 863	
8645	.93676 49976 09941 36624 13159 976	
46	.93681 52311 97632 93406 90210 399	
47	.93686 54589 75622 56428 49845 117	(501)
48	.93691 56809 45253 92892 32131 959	
49	.93696 58971 07870 23392 34640 067	

N	logarithm	ref
8650	.93701 61074 64814 21934 67913 640	
51	.93706 63120 17428 15959 09699 799	
52	.93711 65107 67053 86360 57931 459	
53	.93716 67037 15032 67510 82466 059	
54	.93721 68908 62705 47279 75581 016	
8655	.93726 70722 11412 67057 01226 761	
56	.93731 72477 62494 21773 43038 228	
57	.93736 74175 17289 59922 51105 643	
58	.93741 75814 77137 83581 87505 487	
59	.93746 77396 43377 48434 70592 478	
8660	.93751 78920 17346 63791 18053 444	
61	.93756 80386 00382 92609 88723 935	
62	.93761 81793 93823 51519 23168 435	
63	.93766 83143 99005 10838 83025 031	(503)
64	.93771 84436 17263 94600 89115 389	
8665	.93776 85670 49935 80571 58320 908	
66	.93781 86846 98356 00272 39225 877	
67	.93786 87965 63859 39001 46528 525	
68	.93791 89026 47780 35854 94220 784	
69	.93796 90029 51452 83748 27537 642	(504)
8670	.93801 90974 76210 29437 53676 919	
71	.93806 91862 23385 73540 71290 332	
72	.93811 92691 94311 70558 98746 685	
73	.93816 93463 90320 28898 01168 050	
74	.93821 94178 12743 10889 16239 768	

N	logarithm	ref
8675	.93826 94834 62911 32810 78795 138	(362)
76	.93831 95433 42155 64909 44175 624	
77	.93836 95974 51806 31421 10367 444	
78	.93841 96457 93193 10592 38915 367	
79	.93846 96883 67645 34701 74614 584	
8680	.93851 97251 76491 90080 63981 482	(504)
81	.93856 97562 21061 17134 72504 173	
82	.93861 97815 02681 10365 00673 623	
83	.93866 98010 22679 18388 98796 210	
84	.93871 98147 82382 43961 80588 573	
8685	.93876 98227 83117 43997 35555 581	(449)
86	.93881 98250 26210 29589 40152 262	
87	.93886 98215 12986 66032 67730 534	
88	.93891 98122 44771 72843 97271 586	
89	.93896 97972 22890 23783 20904 729	
8690	.93901 97764 48666 46874 50213 577	(504)
91	.93906 97499 23424 24427 21330 372	
92	.93911 97176 48486 93056 98819 310	
93	.93916 96796 25177 43706 78349 696	
94	.93921 96358 54818 21667 88159 753	
8695	.93926 95863 38731 26600 89311 943	(501)
96	.93931 95310 78238 12556 74740 605	
97	.93936 94700 74659 87997 67092 774	
98	.93941 94033 29317 15818 15362 985	
99	.93946 93308 43530 13365 90322 910	

N	logarithm	ref
8700	.93951 92526 18618 52462 78746 662	
01	.93956 91686 55901 59425 76432 584	
02	.93961 90789 56698 15087 80022 360	
03	.93966 89835 22326 54818 77618 277	
04	.93971 88823 54104 68546 38199 468	
8705	.93976 87754 53350 00776 99837 962	
06	.93981 86628 21379 50616 56715 361	
07	.93986 85444 59509 71791 44940 987	(504)
08	.93991 84203 69056 72669 27172 313	
09	.93996 82905 51336 16279 76038 499	
8710	.94001 81550 07663 20335 56367 872	
11	.94006 80137 39352 57253 06220 164	
12	.94011 78667 47718 54173 16724 332	
13	.94016 77140 34074 92982 10722 782	(507)
14	.94021 75555 99735 10332 20222 829	
8715	.94026 73914 46011 97662 62656 192	
16	.94031 72215 74218 01220 15947 373	
17	.94036 70459 85665 22079 92391 717	
18	.94041 68646 81665 16166 11343 983	
19	.94046 66776 63528 94272 70718 242	(507)
8720	.94051 64849 32567 22084 17299 918	
21	.94056 62864 90090 20196 15870 799	
22	.94061 60823 37407 64136 17147 816	
23	.94066 58724 75828 84384 24536 429	
24	.94071 56569 06662 66393 59699 414	

N	logarithm	ref
8725	.94076 54356 31217 50611 26941 877	
26	.94081 52086 50801 32498 76413 314	
27	.94086 49759 66721 62552 66127 515	
28	.94091 47375 80285 46325 22801 135	
29	.94096 44934 92799 44445 01511 748	
8730	.94101 42437 05569 72637 44176 182	
31	.94106 39882 19902 01745 36849 957	(508)
32	.94111 37270 37101 57749 65848 635	
33	.94116 34601 58473 21789 72691 883	
34	.94121 31875 85321 30184 07871 066	
8735	.94126 29093 18949 74450 83441 184	
36	.94131 26253 60662 01328 24437 934	
37	.94136 23357 11761 12795 19120 745	(508)
38	.94141 20403 73549 66091 68042 550	
39	.94146 17393 47329 73739 31947 130	
8740	.94151 14326 34403 03561 78494 827	
41	.94156 11202 36070 78705 27817 418	(508)
42	.94161 08021 53633 77658 96902 975	
43	.94166 04783 88392 34275 42811 496	
44	.94171 01489 41646 37791 04722 118	
8745	.94175 98138 14695 32846 44812 714	
46	.94180 94730 08838 19506 87972 670	
47	.94185 91265 25373 53282 60349 646	(509)
48	.94190 87743 65599 45149 26731 122	
49	.94195 84165 30813 61568 26761 528	

N	logarithm	ref
8750	.94200 80530 22313 24507 09995 744	(509)
51	.94205 76838 41395 11459 69789 797	
52	.94210 73089 89355 55466 76029 514	
53	.94215 69284 67490 45136 06697 967	
54	.94220 65422 77095 24662 78282 468	
8755	.94225 61504 19464 93849 75021 942	
56	.94230 57528 95894 08127 76995 451	
57	.94235 53497 07676 78575 87052 674	
58	.94240 49408 56106 71941 56587 130	
59	.94245 45263 42477 10661 10152 942	
8760	.94250 41061 68080 72879 68925 932	(465)
61	.94255 36803 34209 92471 73009 834	
62	.94260 32488 42156 59061 02588 429	
63	.94265 28116 93212 18040 97924 373	
64	.94270 23688 88667 70594 78205 529	
8765	.94275 19204 29813 73715 59239 569	
66	.94280 14663 17940 40226 69997 657	
67	.94285 10065 54337 38801 68007 985	
68	.94290 05411 40293 93984 53599 955	
69	.94295 00700 77098 86209 82999 793	
8770	.94299 95933 66040 51822 80278 381	
71	.94304 91110 08406 83099 48152 090	
72	.94309 86230 05485 28266 77637 403	
73	.94314 81293 58562 91522 56560 107	
74	.94319 76300 68926 33055 76919 842	

N	logarithm	ref
8775	.94324 71251 37861 69066 41110 783	(333)
76	.94329 66145 66654 71785 66999 247	
77	.94334 60983 56590 69495 91858 999	
78	.94339 55765 08954 46550 75165 036	
79	.94344 50490 25030 43395 00246 636	
8780	.94349 45159 06102 56584 74800 453	(317)
81	.94354 39771 53454 38807 30264 423	
82	.94359 34327 68368 98901 20053 276	
83	.94364 28827 52129 01876 16656 422	
84	.94369 23271 06016 68933 07598 992	
8785	.94374 17658 31313 77483 90266 806	
86	.94379 11989 29301 61171 65596 052	
87	.94384 06264 01261 09890 30628 444	
88	.94389 00482 48472 69804 69932 633	
89	.94393 94644 72216 43370 45892 650	
8790	.94398 88750 73771 89353 87864 159	
91	.94403 82800 54418 22851 80199 272	
92	.94408 76794 15434 15311 49140 727	
93	.94413 70731 58097 94550 48586 176	
94	.94418 64612 83687 44776 44723 368	
8795	.94423 58437 93480 06606 99536 992	
96	.94428 52206 88752 77089 53187 953	
97	.94433 45919 70782 09721 05265 842	
98	.94438 39576 40844 14467 94915 384	
99	.94443 33177 00214 57785 79837 612	

N	logarithm	ref
8800	.94448 26721 50168 62639 14166 554	(509)
01	.94453 20209 91981 08521 25222 182	
02	.94458 13642 26926 31473 89140 404	
03	.94463 07018 56278 24107 05380 853	
04	.94468 00338 81310 35618 70113 246	
8805	.94472 93603 03295 71814 48483 071	(505)
06	.94477 86811 23506 95127 45757 372	
07	.94482 79963 43216 24637 77351 385	
08	.94487 73059 63695 36092 37736 804	
09	.94492 66099 86215 61924 68232 418	
8810	.94497 59084 12047 91274 23677 895	
11	.94502 52012 42462 70006 37991 475	
12	.94507 44884 78730 00731 88612 316	
13	.94512 37701 22119 42826 59828 272	
14	.94517 30461 73900 12451 04989 845	
8815	.94522 23166 35340 82570 07611 085	(505)
16	.94527 15815 07709 82972 41358 176	
17	.94532 08407 92275 00290 28926 491	
18	.94537 00944 90303 78018 99806 842	
19	.94541 93426 03063 16536 46941 709	
8820	.94546 85851 31819 73122 82272 184	(507)
21	.94551 78220 77839 61979 91176 392	
22	.94556 70534 42388 54250 85800 141	
23	.94561 62792 26731 78039 57280 563	
24	.94566 54994 32134 18430 26863 480	

(44)

N	logarithm	ref
8825	.94571 47140 59860 17506 95915 265	
26	.94576 39231 11173 74372 94829 943	
27	.94581 31265 87338 45170 30832 282	
28	.94586 23244 89617 43099 34677 623	
29	.94591 15168 19273 38438 06249 206	
8830	.94596 07035 77568 58561 59053 733	
31	.94600 98847 65764 87961 63615 920	(510)
32	.94605 90603 85123 68265 89772 786	
33	.94610 82304 36905 98257 47868 430	
34	.94615 73949 22372 33894 28850 033	
8835	.94620 65538 42782 88328 43265 844	
36	.94625 57071 99397 31925 59165 883	
37	.94630 48549 93474 92284 38906 118	(510)
38	.94635 39972 26274 54255 74856 848	
39	.94640 31338 99054 59962 24016 049	(320)
8840	.94645 22650 13073 08817 41528 417	
41	.94650 13905 69587 57545 13110 853	
42	.94655 05105 69855 20198 86385 131	
43	.94659 96250 15132 68181 01118 497	
44	.94664 87339 06676 30262 18372 932	
8845	.94669 78372 45741 92600 48563 820	
46	.94674 69350 33584 98760 78428 769	
47	.94679 60272 71460 49733 96907 313	
48	.94684 51139 60623 03956 19932 240	
49	.94689 41951 02326 77328 14133 287	(513)

N	logarithm	ref
8850	.94694 32706 97825 43234 19453 931	
51	.94699 23407 48372 32561 70682 015	
52	.94704 14052 55220 33720 17894 958	
53	.94709 04642 19621 92660 45820 260	
54	.94713 95176 42829 12893 92112 060	
8855	.94718 85655 26093 55511 64544 474	
56	.94723 76078 70666 39203 57122 439	
57	.94728 66446 77798 40277 65110 809	
58	.94733 56759 48739 92678 98982 425	
59	.94738 47016 84740 88008 97285 900	
8860	.94743 37218 87050 75544 38433 844	
61	.94748 27365 56918 62256 51412 263	(510)
62	.94753 17456 95593 12830 25411 865	
63	.94758 07493 04322 49683 18381 994	(505)
64	.94762 97473 84354 52984 64507 932	
8865	.94767 87399 36936 60674 80612 295	
66	.94772 77269 63315 68483 71481 240	
67	.94777 67084 64738 29950 34116 231	(73,258)
68	.94782 56844 42450 56441 60912 070	
69	.94787 46548 97698 17171 41761 936	
8870	.94792 36198 31726 39219 65090 149	
71	.94797 25792 45780 07551 17813 384	
72	.94802 15331 41103 65034 84231 064	
73	.94807 04815 18941 12462 43845 655	
74	.94811 94243 80536 08567 68113 585	

N	logarithm	ref
8875	.94816 83617 27131 70045 16127 509	
76	.94821 72935 59970 71569 29230 644	
77	.94826 62198 80295 45813 24563 904	
78	.94831 51406 89347 83467 87546 533	
79	.94836 40559 88369 33260 63290 990	
8880	.94841 29657 78601 01974 46952 770	
81	.94846 18700 61283 54466 73015 915	
82	.94851 07688 37657 13688 03514 907	
83	.94855 96621 08961 60701 15193 678	
84	.94860 85498 76436 34699 85602 443	
8885	.94865 74321 41320 33027 78133 088	
86	.94870 63089 04852 11197 25993 814	
87	.94875 51801 68269 82908 15123 762	(423)
88	.94880 40459 32811 20066 66048 336	
89	.94885 29061 99713 52804 14675 935	
8890	.94890 17609 70213 69495 92036 804	
91	.94895 06102 45548 16780 02964 732	
92	.94899 94540 26952 99576 03722 297	
93	.94904 82923 15663 81103 78570 374	(511)
94	.94909 71251 12915 82902 15282 628	
8895	.94914 59524 19943 84847 79605 684	
96	.94919 47742 37982 25173 88665 707	
97	.94924 35905 68265 00488 83322 087	
98	.94929 24014 12025 65794 99468 945	
99	.94934 12067 70497 34507 38285 171	

N	logarithm	ref
8900	.94939 00066 44912 78472 35433 697	
01	.94943 88010 36504 27986 29210 720	
02	.94948 75899 46503 71814 27645 579	
03	.94953 63733 76142 57208 74551 995	
04	.94958 51513 26651 89928 14531 376	
8905	.94963 39237 99262 34255 56928 903	
06	.94968 26907 95204 13017 38743 090	
07	.94973 14523 15707 07601 86489 531	
08	.94978 02083 62000 57977 77019 545	
09	.94982 89589 35313 62712 97294 399	
8910	.94987 77040 36874 78993 03115 843	
11	.94992 64436 67912 22639 76813 636	
12	.94997 51778 29653 68129 83890 778	
13	.95002 39065 23326 48613 28627 144	
14	.95007 26297 50157 55932 08642 225	
8915	.95012 13475 11373 40638 68417 670	
16	.95017 00598 08200 12014 51780 339	
17	.95021 87666 41863 38088 53346 560	
18	.95026 74680 13588 45655 68928 284	
19	.95031 61639 24600 20295 44901 853	
8920	.95036 48543 76123 06390 26540 057	
21	.95041 35393 69381 07144 05308 196	
22	.95046 22189 05597 84600 65124 834	
23	.95051 08929 85996 59662 27587 943	(511)
24	.95055 95616 11800 12107 96167 134	

N	logarithm	ref
8925	.95060 82247 84230 80611 99362 667	(511)
26	.95065 68825 04510 62762 32831 942	
27	.95070 55347 73861 15079 00484 151	
28	.95075 41815 93503 53032 54543 803	
29	.95080 28229 64658 51062 34583 797	
8930	.95085 14588 88546 42595 05528 752	(119,257)
31	.95090 00893 66387 20062 94629 267	
32	.95094 87143 99400 34922 27407 823	
33	.95099 73339 88804 97671 62576 998	
34	.95104 59481 35819 77870 25930 704	
8935	.95109 45568 41663 04156 43209 120	
36	.95114 31601 07552 64265 71938 019	
37	.95119 17579 34706 05049 32243 171	
38	.95124 03503 24340 32492 36640 523	
39	.95128 89372 77672 11732 18802 825	
8940	.95133 75187 95917 67076 61303 406	(512)
41	.95138 60948 80292 82022 22337 773	
42	.95143 46655 32012 99272 61423 729	
43	.95148 32307 52293 20756 64080 694	
44	.95153 17905 42348 07646 65488 901	
8945	.95158 03449 03391 80376 73129 173	
46	.95162 88938 36638 18660 88403 949	
47	.95167 74373 43300 61511 27240 240	
48	.95172 59754 24592 07256 39675 217	
49	.95177 45080 81725 13559 28425 089	

N	logarithm	ref
8950	.95182 30353 15911 97435 66437 970	(393)
51	.95187 15571 28364 35272 13431 409	
52	.95192 00735 20293 62844 31415 261	
53	.95196 85844 92910 75334 99200 590	
54	.95201 70900 47426 27352 25895 267	
8955	.95206 55901 85050 32947 63386 962	
56	.95211 40849 06992 65634 17814 184	
57	.95216 25742 14462 58404 60026 075	
58	.95221 10581 08669 03749 35031 608	
59	.95225 95365 90820 53674 70438 888	
8960	.95230 80096 62125 19720 83885 217	(513)
61	.95235 64773 23790 72979 89458 608	
62	.95240 49395 77024 44114 03111 420	
63	.95245 33964 23033 23373 47066 786	
64	.95250 18478 63023 60614 53218 512	
8965	.95255 02938 98201 65317 65525 124	(512)
66	.95259 87345 29773 06605 41398 724	
67	.95264 71697 58943 13260 52089 342	
68	.95269 55995 86916 73743 82065 445	
69	.95274 40240 14898 36212 27391 282	
8970	.95279 24430 44092 08536 93101 734	(512)
71	.95284 08566 75701 58320 89575 334	
72	.95288 92649 10930 12917 27906 136	
73	.95293 76677 50980 59447 14275 093	
74	.95298 60651 97055 44817 43321 630	

N	logarithm	ref
8975	.95303 44572 50356 75738 90516 050	
76	.95308 28439 12086 18744 03533 477	
77	.95313 12251 83445 00204 92629 977	
78	.95317 96010 65634 06351 20021 532	
79	.95322 79715 59853 83287 88266 537	
8980	.95327 63366 67304 37013 27652 485	
81	.95332 46963 89185 33436 82587 496	
82	.95337 30507 26695 98396 96997 373	
83	.95342 13996 81035 17678 98728 823	
84	.95346 97432 53401 37032 82959 539	
8985	.95351 80814 44992 62190 94615 776	
86	.95356 64142 57006 58886 09798 107	
87	.95361 47416 90640 52869 16216 002	
88	.95366 30637 47091 29926 92631 908	
89	.95371 13804 27555 35899 87315 479	
8990	.95375 96917 33228 76699 95508 631	
91	.95380 79976 65307 18328 35902 058	
92	.95385 62982 24985 86893 26123 899	
93	.95390 45934 13459 68627 57241 188	
94	.95395 28832 31923 09906 67274 766	
8995	.95400 11676 81570 17266 13728 298	
96	.95404 94467 63594 57419 45132 061	
97	.95409 77204 79189 57275 71602 164	
98	.95414 59888 29548 03957 34415 837	
99	.95419 42518 15862 44817 74603 475	(42,257)

N	logarithm	ref
9000	.95424 25094 39324 87459 00558 065	(42,257)
01	.95429 07617 01126 99749 54662 665	
02	.95433 90086 02460 09841 78936 588	
03	.95438 72501 44515 06189 79700 946	
04	.95443 54863 28482 37566 91264 199	
9005	.95448 37171 55552 13083 38628 375	(405)
06	.95453 19426 26914 02203 99216 602	
07	.95458 01627 43757 34765 63622 613	
08	.95462 83775 07271 00994 95382 867	
09	.95467 65869 18643 51525 89771 943	
9010	.95472 47909 79062 97417 31621 860	(513)
11	.95477 29896 89717 10170 52165 959	
12	.95482 11830 51793 21746 84908 020	(394)
13	.95486 93710 66478 24585 20517 230	
14	.95491 75537 34958 71619 60749 693	
9015	.95496 57310 58420 76296 71397 085	
16	.95501 39030 38050 12593 34263 136	
17	.95506 20696 75032 15033 98168 569	
18	.95511 02309 70551 78708 28985 144	
19	.95515 83869 25793 59288 58699 462	
9020	.95520 65375 41941 73047 33507 159	
21	.95525 46828 20179 96874 60938 150	
22	.95530 28227 61691 68295 56013 559	
23	.95535 09573 67659 85487 86434 978	
24	.95539 90866 39267 07299 16806 711	

(45)

N	logarithm	ref	
9025	.95544 72105 77695 53264 51891 621	(509)	
26	.95549 53291 84127 03623 78901 254		
27	.95554 34424 59742 99339 08820 854		
28	.95559 15504 05724 42112 16769 927		
29	.95563 96530 23251 94401 81398 992		
9030	.95568 77503 13505 79441 23323 151		
31	.95573 58422 77665 81255 42593 129		
32	.95578 39289 16911 44678 55204 424		
33	.95583 20102 32421 75371 28645 186		
34	.95588 00862 25375 39838 16483 497		
9035	.95592 81568 96950 65444 91994 655		
36	.95597 62222 48325 40435 80829 127		
37	.95602 42822 80677 13950 92721 788		
38	.95607 23369 95182 96043 52243 103		
39	.95612 03863 93019 57697 28592 862		
9040	.95616 84304 75363 30843 64437 128		(514)
41	.95621 64692 43390 08379 03789 019		
42	.95626 45026 98275 44182 18933 963		
43	.95631 25308 41194 53131 36400 060		
44	.95636 05536 73322 11121 61974 181		
9045	.95640 85711 95832 55082 04764 443		(514)
46	.95645 65834 09899 82993 00309 687		
47	.95650 45903 16697 53903 32736 596		
48	.95655 25919 17398 87947 55965 083		
49	.95660 05882 13176 66363 13962 572		

N	logarithm	ref
9050	.95664 85792 05203 31507 60047 817	
51	.95669 65648 94650 86875 75244 880	
52	.95674 45452 82690 97116 85687 900	
53	.95679 25203 70494 88051 79077 278	
54	.95684 04901 59233 46690 20187 915	
9055	.95688 84546 50077 21247 65430 123	
56	.95693 64138 44196 21162 76463 842	
57	.95698 43677 42760 17114 32866 789	
58	.95703 23163 46938 41038 43857 161	
59	.95708 02596 57899 86145 59071 529	(294)
9060	.95712 81976 76813 06937 78398 533	
61	.95717 61304 04846 19225 60869 022	
62	.95722 40578 43167 00145 32603 247	
63	.95727 19799 92942 88175 93815 739	
64	.95731 98968 55340 83156 24878 500	
9065	.95736 78084 31527 46301 91443 120	
66	.95741 57147 22669 00222 48622 451	
67	.95746 36157 29931 28938 44232 456	(506)
68	.95751 15114 54479 77898 21094 861	
69	.95755 94018 97479 53995 18401 216	
9070	.95760 72870 60095 25584 72139 016	
71	.95765 51669 43491 22501 14580 458	
72	.95770 30415 48831 36074 72834 505	
73	.95775 09108 77279 19148 66462 832	
74	.95779 87749 29997 86096 04160 298	

N	logarithm	ref
9075	.95784 66337 08150 12836 79500 563	
76	.95789 44872 12898 36854 65747 447	
77	.95794 23354 45404 57214 09732 678	
78	.95799 01784 06830 34577 24800 620	
79	.95803 80160 98336 91220 82820 614	
9080	.95808 58485 21085 11053 05267 542	
81	.95813 36756 76235 39630 53371 230	
82	.95818 14975 64947 84175 17335 306	
83	.95822 93141 88382 13591 04626 127	
84	.95827 71255 47697 58481 27332 390	
9085	.95832 49316 44053 11164 88596 040	
86	.95837 27324 78607 25693 68115 091	
87	.95842 05280 52518 17869 06718 967	
88	.95846 83183 66943 65258 90016 981	
89	.95851 61034 23041 07214 31120 564	
9090	.95856 38832 21967 44886 52439 847	
91	.95861 16577 64879 41243 66555 222	(35,540)
92	.95865 94270 52933 21087 56164 475	
93	.95870 71910 87284 71070 53106 115	
94	.95875 49498 69089 39712 16459 504	
9095	.95880 27033 99502 37416 09722 391	
96	.95885 04516 79678 36486 77066 469	
97	.95889 81947 10771 71146 18671 557	
98	.95894 59324 93936 37550 65139 016	
99	.95899 36650 30325 93807 50985 000	

N	logarithm	ref
9100	.95904 13923 21093 59991 87214 165	(515)
01	.95908 91143 67392 18163 32974 427	
02	.95913 68311 70374 12382 66293 375	
03	.95918 45427 31191 48728 53896 956	
04	.95923 22490 50995 95314 20111 029	
9105	.95927 99501 30938 82304 14846 390	(515)
06	.95932 76459 72171 01930 80667 876	
07	.95937 53365 75843 08511 18948 155	
08	.95942 30219 43105 18463 55106 795	
09	.95947 07020 75107 10324 02935 223	
9110	.95951 83769 72998 24763 28008 178	
11	.95956 60466 37927 64603 10182 241	
12	.95961 37110 71043 94833 05182 077	
13	.95966 13702 73495 42627 05274 952	
14	.95970 90242 46429 97359 99034 153	
9115	.95975 66729 90995 10624 30191 899	
16	.95980 43165 08337 96246 55582 343	
17	.95985 19547 99605 30304 02175 266	
18	.95989 95878 65943 51141 23201 058	
19	.95994 72157 08498 59386 53367 593	
9120	.95999 48383 28416 17968 63169 579	
21	.96004 24557 26841 52133 12290 999	
22	.96009 00679 04919 49459 02101 223	
23	.96013 76748 63794 59875 27245 404	
24	.96018 52766 04610 95677 26329 732	

N	logarithm	ref
9125	.96023 28731 28512 31543 31702 163	(515)
26	.96028 04644 36642 04551 18329 204	
27	.96032 80505 30143 14194 51769 353	
28	.96037 56314 10158 22399 35243 787	
29	.96042 32070 77829 53540 55804 894	
9130	.96047 07775 34298 94458 29603 233	(470)
31	.96051 83427 80707 94474 46253 529	
32	.96056 59028 18197 65409 12300 283	
33	.96061 34576 47908 81596 93783 588	
34	.96066 10072 70981 79903 57905 757	
9135	.96070 85516 88556 59742 13799 333	(516)
36	.96075 60909 01772 83089 52397 089	
37	.96080 36249 11769 74502 85404 593	
38	.96085 11537 19686 21135 83375 940	
39	.96089 86773 26660 72755 12893 232	
9140	.96094 61957 33831 41756 72850 399	
41	.96099 37089 42336 03182 29841 941	
42	.96104 12169 53311 94735 52657 188	
43	.96108 87197 67896 16798 45880 662	
44	.96113 62173 87225 32447 82599 125	
9145	.96118 37098 12435 67471 36215 899	
46	.96123 11970 44663 10384 11373 049	
47	.96127 86790 85043 12444 73982 008	
48	.96132 61559 34710 87671 80363 231	
49	.96137 36275 94801 12860 05495 466	

N	logarithm	ref
9150	.96142 10940 66448 27596 70375 223	(515)
51	.96146 85553 50786 34277 68487 015	
52	.96151 60114 48948 98123 91384 975	
53	.96156 34623 62069 47197 53386 416	
54	.96161 09080 91280 72418 15377 914	
9155	.96165 83486 37715 27579 07734 508	(349)
56	.96170 57840 02505 29363 52352 589	
57	.96175 32141 86782 57360 83797 065	
58	.96180 06391 91678 54082 69563 369	
59	.96184 80590 18324 24979 29454 915	
9160	.96189 54736 67850 38455 54076 550	(506)
61	.96194 28831 41387 25887 22444 607	
62	.96199 02874 40064 81637 18714 128	
63	.96203 76865 65012 63071 48023 828	
64	.96208 50805 17359 90575 51459 389	
9165	.96213 24692 98235 47570 20135 659	
66	.96217 98529 08767 80528 08398 325	
67	.96222 72313 50084 98989 46145 643	
68	.96227 46046 23314 75578 50270 804	
69	.96232 19727 29584 46019 35225 504	
9170	.96236 93356 70021 09152 22705 293	(516)
71	.96241 66934 45751 26949 50457 288	
72	.96246 40460 57901 24531 80210 813	
73	.96251 13935 07596 90184 04731 539	
74	.96255 87357 95963 75371 53999 715	

N	logarithm	ref
9175	.96260 60729 24126 94756 00513 036	
76	.96265 34048 93211 26211 63714 738	
77	.96270 07317 04341 10841 13547 499	
78	.96274 80533 58640 52991 73133 686	
79	.96279 53698 57233 20271 20582 563	
9180	.96284 26812 01242 43563 89924 988	
81	.96288 99873 91791 17046 71176 200	(516)
82	.96293 72884 30001 98205 09527 249	
83	.96298 45843 16997 07849 03665 652	
84	.96303 18750 53898 30129 03225 822	
9185	.96307 91606 41827 12552 05369 864	
86	.96312 64410 81904 65997 50499 293	
87	.96317 37163 75251 64733 17098 233	(517)
88	.96322 09865 22988 46431 15708 690	
89	.96326 82515 26235 12183 82038 435	
9190	.96331 55113 86111 26519 69202 086	
91	.96336 27661 03736 17419 39095 948	
92	.96341 00156 80228 76331 52907 169	
93	.96345 72601 16707 58188 60757 793	
94	.96350 44994 14290 81422 90484 255	
9195	.96355 17335 74096 27982 35552 900	
96	.96359 89625 97241 43346 42112 077	
97	.96364 61864 84843 36541 95181 382	
98	.96369 34052 38018 80159 03978 603	
99	.96374 06188 57884 10366 86384 933	(81,256)

N	logarithm	ref
9200	.96378 78273 45555 26929 52549 017	(484)
01	.96383 50307 02147 93221 87630 392	
02	.96388 22289 28777 36245 33682 874	
03	.96392 94220 26558 46643 70678 470	
04	.96397 66099 96605 78718 96672 352	
9205	.96402 37928 40033 50447 07109 477	(517)
06	.96407 09705 57955 43493 73273 396	
07	.96411 81431 51485 03230 19877 811	
08	.96416 53106 21735 38749 01801 456	
09	.96421 24729 69819 22879 79966 836	
9210	.96425 96301 96848 92204 96363 398	
11	.96430 67823 03936 47075 48215 691	
12	.96435 39292 92193 51626 61297 061	
13	.96440 10711 62731 33793 62389 448	
14	.96444 82079 16660 85327 50889 839	
9215	.96449 53395 55092 61810 69563 927	
16	.96454 24660 79136 82672 74447 538	
17	.96458 95874 89903 31206 03896 377	
18	.96463 67037 88501 54581 46784 653	
19	.96468 38149 76040 63864 09853 125	
9220	.96473 09210 53629 34028 84207 132	(341)
21	.96477 80220 22376 03976 10965 167	
22	.96482 51178 83388 76547 46058 526	
23	.96487 22086 37775 18541 24182 604	
24	.96491 92942 86642 60728 21900 385	

(46)

N	logarithm	ref
9225	.96496 63748 31097 97867 19898 670	(517)
26	.96501 34502 72247 88720 64397 604	
27	.96506 05206 11198 56070 27714 044	
28	.96510 75858 49055 86732 67979 327	
29	.96515 46459 86925 31574 88011 981	
9230	.96520 17010 25912 05529 93345 930	
31	.96524 87509 67120 87612 49414 740	
32	.96529 57958 11656 20934 37892 465	
33	.96534 28355 60622 12720 12191 623	
34	.96538 98702 15122 34322 52118 868	
9235	.96543 68997 76260 21238 17688 891	
36	.96548 39242 45138 73123 02097 110	
37	.96553 09436 22860 53807 83851 678	
38	.96557 79579 10527 91313 78065 375	
39	.96562 49671 09242 77867 86907 916	
9240	.96567 19712 20106 69918 49219 225	(518)
41	.96571 89702 44220 88150 89284 219	
42	.96576 59641 82686 17502 64769 642	
43	.96581 29530 36603 07179 13823 509	
44	.96585 99368 07071 70669 01337 678	
9245	.96590 69154 95191 85759 64374 117	
46	.96595 38891 02062 94552 56755 395	
47	.96600 08576 28784 03478 92819 941	
48	.96604 78210 76453 83314 90342 623	
49	.96609 47794 46170 69197 12621 171	

N	logarithm	ref
9250	.96614 17327 39032 60638 09729 001	(383)
51	.96618 86809 56137 21541 58934 972	
52	.96623 56240 98581 80218 04290 619	
53	.96628 25621 67463 29399 95385 402	
54	.96632 94951 63878 26257 25270 510	
9255	.96637 64230 88922 92412 67551 758	
56	.96642 33459 43693 13957 12652 118	
57	.96647 02637 29284 41465 03244 421	
58	.96651 71764 46791 90009 68854 764	
59	.96656 40840 97310 39178 59637 172	
9260	.96661 09866 81934 33088 79320 032	
61	.96665 78842 01757 80402 17324 855	
62	.96670 47766 57874 54340 80057 894	
63	.96675 16640 51377 92702 21375 144	
64	.96679 85463 83360 97874 72221 285	
9265	.96684 54236 54916 36852 69443 072	
66	.96689 22958 67136 41251 83777 733	
67	.96693 91630 21113 07324 47016 891	
68	.96698 60251 17937 95974 78346 554	
69	.96703 28821 58702 32774 09863 703	
9270	.96707 97341 44497 07976 11270 011	
71	.96712 65810 76412 76532 13743 223	
72	.96717 34229 55539 58106 32986 737	
73	.96722 02597 82967 37090 91457 908	
74	.96726 70915 59785 62621 39775 613	

N	logarithm	ref
9275	.96731 39182 87083 48591 77307 608	
76	.96736 07399 65949 73669 71938 199	
77	.96740 75565 97472 81311 79016 773	(365)
78	.96745 43681 82740 79778 59487 701	
79	.96750 11747 22841 42149 97202 155	
9280	.96754 79762 18862 06340 15412 366	
81	.96759 47726 71889 75112 92448 842	(506)
82	.96764 15640 83011 16096 76581 088	
83	.96768 83504 53312 61800 00062 351	(427)
84	.96773 51317 83880 09625 92358 906	
9285	.96778 19080 75799 21887 92564 429	
86	.96782 86793 30155 25824 60999 971	
87	.96787 54455 48033 13614 90000 062	
88	.96792 22067 30517 42393 13885 472	
89	.96796 89628 78692 34264 18123 150	
9290	.96801 57139 93641 76318 47673 879	
91	.96806 24600 76449 20647 14528 149	
92	.96810 92011 28197 84357 04430 799	
93	.96815 59371 49970 49585 82794 925	(307)
94	.96820 26681 42849 63516 99805 602	
9295	.96824 93941 07917 38394 94713 924	
96	.96829 61150 46255 51539 99321 895	
97	.96834 28309 58945 45363 40658 693	
98	.96838 95418 47068 27382 42848 819	
99	.96843 62477 11704 70235 28172 669	

N	logarithm	ref
9300	.96848 29485 53935 11696 17320 034	
01	.96852 96443 74839 54690 28837 057	
02	.96857 63351 75497 67308 77767 169	
03	.96862 30209 56988 82823 73486 515	
04	.96866 97017 20391 99703 16734 399	
9305	.96871 63774 66785 81625 95839 264	
06	.96876 30481 97248 57496 82140 719	
07	.96880 97139 12858 21461 24608 147	
08	.96885 63746 14692 32920 43656 392	
09	.96890 30303 03828 16546 24159 057	
9310	.96894 96809 81342 62296 07659 929	
11	.96899 63266 48312 25427 83783 041	(519)
12	.96904 29673 05813 26514 80841 885	
13	.96908 96029 54921 51460 55648 315	
14	.96913 62335 96712 51513 82521 619	
9315	.96918 28592 32261 43283 41498 305	
16	.96922 94798 62643 08753 05743 109	
17	.96927 60954 88931 95296 28161 723	
18	.96932 27061 12202 15691 27215 785	
19	.96936 93117 33527 48135 71940 618	(248)
9320	.96941 59123 53981 36261 66166 249	
21	.96946 25079 74636 89150 31942 213	
22	.96950 90985 96566 81346 92166 657	
23	.96955 56842 20843 52875 52420 254	(422)
24	.96960 22648 48539 09253 82005 441	

N	logarithm	ref
9325	.96964 88404 80725 21507 94191 493	
26	.96969 54111 18473 26187 25665 938	
27	.96974 19767 62854 25379 15192 837	
28	.96978 85374 14938 86723 81478 418	
29	.96983 50930 75797 43429 00244 593	
9330	.96988 16437 46499 94284 80510 865	
31	.96992 81894 28116 03678 40085 119	
32	.96997 47301 21715 01608 80263 825	
33	.97002 12658 28365 83701 59742 146	
34	.97006 77965 49137 11223 67734 471	
9335	.97011 43222 85097 11097 96305 871	
36	.97016 08430 37313 75918 11914 992	
37	.97020 73588 06854 63963 26168 884	(519)
38	.97025 38695 94786 99212 65790 285	
39	.97030 03754 02177 71360 41797 851	
9340	.97034 68762 30093 35830 17899 845	
41	.97039 33720 79600 13789 78101 799	(519)
42	.97043 98629 51763 92165 93528 632	
43	.97048 63488 47650 23658 88461 754	(519)
44	.97053 28297 68324 26757 05591 635	
9345	.97057 93057 14850 85751 70486 368	
46	.97062 57766 88294 50751 55276 706	
47	.97067 22426 89719 37697 41558 093	
48	.97071 87037 20189 28376 82510 184	
49	.97076 51597 80767 70438 64234 355	(520)

N	logarithm	ref
9350	.97081 16108 72517 77407 66309 708	
51	.97085 80569 96502 28699 21568 079	
52	.97090 44981 53783 69633 75088 527	
53	.97095 09343 45424 11451 42411 839	
54	.97099 73655 72485 31326 66975 519	
9355	.97104 37918 36028 72382 76769 781	
56	.97109 02131 37115 43706 40215 043	
57	.97113 66294 76806 20362 21261 404	
58	.97118 30408 56161 43407 33710 636	
59	.97122 94472 76241 19905 94761 155	
9360	.97127 58487 38105 22943 77776 486	
61	.97132 22452 42812 91642 64277 730	
62	.97136 86367 91423 31174 95160 502	
63	.97141 50233 84995 12778 21136 862	
64	.97146 14050 24586 73769 52402 727	
9365	.97150 77817 11256 17560 07531 261	
66	.97155 41534 46061 13669 61592 728	
67	.97160 05202 30058 97740 93501 331	
68	.97164 68820 64306 71554 32589 496	
69	.97169 32389 49861 03042 04410 130	
9370	.97173 95908 87778 26302 75767 321	
71	.97178 59378 79114 41615 98975 992	(520)
72	.97183 22799 24925 15456 55350 990	
73	.97187 86170 26265 80508 97926 111	
74	.97192 49491 84191 35681 93403 556	

N	logarithm	ref
9375	.97197 12763 99756 46122 63334 296	(520)
76	.97201 75986 74015 43231 24529 862	
77	.97206 39160 08022 24675 28706 025	
78	.97211 02284 02830 54404 01358 878	
79	.97215 65358 59493 62662 79873 806	
9380	.97220 28383 79064 46007 50867 825	
81	.97224 91359 62595 67318 86765 794	
82	.97229 54286 11139 55816 81610 981	
83	.97234 17163 25748 07074 86110 475	
84	.97238 79991 07472 83034 41915 940	
9385	.97243 42769 57365 12019 15140 183	
86	.97248 05498 76475 88749 29110 042	
87	.97252 68178 65855 74355 96356 077	
88	.97257 30809 26554 96395 49839 546	
89	.97261 93390 59623 48863 73417 155	
9390	.97266 55922 66110 92210 31544 081	(521)
91	.97271 18405 47066 53352 98215 737	
92	.97275 80839 03539 25691 85148 775	
93	.97280 43223 36577 69123 69201 816	
94	.97285 05558 47230 10056 19036 383	
9395	.97289 67844 36544 41422 21018 531	(521)
96	.97294 30081 05568 22694 04361 654	
97	.97298 92268 55348 79897 65510 955	
98	.97303 54406 86933 05626 91770 061	
99	.97308 16496 01367 59057 84170 277	

N	logarithm	ref
9400	.97312 78535 99698 65962 79582 942	(71,256)
01	.97317 40526 82972 18724 72075 394	
02	.97322 02468 52233 76351 33511 008	
03	.97326 64361 08528 64489 33393 800	
04	.97331 26204 52901 75438 57958 071	
9405	.97335 87998 86397 68166 28503 588	
06	.97340 49744 10060 68321 18976 757	
07	.97345 11440 24934 68247 72798 300	
08	.97349 73087 32063 27000 18937 888	
09	.97354 34685 32489 70356 87236 233	
9410	.97358 96234 27256 90834 22975 106	(521)
11	.97363 57734 17407 47701 00695 757	
12	.97368 19185 03983 66992 37266 238	
13	.97372 80586 88027 41524 04198 076	
14	.97377 41939 70580 30906 39212 801	
9415	.97382 03243 52683 61558 57058 797	(523)
16	.97386 64498 35378 26722 59578 949	
17	.97391 25704 19704 86477 45029 570	
18	.97395 86861 06703 67753 16651 087	
19	.97400 47968 97414 64344 90490 954	
9420	.97405 09027 92877 36927 02479 279	(522)
21	.97409 70037 94131 13067 14757 624	
22	.97414 30999 02214 87240 21261 481	
23	.97418 91911 18167 20842 52556 869	
24	.97423 52774 43026 42205 79931 548	

(47)

N	logarithm	ref
9425	.97428 13588 77830 46611 18741 315	
26	.97432 74354 23616 96303 31011 861	
27	.97437 35070 81423 20504 27296 660	
28	.97441 95738 52286 15427 67791 359	
29	.97446 56357 37242 44292 62705 156	
9430	.97451 16927 37328 37337 71889 622	
31	.97455 77448 53579 91835 03725 453	(522)
32	.97460 37920 87032 72104 13267 614	
33	.97464 98344 38722 09525 99649 354	(522)
34	.97469 58719 09683 02557 02745 561	
9435	.97474 19045 00950 16742 99095 924	
36	.97478 79322 13557 84732 97088 382	
37	.97483 39550 48540 06293 31403 320	(523)
38	.97487 99730 06930 48321 56718 984	
39	.97492 59860 89762 44860 40678 599	(367)
9440	.97497 19942 98068 97111 56119 634	
41	.97501 79976 32882 73449 72565 704	
42	.97506 39960 95236 09436 46981 568	
43	.97510 99896 86161 07834 13791 694	
44	.97515 59784 06689 38619 74162 858	
9445	.97520 19622 57852 38998 84551 245	
46	.97524 79412 40681 13419 44514 516	
47	.97529 39153 56206 33585 83789 319	
48	.97533 98846 05458 38472 48634 691	
49	.97538 58489 89467 34337 87441 835	

N	logarithm	ref
9450	.97543 18085 09262 94738 35610 736	
51	.97547 77631 65874 60541 99694 066	
52	.97552 37129 60331 39942 40808 861	
53	.97556 96578 93662 08472 57316 426	
54	.97561 55979 66895 09018 66770 936	
9455	.97566 15331 81058 51833 87137 192	
56	.97570 74635 37180 14552 17277 999	
57	.97575 33890 36287 42202 16711 635	
58	.97579 93096 79407 47220 84639 864	
59	.97584 52254 67567 09467 38246 956	
9460	.97589 11364 01792 76236 90270 192	
61	.97593 70424 83110 62274 25842 294	(265)
62	.97598 29437 12546 49787 78606 258	
63	.97602 88400 91125 88463 06103 044	(510)
64	.97607 47316 19873 95476 64432 587	
9465	.97612 06182 99815 55509 82188 585	
66	.97616 65001 31975 20762 33667 534	
67	.97621 23771 17377 10966 11352 458	(523)
68	.97625 82492 57045 13398 97671 798	
69	.97630 41165 52002 82898 36033 932	
9470	.97634 99790 03273 41875 01137 759	
71	.97639 58366 11879 80326 68559 831	
72	.97644 16893 78844 55851 83618 473	
73	.97648 75373 05189 93663 29515 368	(517)
74	.97653 33803 91937 86601 94755 036	

N	logarithm	ref
9475	.97657 92186 40109 95150 39842 700	(524)
76	.97662 50520 50727 47446 63260 963	
77	.97667 08806 24811 39297 66725 775	
78	.97671 67043 63382 34193 19722 136	
79	.97676 25232 67460 63319 23319 994	
9480	.97680 83373 38066 25571 73270 792	
81	.97685 41465 76218 87570 22385 118	
82	.97689 99509 82937 83671 42191 922	
83	.97694 57505 59242 15982 83879 738	
84	.97699 15453 06150 54376 38520 387	
9485	.97703 73352 24681 36501 96575 587	
86	.97708 31203 15852 67801 06686 957	
87	.97712 89005 80682 21520 33749 834	
88	.97717 46760 20187 38725 16271 387	
89	.97722 04466 35385 28313 23013 457	
9490	.97726 62124 27292 67028 08920 584	(524)
91	.97731 19733 96925 99472 70333 683	
92	.97735 77295 45301 38122 99489 799	
93	.97740 34808 73434 63341 38308 410	
94	.97744 92273 82341 23390 31464 724	
9495	.97749 49690 73036 34445 78750 417	(524)
96	.97754 07059 46534 80610 86722 267	
97	.97758 64380 03851 13929 19639 127	
98	.97763 21652 45999 54398 49687 702	
99	.97767 78876 73993 89984 06497 554	

N	logarithm	ref
9500	.97772 36052 88847 76632 25945 810	
01	.97776 93180 91574 38283 98252 008	
02	.97781 50260 83186 66888 15363 527	
03	.97786 07292 64697 22415 17632 055	
04	.97790 64276 37118 32870 39781 546	
9505	.97795 21212 01461 94307 56168 102	
06	.97799 78099 58739 70842 25332 236	
07	.97804 34939 09962 94665 33843 956	
08	.97808 91730 56142 66056 39441 130	
09	.97813 48473 98289 53397 13461 555	
9510	.97818 05169 37413 93184 82569 196	
11	.97822 61816 74525 90045 69775 037	(525)
12	.97827 18416 10635 16748 34752 971	
13	.97831 74967 46751 14217 13451 204	
14	.97836 31470 83882 91545 56999 590	
9515	.97840 87926 23039 26009 69913 353	
16	.97845 44333 65228 63081 47593 644	
17	.97850 00693 11459 16442 13125 367	
18	.97854 57004 62738 67995 53372 718	
19	.97859 13268 20074 67881 54372 889	
9520	.97863 69483 84474 34489 36028 371	
21	.97868 25651 56944 54470 86098 293	(499)
22	.97872 81771 38491 82753 93489 257	
23	.97877 37843 30122 42555 80846 092	
24	.97881 93867 32842 25396 36442 973	

N	logarithm	ref
9525	.97886 49843 47656 91111 45375 356	
26	.97891 05771 75571 67866 20053 157	
27	.97895 61652 17591 52168 29995 612	
28	.97900 17484 74721 08881 30928 281	
29	.97904 73269 47964 71237 93182 605	
9530	.97909 29006 38326 40853 29398 477	
31	.97913 84695 46809 87738 21530 257	
32	.97918 40336 74418 50312 47156 671	
33	.97922 95930 22155 35418 05095 030	(525)
34	.97927 51475 91023 18332 40320 213	
9535	.97932 06973 82024 42781 68188 846	
36	.97936 62423 96161 20953 97969 110	
37	.97941 17826 34435 33512 55676 632	
38	.97945 73180 97848 29609 06216 872	
39	.97950 28487 87401 26896 74834 464	(525)
9540	.97954 83747 04095 11543 67869 929	
41	.97959 38958 48930 38245 92824 210	
42	.97963 94122 22907 30240 77731 457	
43	.97968 49238 27025 79319 89840 492	
44	.97973 04306 62285 45842 53605 405	
9545	.97977 59327 29685 58748 67985 696	
46	.97982 14300 30225 15572 23056 407	
47	.97986 69225 64902 82454 15928 687	(526)
48	.97991 24103 34716 94155 65981 194	
49	.97995 78933 40665 54071 29402 805	

N	logarithm	ref
9550	.98000 33715 83746 34242 13047 035	(398)
51	.98004 88450 64956 75368 87598 618	
52	.98009 43137 85293 86825 00052 666	
53	.98013 97777 45754 46669 85506 854	
54	.98018 52369 47335 01661 78267 053	
9555	.98023 06913 91031 67271 22266 837	
56	.98027 61410 77840 27693 80801 307	
57	.98032 15860 08756 35863 45575 660	
58	.98036 70261 84775 13465 45068 923	
59	.98041 24616 06891 50949 52213 290	
9560	.98045 78922 76100 07542 91389 496	
61	.98050 33181 93395 11263 44738 648	
62	.98054 87393 59770 58932 57790 943	
63	.98059 41557 76220 16188 44411 712	
64	.98063 95674 43737 17498 91065 199	
9565	.98068 49743 63314 66174 60396 530	
66	.98073 03765 35945 34381 94132 268	
67	.98077 57739 62621 63156 15300 011	
68	.98082 11666 44335 62414 29767 438	
69	.98086 65545 82079 10968 27101 242	
9570	.98091 19377 76843 56537 80746 375	
71	.98095 73162 29620 15763 47526 021	
72	.98100 26899 41399 74219 66462 743	
73	.98104 80589 13172 86427 56921 205	
74	.98109 34231 45929 75868 16072 915	

N	logarithm	ref
9575	.98113 87826 40660 34995 15683 401	(385)
76	.98118 41373 98354 25247 98222 250	
77	.98122 94874 20000 77064 72296 437	
78	.98127 48327 06588 89895 07407 352	
79	.98132 01732 59107 32213 28031 980	
9580	.98136 55090 78544 41531 07028 617	
81	.98141 08401 65888 24410 58367 584	
82	.98145 61665 22126 56477 29187 332	
83	.98150 14881 48246 82432 91176 377	
84	.98154 68050 45236 16068 31281 480	
9585	.98159 21172 14081 40276 41742 501	
86	.98163 74246 55769 07065 09454 335	
87	.98168 27273 71285 37570 04656 370	
88	.98172 80253 61616 22067 68949 865	
89	.98177 33186 27747 19988 02643 695	
9590	.98181 86071 70663 59927 51428 857	
91	.98186 38909 91350 39661 92382 178	
92	.98190 91700 90792 26159 19299 630	
93	.98195 44444 69973 55592 27359 680	
94	.98199 97141 29878 33351 97117 091	
9595	.98204 49790 71490 34059 77827 593	
96	.98209 02392 95793 01580 70103 838	
97	.98213 54948 03769 49036 07903 071	
98	.98218 07455 96402 58816 39846 915	
99	.98222 59916 74674 82594 09873 703	

N	logarithm	ref
9600	.98227 12330 39568 41336 37223 769	(79,256)
01	.98231 64696 92065 25317 95758 110	
02	.98236 17016 33146 94133 92610 848	
03	.98240 69288 63794 76712 46175 894	
04	.98245 21513 84989 71327 63428 238	
9605	.98249 73691 97712 45612 16580 282	
06	.98254 25823 02943 36570 19073 625	
07	.98258 77907 01662 50590 00906 722	
08	.98263 29943 94849 63456 83298 824	
09	.98267 81933 83484 20365 52690 621	
9610	.98272 33876 68545 35933 34082 002	(526)
11	.98276 85772 51011 94212 63707 334	
12	.98281 37621 31862 48703 61048 689	
13	.98285 89423 12075 22367 00187 427	
14	.98290 41177 92628 07636 80494 540	
9615	.98294 92885 74498 66432 96660 182	(264)
16	.98299 44546 58664 30174 08062 789	
17	.98303 96160 46101 99790 07478 205	
18	.98308 47727 37788 45734 89129 221	
19	.98312 99247 34700 07999 16075 948	
9620	.98317 50720 37812 96122 86947 422	(304)
21	.98322 02146 48102 89208 02014 864	
22	.98326 53525 66545 35931 28606 996	
23	.98331 04857 94115 54556 65867 835	
24	.98335 56143 31788 32948 08857 356	

(48)

N	logarithm	ref
9625	.98340 07381 80538 28582 11995 457	(526)
26	.98344 58573 41339 68560 51849 615	
27	.98349 09718 15166 49622 89266 658	
28	.98353 60816 02992 38159 30849 044	
29	.98358 11867 05790 70222 89776 080	
9630	.98362 62871 24534 51542 45970 460	(526)
31	.98367 13828 60196 57535 05610 556	
32	.98371 64739 13749 33318 59988 854	
33	.98376 15602 86164 93724 43716 949	
34	.98380 66419 78415 23309 92277 497	
9635	.98385 17189 91471 76370 98923 547	
36	.98389 67913 26305 76954 70925 644	
37	.98394 18589 83888 18871 85167 116	
38	.98398 69219 65189 65709 43087 950	
39	.98403 19802 71180 50843 24977 659	
9640	.98407 70339 02830 77450 43617 559	(527)
41	.98412 20828 61110 18521 97272 834	
42	.98416 71271 46988 16875 22034 823	
43	.98421 21667 61433 85166 43513 918	
44	.98425 72017 05416 05903 27883 473	
9645	.98430 22319 79903 31457 32275 140	(464)
46	.98434 72575 85863 84076 54526 029	
47	.98439 22785 24265 55897 82278 093	
48	.98443 72947 96076 08959 41430 146	
49	.98448 23064 02262 75213 43942 914	

N	logarithm	ref
9650	.98452 73133 43792 56538 34997 516	(527)
51	.98457 23156 21632 24751 39507 795	
52	.98461 73132 36748 21621 07986 870	
53	.98466 23061 90106 58879 61768 349	
54	.98470 72944 82673 18235 37582 564	
9655	.98475 22781 15413 51385 31488 262	
56	.98479 72570 89292 80027 42160 135	
57	.98484 22314 05275 95873 13532 590	
58	.98488 72010 64327 60659 76800 166	
59	.98493 21660 67412 06162 91774 992	
9660	.98497 71264 15493 34208 87601 688	
61	.98502 20821 09535 16687 02830 109	
62	.98506 70331 50500 95562 24846 323	
63	.98511 19795 39353 82887 28662 233	
64	.98515 69212 77056 60815 15064 237	
9665	.98520 18583 64571 81611 48121 316	
66	.98524 67908 02861 67666 92052 963	
67	.98529 17185 92888 11509 47457 330	
68	.98533 66417 35612 75816 86900 017	
69	.98538 15602 31996 93428 89863 871	
9670	.98542 64740 83001 67359 77060 212	
71	.98547 13832 89587 70810 44101 873	
72	.98551 62878 52715 47180 94538 455	
73	.98556 11877 73345 10082 72254 184	
74	.98560 60830 52436 43350 93228 776	

N	logarithm	ref
9675	.98565 09736 90949 01056 76661 703	
76	.98569 58596 89842 07519 75460 240	
77	.98574 07410 50074 57320 06091 712	(528)
78	.98578 56177 72605 15310 77800 320	
79	.98583 04898 58392 16630 21188 934	(528)
9680	.98587 53573 08393 66714 16166 267	
81	.98592 02201 23567 41308 19259 803	
82	.98596 50783 04870 86479 90294 888	
83	.98600 99318 53261 18631 18440 357	
84	.98605 47807 69695 24510 47621 118	
9685	.98609 96250 55129 61225 01298 058	
86	.98614 44647 10520 56253 06615 676	
87	.98618 92997 36824 07456 17917 834	
88	.98623 41301 34995 83091 39632 015	
89	.98627 89559 05991 21823 48522 485	(528)
9690	.98632 37770 50765 32737 15312 733	
91	.98636 85935 70272 95349 25677 607	
92	.98641 34054 65468 59621 00605 506	
93	.98645 82127 37306 45970 16131 042	
94	.98650 30153 86740 45283 22438 550	
9695	.98654 78134 14724 18927 62336 835	
96	.98659 26068 22210 98763 89105 551	
97	.98663 73956 10153 87157 83713 596	(528)
98	.98668 21797 79505 56992 71409 914	
99	.98672 69593 31218 51681 37687 086	

N	logarithm	ref
9700	.98677 17342 66244 85178 43618 117	
01	.98681 65045 85536 41992 40566 773	
02	.98686 12702 90044 77197 84271 897	
03	.98690 60313 80721 16447 48306 050	
04	.98695 07878 58516 55984 36908 899	
9705	.98699 55397 24381 62653 97195 713	
06	.98704 02869 79266 73916 30741 369	
07	.98708 50296 24121 97858 04540 244	
08	.98712 97676 59897 13204 61342 386	
09	.98717 45010 87541 69332 29366 348	
9710	.98721 92299 08004 86280 31389 065	
11	.98726 39541 22235 54762 93213 165	
12	.98730 86737 31182 36181 51512 094	
13	.98735 33887 35793 62636 61053 446	
14	.98739 80991 37017 36940 01300 875	
9715	.98744 28049 35801 32626 82394 975	
16	.98748 75061 33092 93967 50513 512	
17	.98753 22027 29839 35979 92611 397	
18	.98757 68947 26987 44441 40540 766	
19	.98762 15821 25483 75900 74551 572	(529)
9720	.98766 62649 26274 57690 26173 057	
21	.98771 09431 30305 87937 80476 487	(434)
22	.98775 56167 38523 35578 77719 537	
23	.98780 02857 51872 40368 14372 703	
24	.98784 49501 71298 12892 43528 130	

N	logarithm	ref
9725	.98788 96099 97745 34581 74691 223	
26	.98793 42652 32158 57721 72955 438	
27	.98797 89158 75482 05465 57560 622	
28	.98802 35619 28659 71845 99835 283	
29	.98806 82033 92635 21787 20523 182	
9730	.98811 28402 68351 91116 86494 609	
31	.98815 74725 56752 86578 06842 734	
32	.98820 21002 58780 85841 28365 410	
33	.98824 67233 75378 37516 30432 806	(331,53)
34	.98829 13419 07487 61164 19241 247	
9735	.98833 59558 56050 47309 21453 643	
36	.98838 05652 22008 57450 77226 880	
37	.98842 51700 06303 24075 32626 560	
38	.98846 97702 09875 50668 31429 451	
39	.98851 43658 33666 11726 06314 047	(406)
9740	.98855 89568 78615 52767 69439 592	
41	.98860 35433 45663 90347 02413 959	
42	.98864 81252 35751 12064 45650 759	
43	.98869 27025 49816 76578 87116 053	(529)
44	.98873 72752 88800 13619 50465 037	
9745	.98878 18434 53640 23997 82569 092	
46	.98882 64070 45275 79619 40433 557	
47	.98887 09660 64645 23495 77506 613	
48	.98891 55205 12686 69756 29379 644	
49	.98896 00703 90338 03659 98879 456	(529)

N	logarithm	ref
9750	.98900 46156 98536 81607 40552 717	
51	.98904 91564 38220 31152 44543 016	
52	.98909 36926 10325 51014 19860 881	
53	.98913 82242 15789 11088 77047 159	
54	.98918 27512 55547 52461 10230 120	
9755	.98922 72737 30536 87416 78576 647	
56	.98927 17916 41692 99453 87137 908	
57	.98931 63049 89951 43294 67089 861	
58	.98936 08137 76247 44897 55368 976	
59	.98940 53180 01516 01468 73703 541	
9760	.98944 98176 66691 81474 07040 927	
61	.98949 43127 72709 24650 81371 180	
62	.98953 88033 20502 42019 40947 314	
63	.98958 32893 11005 15895 24902 672	
64	.98962 77707 45150 99900 43265 728	
9765	.98967 22476 23873 18975 52372 705	
66	.98971 67199 48104 69391 29678 364	
67	.98976 11877 18778 18760 47965 355	(530)
68	.98980 56509 36826 06049 48952 482	
69	.98985 01096 03180 41590 16302 256	(530)
9770	.98989 45637 18773 07091 48028 111	
71	.98993 90132 84535 55651 28301 644	
72	.98998 34583 01399 11767 98660 252	
73	.99002 78987 70294 71352 28615 532	
74	.99007 23346 92153 01738 85662 809	

N	logarithm	ref
9775	.99011 67660 67904 41698 04692 171	
76	.99016 11928 98479 01447 56801 363	
77	.99020 56151 84806 62664 17510 916	
78	.99025 00329 27816 78495 34381 879	
79	.99029 44461 28438 73570 94036 517	
9780	.99033 88547 87601 44014 88582 339	
81	.99038 32589 06233 57456 81439 830	(530)
82	.99042 76584 85263 53043 72574 244	
83	.99047 20535 25619 41451 63131 829	
84	.99051 64440 28229 04897 19480 846	
9785	.99056 08299 94019 97149 36657 756	
86	.99060 52114 23919 43541 01218 920	
87	.99064 95883 18854 40980 53498 201	(383)
88	.99069 39606 79751 57963 49270 810	
89	.99073 83285 07537 34584 20823 779	
9790	.99078 26918 03137 82547 37433 409	
91	.99082 70505 67478 85179 65250 068	(531)
92	.99087 14048 01485 97441 26590 692	
93	.99091 57545 06084 45937 58639 362	
94	.99096 00996 82199 28930 71556 313	
9795	.99100 44403 30755 16351 05995 740	
96	.99104 87764 52676 49808 90032 760	
97	.99109 31080 48887 42605 95499 899	
98	.99113 74351 20311 79746 93733 453	
99	.99118 17576 67873 17951 10730 101	

N	logarithm	ref
9800	.99122 60756 92494 85663 81714 119	(307)
01	.99127 03891 95099 83068 05115 555	
02	.99131 46981 76610 82095 95959 736	
03	.99135 90026 37950 26440 38668 456	
04	.99140 33025 80040 31566 39273 217	
9805	.99144 75980 03802 84722 77040 864	
06	.99149 18889 10159 44953 55512 001	
07	.99153 61753 00031 43109 52952 516	
08	.99158 04571 74339 81859 72218 604	
09	.99162 47345 34005 35702 90035 619	
9810	.99166 90073 79948 50979 05691 141	(288)
11	.99171 32757 13089 45880 89142 591	
12	.99175 75395 34348 10465 28539 769	
13	.99180 17988 44644 06664 77162 665	
14	.99184 60536 44896 68298 99774 906	
9815	.99189 03039 36025 01086 18393 186	(531)
16	.99193 45497 18947 82654 57473 052	
17	.99197 87909 94583 62553 88511 386	
18	.99202 30277 63850 62266 74065 953	
19	.99206 72600 27666 75220 11192 358	
9820	.99211 14877 86949 66796 74298 783	
21	.99215 57110 42616 74346 57418 846	
22	.99219 99297 95585 07198 15902 950	
23	.99224 41440 46771 46670 07528 464	
24	.99228 83537 97092 46082 33029 102	

(49)

N	logarithm	ref
9825	.99233 25590 47464 30767 76043 845	(314)
26	.99237 67597 98802 98083 42485 777	
27	.99242 09560 52024 17421 99331 165	
28	.99246 51478 08043 30223 12829 157	
29	.99250 93350 67775 49984 86132 447	
9830	.99255 35178 32135 62274 96349 247	(531)
31	.99259 76961 02038 24742 31016 948	
32	.99264 18698 78397 67128 23997 787	
33	.99268 60391 62127 91277 90796 903	
34	.99273 02039 54142 71151 63303 119	
9835	.99277 43642 55355 52836 23952 801	(532)
36	.99281 85200 66679 54556 39317 164	
37	.99286 26713 89027 66685 93113 342	
38	.99290 68182 23312 51759 18639 616	
39	.99295 09605 70446 44482 30635 118	
9840	.99299 50984 31341 51744 56564 374	
41	.99303 92318 06909 52629 67327 042	
42	.99308 33606 98061 98427 07393 186	
43	.99312 74851 05710 12643 24364 439	
44	.99317 16050 30764 91012 97961 412	
9845	.99321 57204 74137 01510 68437 683	
46	.99325 98314 36736 84361 64420 738	
47	.99330 39379 19474 52053 30180 188	
48	.99334 80399 23259 89346 52323 630	
49	.99339 21374 49002 53286 85920 497	

N	logarithm	ref
9850	.99343 62304 97611 73215 80054 230	(532)
51	.99348 03190 69996 50782 02803 149	
52	.99352 44031 67065 59952 65650 344	
53	.99356 84827 89727 47024 47322 945	
54	.99361 25579 38890 30635 17061 121	
9855	.99365 66286 15462 01774 57317 155	(320)
56	.99370 06948 20350 23795 85884 929	
57	.99374 47565 54462 32426 77460 185	
58	.99378 88138 18705 35780 84631 897	
59	.99383 28666 13986 14368 58305 098	
9860	.99387 69149 41211 21108 67555 520	(532)
61	.99392 09588 01286 81339 18916 378	
62	.99396 49981 95118 92828 75097 654	
63	.99400 90331 23613 25787 73138 226	
64	.99405 30635 87675 22879 41991 178	
9865	.99409 70895 88209 99231 19542 643	(186)
66	.99414 11111 26122 42445 69064 527	
67	.99418 51282 02317 12611 95101 447	
68	.99422 91408 17698 42316 58792 240	
69	.99427 31489 73170 36654 92626 374	
9870	.99431 71526 69636 73242 14635 613	(186)
71	.99436 11519 08001 02224 42021 282	
72	.99440 51466 89166 46290 04217 462	
73	.99444 91370 14036 00680 55390 471	
74	.99449 31228 83512 33201 86374 968	

<i>N</i>	logarithm	ref
9875	.99453 71042 98497 84235 36047 023	
76	.99458 10812 59894 66749 02134 493	
77	.99462 50537 68604 66308 51465 049	
78	.99466 90218 25529 41088 29652 197	
79	.99471 29854 31570 21882 70219 625	
9880	.99475 69445 87628 12117 03164 231	
81	.99480 08992 94603 87858 62958 164	
82	.99484 48495 53397 97827 95990 215	
83	.99488 87953 64910 63409 67446 911	(353)
84	.99493 27367 30041 78663 67633 640	
9885	.99497 66736 49691 10336 17736 156	
86	.99502 06061 24757 97870 75022 793	
87	.99506 45341 56141 53419 37487 742	(533,538)
88	.99510 84577 44740 61853 47935 715	
89	.99515 23768 91453 80774 97508 343	
9890	.99519 62915 97179 40527 28652 655	
91	.99524 02018 62815 44206 37531 950	
92	.99528 41076 89259 67671 75879 435	
93	.99532 80090 77409 59557 52294 935	
94	.99537 19060 28162 41283 32985 040	
9895	.99541 57985 42415 07065 41947 001	
96	.99545 96866 21064 23927 60596 734	
97	.99550 35702 65006 31712 26841 258	
98	.99554 74494 75137 43091 33595 901	
99	.99559 13242 52353 43577 26746 623	

N	logarithm	ref
9900	.99563 51945 97549 91534 02557 778	(110,256,538)
01	.99567 90605 11622 18188 04525 657	
02	.99572 29219 95465 27639 19678 160	
03	.99576 67790 49973 96871 74320 904	
04	.99581 06316 76042 75765 29230 133	
9905	.99585 44798 74565 87105 74292 744	(533)
06	.99589 83236 46437 26596 22593 777	
07	.99594 21629 92550 62868 03951 693	
08	.99598 59979 13799 37491 57901 780	
09	.99602 98284 11076 64987 26128 028	
9910	.99607 36544 85275 32836 44343 788	
11	.99611 74761 37288 01492 33621 572	
12	.99616 12933 68007 04390 91172 306	
13	.99620 51061 78324 47961 80574 384	
14	.99624 89145 69132 11639 21452 855	
9915	.99629 27185 41321 47872 78609 062	
16	.99633 65180 95783 82138 50601 082	
17	.99638 03132 33410 12949 57775 294	
18	.99642 41039 55091 11867 29749 400	
19	.99646 78902 61717 23511 92347 241	
9920	.99651 16721 54178 65573 53985 737	(535)
21	.99655 54496 33365 28822 91514 272	
22	.99659 92227 00166 77122 35506 872	
23	.99664 29913 55472 47436 55007 496	
24	.99668 67556 00171 49843 41728 772	

N	logarithm	ref
9925	.99673 05154 35152 67544 93704 512	(535,538)
26	.99677 42708 61304 56877 98396 331	
27	.99681 80218 79515 47325 15254 704	
28	.99686 17684 90673 41525 57734 790	
29	.99690 55106 95666 15285 74767 353	
9930	.99694 92484 95381 17590 31685 106	(535,537)
31	.99699 29818 90705 70612 90604 810	
32	.99703 67108 82526 69726 90265 457	
33	.99708 04354 71730 83516 25322 863	
34	.99712 41556 59204 53786 25101 006	
9935	.99716 78714 45833 95574 31800 422	
36	.99721 15828 32504 97160 78164 009	
37	.99725 52898 20103 20079 64600 546	
38	.99729 89924 09513 99129 35766 268	
39	.99734 26906 01622 42383 56604 813	
9940	.99738 63843 97313 31201 87845 884	(379)
41	.99743 00737 97471 20240 60962 933	
42	.99747 37588 02980 37463 52590 211	
43	.99751 74394 14724 84152 58399 497	
44	.99756 11156 33588 34918 66436 840	
9945	.99760 47874 60454 37712 29919 641	(533,537)
46	.99764 84548 96206 13834 39494 387	
47	.99769 21179 41726 57946 94955 387	
48	.99773 57765 97898 38083 76424 808	
49	.99777 94308 65603 95661 14994 351	

N	logarithm	ref
9950	.99782 30807 45725 45488 62828 897	
51	.99786 67262 39144 75779 62732 428	
52	.99791 03673 46743 48162 17176 569	
53	.99795 40040 69402 97689 56792 054	
54	.99799 76364 08004 32851 08323 463	
9955	.99804 12643 63428 35582 62047 529	
56	.99808 48879 36555 61277 38655 359	
57	.99812 85071 28266 38796 55598 877	
58	.99817 21219 39440 70479 92901 822	
59	.99821 57323 70958 32156 58435 619	
9960	.99825 93384 23698 73155 52660 447	
61	.99830 29400 98541 16316 32831 821	
62	.99834 65373 96364 57999 76673 017	
63	.99839 01303 18047 68098 45513 662	
64	.99843 37188 64468 90047 46894 805	
9965	.99847 73030 36506 40834 96640 787	
66	.99852 08828 35038 11012 80398 246	
67	.99856 44582 60941 64707 14642 561	(534,537)
68	.99860 80293 15094 39629 07152 072	
69	.99865 15959 98373 47085 16950 373	
9970	.99869 51583 11655 71988 13717 028	
71	.99873 87162 55817 72867 36667 004	
72	.99878 22698 31735 81879 52899 156	
73	.99882 58190 40286 04819 15214 074	(534,537)
74	.99886 93638 82344 21129 19401 623	

N	logarithm	ref
9975	.99891 29043 58785 83911 60998 482	
76	.99895 64404 70486 19937 91516 004	
77	.99899 99722 18320 29659 74138 728	
78	.99904 34996 03162 87219 38893 842	
79	.99908 70226 25888 40460 37291 929	
9980	.99913 05412 87371 10937 96439 308	
81	.99917 40555 88484 93929 72622 287	
82	.99921 75655 30103 58446 04363 657	
83	.99926 10711 13100 47240 64951 719	
84	.99930 45723 38348 76821 14442 190	
9985	.99934 80692 06721 37459 51133 288	
86	.99939 15617 19090 93202 62514 310	
87	.99943 50498 76329 81882 75688 036	
88	.99947 85336 79310 15128 07267 254	
89	.99952 20131 28903 78373 12745 739	
9990	.99956 54882 25982 30869 35343 993	
91	.99960 89589 71417 05695 54330 062	
92	.99965 24253 66079 09768 32815 752	
93	.99969 58874 10839 23852 65028 544	
94	.99973 93451 06568 02572 23059 544	
9995	.99978 27984 54135 74420 03087 760	
96	.99982 62474 54412 41768 71081 042	
97	.99986 96921 08267 80881 07973 979	
98	.99991 31324 16571 41920 54323 082	
99	.99995 65683 80192 48961 54439 560	
	.00000 00000 00000 00000 00000 000	