

Kenneth Denner E 1. No 7

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| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
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| .51 | 3236 | 3243 | 3251 | 3258 | 3266 | 3273 | 3281 | 3289 | 3296 | 3304 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .52 | 3311 | 3319 | 3327 | 3334 | 3342 | 3350 | 3357 | 3365 | 3373 | 3381 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .53 | 3388 | 3396 | 3404 | 3412 | 3420 | 3428 | 3436 | 3443 | 3451 | 3459 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .54 | 3467 | 3475 | 3483 | 3491 | 3499 | 3508 | 3516 | 3524 | 3532 | 3540 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .55 | 3548 | 3556 | 3565 | 3573 | 3581 | 3589 | 3597 | 3606 | 3614 | 3622 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .56 | 3631 | 3639 | 3648 | 3656 | 3664 | 3673 | 3681 | 3690 | 3698 | 3707 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .57 | 3715 | 3724 | 3733 | 3741 | 3750 | 3758 | 3767 | 3776 | 3784 | 3793 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .58 | 3802 | 3811 | 3819 | 3828 | 3837 | 3846 | 3855 | 3864 | 3873 | 3882 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .59 | 3890 | 3899 | 3908 | 3917 | 3926 | 3936 | 3945 | 3954 | 3963 | 3972 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .60 | 3981 | 3990 | 3999 | 4009 | 4018 | 4027 | 4036 | 4046 | 4055 | 4064 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .61 | 4074 | 4083 | 4093 | 4102 | 4111 | 4121 | 4130 | 4140 | 4150 | 4159 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .62 | 4169 | 4178 | 4188 | 4198 | 4207 | 4217 | 4227 | 4236 | 4246 | 4256 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .63 | 4266 | 4276 | 4285 | 4295 | 4305 | 4315 | 4325 | 4335 | 4345 | 4355 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .64 | 4365 | 4375 | 4385 | 4395 | 4406 | 4416 | 4426 | 4436 | 4446 | 4457 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .65 | 4467 | 4477 | 4487 | 4498 | 4508 | 4519 | 4529 | 4539 | 4550 | 4560 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .66 | 4571 | 4581 | 4592 | 4603 | 4613 | 4624 | 4634 | 4645 | 4656 | 4667 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .67 | 4677 | 4688 | 4699 | 4710 | 4721 | 4732 | 4742 | 4753 | 4764 | 4775 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .68 | 4786 | 4797 | 4808 | 4819 | 4831 | 4842 | 4853 | 4864 | 4875 | 4887 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .69 | 4898 | 4909 | 4920 | 4932 | 4943 | 4955 | 4966 | 4977 | 4989 | 5000 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .70 | 5012 | 5023 | 5035 | 5047 | 5058 | 5070 | 5082 | 5093 | 5105 | 5117 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .71 | 5129 | 5140 | 5152 | 5164 | 5176 | 5188 | 5200 | 5212 | 5224 | 5236 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .72 | 5248 | 5260 | 5272 | 5284 | 5297 | 5309 | 5321 | 5333 | 5346 | 5358 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .73 | 5370 | 5383 | 5395 | 5408 | 5420 | 5433 | 5445 | 5458 | 5470 | 5483 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .74 | 5495 | 5508 | 5521 | 5534 | 5546 | 5559 | 5572 | 5585 | 5598 | 5610 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| .75 | 5623 | 5636 | 5649 | 5662 | 5675 | 5689 | 5702 | 5715 | 5728 | 5741 | 1 | | | | | | | | |

| | 0' | 6' | 12' | 18' | 24' | 30' | 36' | 42' | 48' | 54' | 1' | 2' | 3' | 4' | 5' |
|----|-------|------|------|------|------|------|------|------|------|------|----|----|----|----|----|
| 0° | .0000 | 0017 | 0035 | 0052 | 0070 | 0087 | 0105 | 0122 | 0140 | 0157 | 3 | 6 | 9 | 12 | 15 |
| 1 | .0175 | 0192 | 0209 | 0227 | 0244 | 0262 | 0279 | 0297 | 0314 | 0332 | 3 | 6 | 9 | 12 | 15 |
| 2 | .0349 | 0366 | 0384 | 0401 | 0419 | 0436 | 0454 | 0471 | 0488 | 0506 | 3 | 6 | 9 | 12 | 15 |
| 3 | .0523 | 0541 | 0558 | 0576 | 0593 | 0610 | 0628 | 0645 | 0663 | 0680 | 3 | 6 | 9 | 12 | 15 |
| 4 | .0698 | 0715 | 0732 | 0750 | 0767 | 0785 | 0802 | 0819 | 0837 | 0854 | 3 | 6 | 9 | 12 | 14 |
| 5 | .0872 | 0889 | 0906 | 0924 | 0941 | 0958 | 0976 | 0993 | 1011 | 1028 | 3 | 6 | 9 | 12 | 14 |
| 6 | .1045 | 1063 | 1080 | 1097 | 1115 | 1132 | 1149 | 1167 | 1184 | 1201 | 3 | 6 | 9 | 12 | 14 |
| 7 | .1219 | 1236 | 1253 | 1271 | 1288 | 1305 | 1323 | 1340 | 1357 | 1374 | 3 | 6 | 9 | 12 | 14 |
| 8 | .1392 | 1409 | 1426 | 1444 | 1461 | 1478 | 1495 | 1513 | 1530 | 1547 | 3 | 6 | 9 | 12 | 14 |
| 9 | .1564 | 1582 | 1599 | 1616 | 1633 | 1650 | 1668 | 1685 | 1702 | 1719 | 3 | 6 | 9 | 11 | 14 |
| 10 | .1736 | 1754 | 1771 | 1788 | 1805 | 1822 | 1840 | 1857 | 1874 | 1891 | 3 | 6 | 9 | 11 | 14 |
| 11 | .1908 | 1925 | 1942 | 1959 | 1977 | 1994 | 2011 | 2028 | 2045 | 2062 | 3 | 6 | 9 | 11 | 14 |
| 12 | .2079 | 2096 | 2113 | 2130 | 2147 | 2164 | 2181 | 2198 | 2215 | 2233 | 3 | 6 | 9 | 11 | 14 |
| 13 | .2250 | 2267 | 2284 | 2300 | 2317 | 2334 | 2351 | 2368 | 2385 | 2402 | 3 | 6 | 8 | 11 | 14 |
| 14 | .2419 | 2436 | 2453 | 2470 | 2487 | 2504 | 2521 | 2538 | 2554 | 2571 | 3 | 6 | 8 | 11 | 14 |
| 15 | .2588 | 2605 | 2622 | 2639 | 2656 | 2672 | 2689 | 2706 | 2723 | 2740 | 3 | 6 | 8 | 11 | 14 |
| 16 | .2756 | 2773 | 2790 | 2807 | 2823 | 2840 | 2857 | 2874 | 2890 | 2907 | 3 | 6 | 8 | 11 | 14 |
| 17 | .2924 | 2940 | 2957 | 2974 | 2990 | 3007 | 3024 | 3040 | 3057 | 3074 | 3 | 6 | 8 | 11 | 14 |
| 18 | .3090 | 3107 | 3123 | 3140 | 3156 | 3173 | 3190 | 3206 | 3223 | 3239 | 3 | 6 | 8 | 11 | 14 |
| 19 | .3256 | 3272 | 3289 | 3305 | 3322 | 3338 | 3355 | 3371 | 3387 | 3404 | 3 | 5 | 8 | 11 | 14 |
| 20 | .3420 | 3437 | 3453 | 3469 | 3486 | 3502 | 3518 | 3535 | 3551 | 3567 | 3 | 5 | 8 | 11 | 14 |
| 21 | .3584 | 3600 | 3616 | 3633 | 3649 | 3665 | 3681 | 3697 | 3714 | 3730 | 3 | 5 | 8 | 11 | 14 |
| 22 | .3746 | 3762 | 3778 | 3795 | 3811 | 3827 | 3843 | 3859 | 3875 | 3891 | 3 | 5 | 8 | 11 | 13 |
| 23 | .3907 | 3923 | 3939 | 3955 | 3971 | 3987 | 4003 | 4019 | 4035 | 4051 | 3 | 5 | 8 | 11 | 13 |
| 24 | .4067 | 4083 | 4099 | 4115 | 4131 | 4147 | 4163 | 4179 | 4195 | 4210 | 3 | 5 | 8 | 11 | 13 |
| 25 | .4226 | 4242 | 4258 | 4274 | 4289 | 4305 | 4321 | 4337 | 4352 | 4368 | 3 | 5 | 8 | 11 | 13 |
| 26 | .4384 | 4399 | 4415 | 4431 | 4446 | 4462 | 4478 | 4493 | 4509 | 4524 | 3 | 5 | 8 | 10 | 13 |
| 27 | .4540 | 4555 | 4571 | 4586 | 4602 | 4617 | 4633 | 4648 | 4664 | 4679 | 3 | 5 | 8 | 10 | 13 |
| 28 | .4695 | 4710 | 4726 | 4741 | 4756 | 4772 | 4787 | 4802 | 4818 | 4833 | 3 | 5 | 8 | 10 | 13 |
| 29 | .4848 | 4863 | 4879 | 4894 | 4909 | 4924 | 4939 | 4955 | 4970 | 4985 | 3 | 5 | 8 | 10 | 13 |
| 30 | .5000 | 5015 | 5030 | 5045 | 5060 | 5075 | 5090 | 5105 | 5120 | 5135 | 3 | 5 | 8 | 10 | 13 |
| 31 | .5150 | 5165 | 5180 | 5195 | 5210 | 5225 | 5240 | 5255 | 5270 | 5284 | 2 | 5 | 7 | 10 | 12 |
| 32 | .5299 | 5314 | 5329 | 5344 | 5358 | 5373 | 5388 | 5402 | 5417 | 5432 | 2 | 5 | 7 | 10 | 12 |
| 33 | .5446 | 5461 | 5476 | 5490 | 5505 | 5519 | 5534 | 5548 | 5563 | 5577 | 2 | 5 | 7 | 10 | 12 |
| 34 | .5592 | 5606 | 5621 | 5635 | 5650 | 5664 | 5678 | 5693 | 5707 | 5721 | 2 | 5 | 7 | 10 | 12 |
| 35 | .5736 | 5750 | 5764 | 5779 | 5793 | 5807 | 5821 | 5835 | 5850 | 5864 | 2 | 5 | 7 | 9 | 12 |
| 36 | .5878 | 5892 | 5906 | 5920 | 5934 | 5948 | 5962 | 5976 | 5990 | 6004 | 2 | 5 | 7 | 9 | 12 |
| 37 | .6018 | 6032 | 6046 | 6060 | 6074 | 6088 | 6101 | 6115 | 6129 | 6143 | 2 | 5 | 7 | 9 | 12 |
| 38 | .6157 | 6170 | 6184 | 6198 | 6211 | 6225 | 6239 | 6252 | 6266 | 6280 | 2 | 5 | 7 | 9 | 11 |
| 39 | .6293 | 6307 | 6320 | 6334 | 6347 | 6361 | 6374 | 6388 | 6401 | 6414 | 2 | 4 | 7 | 9 | 11 |
| 40 | .6428 | 6441 | 6455 | 6468 | 6481 | 6494 | 6508 | 6521 | 6534 | 6547 | 2 | 4 | 7 | 9 | 11 |
| 41 | .6561 | 6574 | 6587 | 6600 | 6613 | 6626 | 6639 | 6652 | 6665 | 6678 | 2 | 4 | 7 | 9 | 11 |
| 42 | .6691 | 6704 | 6717 | 6730 | 6743 | 6756 | 6769 | 6782 | 6794 | 6807 | 2 | 4 | 6 | 9 | 11 |
| 43 | .6820 | 6833 | 6845 | 6858 | 6871 | 6884 | 6896 | 6909 | 6921 | 6934 | 2 | 4 | 6 | 8 | 11 |
| 44 | .6947 | 6959 | 6972 | 6984 | 6997 | 7009 | 7022 | 7034 | 7046 | 7059 | 2 | 4 | 6 | 8 | 10 |

NATURAL SINES.

| | 0' | 6' | 12' | 18' | 24' | 30' | 36' | 42' | 48' | 54' | 1' | 2' | 3' | 4' | 5' |
|-----|-------|------|------|------|------|------|------|------|------|------|----|----|----|----|----|
| 45° | .7071 | 7083 | 7096 | 7108 | 7120 | 7133 | 7145 | 7157 | 7169 | 7181 | 2 | 4 | 6 | 8 | 10 |
| 46 | .7193 | 7206 | 7218 | 7230 | 7242 | 7254 | 7266 | 7278 | 7290 | 7302 | 2 | 4 | 6 | 8 | 10 |
| 47 | .7314 | 7325 | 7337 | 7349 | 7361 | 7373 | 7385 | 7396 | 7408 | 7420 | 2 | 4 | 6 | 8 | 10 |
| 48 | .7431 | 7443 | 7455 | 7466 | 7478 | 7490 | 7501 | 7513 | 7524 | 7536 | 2 | 4 | 6 | 8 | 10 |
| 49 | .7547 | 7559 | 7570 | 7581 | 7593 | 7604 | 7615 | 7627 | 7638 | 7649 | 2 | 4 | 6 | 8 | 9 |
| 50 | .7660 | 7672 | 7683 | 7694 | 7705 | 7716 | 7727 | 7738 | 7749 | 7760 | 2 | 4 | 6 | 7 | 9 |
| 51 | .7771 | 7782 | 7793 | 7804 | 7815 | 7826 | 7837 | 7848 | 7859 | 7869 | 2 | 4 | 5 | 7 | 9 |
| 52 | .7880 | 7891 | 7902 | 7912 | 7923 | 7934 | 7944 | 7955 | 7965 | 7976 | 2 | 4 | 5 | 7 | 9 |
| 53 | .7986 | 7997 | 8007 | 8018 | 8028 | 8039 | 8049 | 8059 | 8070 | 8080 | 2 | 3 | 5 | 7 | 9 |
| 54 | .8090 | 8100 | 8111 | 8121 | 8131 | 8141 | 8151 | 8161 | 8171 | 8181 | 2 | 3 | 5 | 7 | 8 |
| 55 | .8192 | 8202 | 8211 | 8221 | 8231 | 8241 | 8251 | 8261 | 8271 | 8281 | 2 | 3 | 5 | 7 | 8 |
| 56 | .8290 | 8300 | 8310 | 8320 | 8329 | 8339 | 8348 | 8358 | 8368 | 8377 | 2 | 3 | 5 | 6 | 8 |
| 57 | .8387 | 8396 | 8406 | 8415 | 8425 | 8434 | 8443 | 8453 | 8462 | 8471 | 2 | 3 | 5 | 6 | 8 |
| 58 | .8480 | 8490 | 8499 | 8508 | 8517 | 8526 | 8536 | 8545 | 8554 | 8563 | 2 | 3 | 5 | 6 | 8 |
| 59 | .8572 | 8581 | 8590 | 8599 | 8607 | 8616 | 8625 | 8634 | 8643 | 8652 | 1 | 3 | 4 | 6 | 7 |
| 60 | .8660 | 8669 | 8678 | 8686 | 8695 | 8704 | 8712 | 8721 | 8729 | 8738 | 1 | 3 | 4 | 6 | 7 |
| 61 | .8746 | 8755 | 8763 | 8771 | 8780 | 8788 | 8796 | 8805 | 8813 | 8821 | 1 | 3 | 4 | 6 | 7 |
| 62 | .8829 | 8838 | 8846 | 8854 | 8862 | 8870 | 8878 | 8886 | 8894 | 8902 | 1 | 3 | 4 | 5 | 7 |
| 63 | .8910 | 8918 | 8926 | 8934 | 8942 | 8949 | 8957 | 8965 | 8973 | 8980 | 1 | 3 | 4 | 5 | 6 |
| 64 | .8988 | 8996 | 9003 | 9011 | 9018 | 9026 | 9033 | 9041 | 9048 | 9056 | 1 | 3 | 4 | 5 | 6 |
| 65 | .9063 | 9070 | 9078 | 9085 | 9092 | 9100 | 9107 | 9114 | 9121 | 9128 | 1 | 2 | 4 | 5 | 6 |
| 66 | .9135 | 9143 | 9150 | 9157 | 9164 | 9171 | 9178 | 9184 | 9191 | 9198 | 1 | 2 | 3 | 5 | 6 |
| 67 | .9205 | 9212 | 9219 | 9225 | 9232 | 9239 | 9245 | 9252 | 9259 | 9265 | 1 | 2 | 3 | 4 | 6 |
| 68 | .9272 | 9278 | 9285 | 9291 | 9298 | 9304 | 9311 | 9317 | 9323 | 9330 | 1 | 2 | 3 | 4 | 5 |
| 69 | .9336 | 9342 | 9348 | 9354 | 9361 | 9367 | 9373 | 9379 | 9385 | 9391 | 1 | 2 | 3 | 4 | 5 |
| 70 | .9397 | 9403 | 9409 | 9415 | 9421 | 9426 | 9432 | 9438 | 9444 | 9449 | 1 | 2 | 3 | 4 | 5 |
| 71 | .9455 | 9461 | 9466 | 9472 | 9478 | 9483 | 9489 | 9494 | 9500 | 9505 | 1 | 2 | 3 | 4 | 5 |
| 72 | .9511 | 9516 | 9521 | 9527 | 9532 | 9537 | 9542 | 9548 | 9553 | 9558 | 1 | 2 | 3 | 4 | 4 |
| 73 | .9563 | 9568 | 9573 | 9578 | 9583 | 9588 | 9593 | 9598 | 9603 | 9608 | 1 | 2 | 2 | 3 | 4 |
| 74 | .9613 | 9617 | 9622 | 9627 | 9632 | 9636 | 9641 | 9646 | 9650 | 9655 | 1 | 2 | 2 | 3 | 4 |
| 75 | .9659 | 9664 | 9668 | 9673 | 9677 | 9681 | 9686 | 9690 | 9694 | 9699 | 1 | 1 | 2 | 3 | 4 |
| 76 | .9703 | 9707 | 9711 | 9715 | 9720 | 9724 | 9728 | 9732 | 9736 | 9740 | 1 | 1 | 2 | 3 | 3 |
| 77 | .9744 | 9748 | 9751 | 9755 | 9759 | 9763 | 9767 | 9770 | 9774 | 9778 | 1 | 1 | 2 | 3 | 3 |
| 78 | .9781 | 9785 | 9789 | 9792 | 9796 | 9799 | 9803 | 9806 | 9810 | 9813 | 1 | 1 | 2 | 2 | 3 |
| 79 | .9816 | 9820 | 9823 | 9826 | 9829 | 9833 | 9836 | 9839 | 9842 | 9845 | 1 | 1 | 2 | 2 | 3 |
| 80 | .9848 | 9851 | 9854 | 9857 | 9860 | 9863 | 9866 | 9869 | 9871 | 9874 | 0 | 1 | 1 | 2 | 2 |
| 81 | .9877 | 9880 | 9882 | 9885 | 9888 | 9890 | 9893 | 9895 | 9898 | 9900 | 0 | 1 | 1 | 2 | 2 |
| 82 | .9903 | 9905 | 9907 | 9910 | 9912 | 9914 | 9917 | 9919 | 9921 | 9923 | 0 | 1 | 1 | 2 | 2 |
| 83 | .9925 | 9928 | 9930 | 9932 | 9934 | 9936 | 9938 | 9940 | 9942 | 9943 | 0 | 1 | 1 | 1 | 2 |
| 84 | .9945 | 9947 | 9949 | 9951 | 9952 | 9954 | 9956 | 9957 | 9959 | 9960 | 0 | 1 | 1 | 1 | 1 |
| 85 | .9962 | 9963 | 9965 | 9966 | 9968 | 9969 | 9971 | 9972 | 9973 | 9974 | 0 | 0 | 1 | 1 | 1 |
| 86 | .9976 | 9977 | 9978 | 9979 | 9980 | 9981 | 9982 | 9983 | 9984 | 9985 | 0 | 0 | 1 | 1 | 1 |
| 87 | .9986 | 9987 | 9988 | 9989 | 9990 | 9990 | 9991 | 9992 | 9993 | 9993 | | | | | |
| 88 | .9994 | 9995 | 9995 | 9996 | 9996 | 9997 | 9997 | 9997 | 9998 | 9998 | | | | | |
| 89 | .9998 | 9999 | 9999 | 9999 | 999 | | | | | | | | | | |

Table of natural cosines for page 8, showing values from 0° to 44° in 1-degree increments. Columns include degrees, minutes (0' to 54'), and seconds (1' to 5').

The black type indicates that the integer changes.

SUBTRACT

NATURAL COSINES.

Table of natural cosines for page 9, showing values from 45° to 89° in 1-degree increments. Columns include degrees, minutes (0' to 54'), and seconds (1' to 5').

NATURAL COSINES.

SUBTRACT

| | 0' | 6' | 12' | 18' | 24' | 30' | 36' | 42' | 48' | 54' | 1' | 2' | 3' | 4' | 5' |
|----|--------|------|------|------|------|------|------|------|------|------|----|----|----|----|----|
| 0° | 0.0000 | 0017 | 0035 | 0052 | 0070 | 0087 | 0105 | 0122 | 0140 | 0157 | 3 | 6 | 9 | 12 | 15 |
| 1 | 0.0175 | 0192 | 0209 | 0227 | 0244 | 0262 | 0279 | 0297 | 0314 | 0332 | 3 | 6 | 9 | 12 | 15 |
| 2 | 0.0349 | 0367 | 0384 | 0402 | 0419 | 0437 | 0454 | 0472 | 0489 | 0507 | 3 | 6 | 9 | 12 | 15 |
| 3 | 0.0524 | 0542 | 0559 | 0577 | 0594 | 0612 | 0629 | 0647 | 0664 | 0682 | 3 | 6 | 9 | 12 | 15 |
| 4 | 0.0699 | 0717 | 0734 | 0752 | 0769 | 0787 | 0805 | 0822 | 0840 | 0857 | 3 | 6 | 9 | 12 | 15 |
| 5 | 0.0875 | 0892 | 0910 | 0928 | 0945 | 0963 | 0981 | 0998 | 1016 | 1033 | 3 | 6 | 9 | 12 | 15 |
| 6 | 0.1051 | 1069 | 1086 | 1104 | 1122 | 1139 | 1157 | 1175 | 1192 | 1210 | 3 | 6 | 9 | 12 | 15 |
| 7 | 0.1228 | 1246 | 1263 | 1281 | 1299 | 1317 | 1334 | 1352 | 1370 | 1388 | 3 | 6 | 9 | 12 | 15 |
| 8 | 0.1405 | 1423 | 1441 | 1459 | 1477 | 1495 | 1512 | 1530 | 1548 | 1566 | 3 | 6 | 9 | 12 | 15 |
| 9 | 0.1584 | 1602 | 1620 | 1638 | 1655 | 1673 | 1691 | 1709 | 1727 | 1745 | 3 | 6 | 9 | 12 | 15 |
| 10 | 0.1763 | 1781 | 1799 | 1817 | 1835 | 1853 | 1871 | 1890 | 1908 | 1926 | 3 | 6 | 9 | 12 | 15 |
| 11 | 0.1944 | 1962 | 1980 | 1998 | 2016 | 2035 | 2053 | 2071 | 2089 | 2107 | 3 | 6 | 9 | 12 | 15 |
| 12 | 0.2126 | 2144 | 2162 | 2180 | 2199 | 2217 | 2235 | 2254 | 2272 | 2290 | 3 | 6 | 9 | 12 | 15 |
| 13 | 0.2309 | 2327 | 2345 | 2364 | 2382 | 2401 | 2419 | 2438 | 2456 | 2475 | 3 | 6 | 9 | 12 | 15 |
| 14 | 0.2493 | 2512 | 2530 | 2549 | 2568 | 2586 | 2605 | 2623 | 2642 | 2661 | 3 | 6 | 9 | 12 | 16 |
| 15 | 0.2679 | 2698 | 2717 | 2736 | 2754 | 2773 | 2792 | 2811 | 2830 | 2849 | 3 | 6 | 9 | 13 | 16 |
| 16 | 0.2867 | 2886 | 2905 | 2924 | 2943 | 2962 | 2981 | 3000 | 3019 | 3038 | 3 | 6 | 9 | 13 | 16 |
| 17 | 0.3057 | 3076 | 3096 | 3115 | 3134 | 3153 | 3172 | 3191 | 3211 | 3230 | 3 | 6 | 10 | 13 | 16 |
| 18 | 0.3249 | 3269 | 3288 | 3307 | 3327 | 3346 | 3365 | 3385 | 3404 | 3424 | 3 | 6 | 10 | 13 | 16 |
| 19 | 0.3443 | 3463 | 3482 | 3502 | 3522 | 3541 | 3561 | 3581 | 3600 | 3620 | 3 | 7 | 10 | 13 | 16 |
| 20 | 0.3640 | 3659 | 3679 | 3699 | 3719 | 3739 | 3759 | 3779 | 3799 | 3819 | 3 | 7 | 10 | 13 | 17 |
| 21 | 0.3839 | 3859 | 3879 | 3899 | 3919 | 3939 | 3959 | 3979 | 4000 | 4020 | 3 | 7 | 10 | 13 | 17 |
| 22 | 0.4040 | 4061 | 4081 | 4101 | 4122 | 4142 | 4163 | 4183 | 4204 | 4224 | 3 | 7 | 10 | 14 | 17 |
| 23 | 0.4245 | 4265 | 4286 | 4307 | 4327 | 4348 | 4369 | 4390 | 4411 | 4431 | 3 | 7 | 10 | 14 | 17 |
| 24 | 0.4452 | 4473 | 4494 | 4515 | 4536 | 4557 | 4578 | 4599 | 4621 | 4642 | 4 | 7 | 11 | 14 | 18 |
| 25 | 0.4663 | 4684 | 4706 | 4727 | 4748 | 4770 | 4791 | 4813 | 4834 | 4856 | 4 | 7 | 11 | 14 | 18 |
| 26 | 0.4877 | 4899 | 4921 | 4942 | 4964 | 4986 | 5008 | 5029 | 5051 | 5073 | 4 | 7 | 11 | 15 | 18 |
| 27 | 0.5095 | 5117 | 5139 | 5161 | 5184 | 5206 | 5228 | 5250 | 5272 | 5295 | 4 | 7 | 11 | 15 | 18 |
| 28 | 0.5317 | 5340 | 5362 | 5384 | 5407 | 5430 | 5452 | 5475 | 5498 | 5520 | 4 | 8 | 11 | 15 | 19 |
| 29 | 0.5543 | 5566 | 5589 | 5612 | 5635 | 5658 | 5681 | 5704 | 5727 | 5750 | 4 | 8 | 12 | 15 | 19 |
| 30 | 0.5774 | 5797 | 5820 | 5844 | 5867 | 5890 | 5914 | 5938 | 5961 | 5985 | 4 | 8 | 12 | 16 | 20 |
| 31 | 0.6009 | 6032 | 6056 | 6080 | 6104 | 6128 | 6152 | 6176 | 6200 | 6224 | 4 | 8 | 12 | 16 | 20 |
| 32 | 0.6249 | 6273 | 6297 | 6322 | 6346 | 6371 | 6395 | 6420 | 6445 | 6469 | 4 | 8 | 12 | 16 | 20 |
| 33 | 0.6494 | 6519 | 6544 | 6569 | 6594 | 6619 | 6644 | 6669 | 6694 | 6720 | 4 | 8 | 13 | 17 | 21 |
| 34 | 0.6745 | 6771 | 6796 | 6822 | 6847 | 6873 | 6899 | 6924 | 6950 | 6976 | 4 | 9 | 13 | 17 | 21 |
| 35 | 0.7002 | 7028 | 7054 | 7080 | 7107 | 7133 | 7159 | 7186 | 7212 | 7239 | 4 | 9 | 13 | 18 | 22 |
| 36 | 0.7265 | 7292 | 7319 | 7346 | 7373 | 7400 | 7427 | 7454 | 7481 | 7508 | 5 | 9 | 14 | 18 | 23 |
| 37 | 0.7536 | 7563 | 7590 | 7618 | 7646 | 7673 | 7701 | 7729 | 7757 | 7785 | 5 | 9 | 14 | 18 | 23 |
| 38 | 0.7813 | 7841 | 7869 | 7898 | 7926 | 7954 | 7983 | 8012 | 8040 | 8069 | 5 | 9 | 14 | 19 | 24 |
| 39 | 0.8098 | 8127 | 8156 | 8185 | 8214 | 8243 | 8273 | 8302 | 8332 | 8361 | 5 | 10 | 15 | 20 | 24 |
| 40 | 0.8391 | 8421 | 8451 | 8481 | 8511 | 8541 | 8571 | 8601 | 8632 | 8662 | 5 | 10 | 15 | 20 | 25 |
| 41 | 0.8693 | 8724 | 8754 | 8785 | 8816 | 8847 | 8878 | 8910 | 8941 | 8972 | 5 | 10 | 16 | 21 | 26 |
| 42 | 0.9004 | 9036 | 9067 | 9099 | 9131 | 9163 | 9195 | 9228 | 9260 | 9293 | 5 | 11 | 16 | 21 | 27 |
| 43 | 0.9325 | 9358 | 9391 | 9424 | 9457 | 9490 | 9523 | 9556 | 9590 | 9623 | 5 | 11 | 17 | 22 | 28 |
| 44 | 0.9657 | 9691 | 9725 | 9759 | 9793 | 9827 | 9861 | 9896 | 9930 | 9965 | 6 | 11 | 17 | 23 | 29 |

NATURAL TANGENTS.

Επιπλέον αν ελό τρομ 50 βρου, αέρυ γα πλάνουρη.

| | 0' | 6' | 12' | 18' | 24' | 30' | 36' | 42' | 48' | 54' | 1' | 2' | 3' | 4' | 5' |
|-----|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|-----|-----|-----|-----|
| 45° | 1.0000 | 0035 | 0070 | 0105 | 0141 | 0176 | 0212 | 0247 | 0283 | 0319 | 6 | 12 | 18 | 24 | 30 |
| 46 | 1.0355 | 0392 | 0428 | 0464 | 0501 | 0538 | 0575 | 0612 | 0649 | 0686 | 6 | 12 | 18 | 25 | 31 |
| 47 | 1.0724 | 0761 | 0799 | 0837 | 0875 | 0913 | 0951 | 0990 | 1028 | 1067 | 6 | 13 | 19 | 25 | 32 |
| 48 | 1.1106 | 1145 | 1184 | 1224 | 1263 | 1303 | 1343 | 1383 | 1423 | 1463 | 7 | 13 | 20 | 26 | 33 |
| 49 | 1.1504 | 1544 | 1585 | 1626 | 1667 | 1708 | 1750 | 1792 | 1833 | 1875 | 7 | 14 | 21 | 28 | 34 |
| 50 | 1.1918 | 1960 | 2002 | 2045 | 2088 | 2131 | 2174 | 2218 | 2261 | 2305 | 7 | 14 | 22 | 29 | 36 |
| 51 | 1.2349 | 2393 | 2437 | 2482 | 2527 | 2572 | 2617 | 2662 | 2708 | 2753 | 8 | 15 | 23 | 30 | 38 |
| 52 | 1.2799 | 2846 | 2892 | 2938 | 2985 | 3032 | 3079 | 3127 | 3175 | 3222 | 8 | 16 | 24 | 31 | 39 |
| 53 | 1.3270 | 3319 | 3367 | 3416 | 3465 | 3514 | 3564 | 3613 | 3663 | 3713 | 8 | 16 | 25 | 33 | 41 |
| 54 | 1.3764 | 3814 | 3865 | 3916 | 3968 | 4019 | 4071 | 4124 | 4176 | 4229 | 9 | 17 | 26 | 34 | 43 |
| 55 | 1.4281 | 4335 | 4388 | 4442 | 4496 | 4550 | 4605 | 4659 | 4715 | 4770 | 9 | 18 | 27 | 36 | 45 |
| 56 | 1.4826 | 4882 | 4938 | 4994 | 5051 | 5108 | 5166 | 5224 | 5282 | 5340 | 10 | 19 | 29 | 38 | 48 |
| 57 | 1.5399 | 5458 | 5517 | 5577 | 5637 | 5697 | 5757 | 5818 | 5880 | 5941 | 10 | 20 | 30 | 40 | 50 |
| 58 | 1.6003 | 6066 | 6128 | 6191 | 6255 | 6319 | 6383 | 6447 | 6512 | 6577 | 11 | 21 | 32 | 43 | 53 |
| 59 | 1.6643 | 6709 | 6775 | 6842 | 6909 | 6977 | 7045 | 7113 | 7182 | 7251 | 11 | 23 | 34 | 45 | 56 |
| 60 | 1.7321 | 7391 | 7461 | 7532 | 7603 | 7675 | 7747 | 7820 | 7893 | 7966 | 12 | 24 | 36 | 48 | 60 |
| 61 | 1.8040 | 8115 | 8190 | 8265 | 8341 | 8418 | 8495 | 8572 | 8650 | 8728 | 13 | 26 | 38 | 51 | 64 |
| 62 | 1.8807 | 8887 | 8967 | 9047 | 9128 | 9210 | 9292 | 9375 | 9458 | 9542 | 14 | 27 | 41 | 55 | 68 |
| 63 | 1.9626 | 9711 | 9797 | 9883 | 9970 | 0057 | 0145 | 0233 | 0323 | 0413 | 15 | 29 | 44 | 58 | 73 |
| 64 | 2.0503 | 0594 | 0686 | 0778 | 0872 | 0965 | 1060 | 1155 | 1251 | 1348 | 16 | 31 | 47 | 63 | 78 |
| 65 | 2.1445 | 1543 | 1642 | 1742 | 1842 | 1943 | 2045 | 2148 | 2251 | 2355 | 17 | 34 | 51 | 68 | 85 |
| 66 | 2.2460 | 2566 | 2673 | 2781 | 2889 | 2998 | 3109 | 3220 | 3332 | 3445 | 18 | 37 | 55 | 73 | 91 |
| 67 | 2.3559 | 3673 | 3789 | 3906 | 4023 | 4142 | 4262 | 4383 | 4504 | 4627 | 20 | 40 | 60 | 79 | 99 |
| 68 | 2.4751 | 4876 | 5002 | 5129 | 5257 | 5386 | 5517 | 5649 | 5782 | 5916 | 22 | 43 | 65 | 87 | 108 |
| 69 | 2.6051 | 6187 | 6325 | 6464 | 6605 | 6746 | 6889 | 7034 | 7179 | 7326 | 24 | 47 | 71 | 95 | 119 |
| 70 | 2.7475 | 7625 | 7776 | 7929 | 8083 | 8239 | 8397 | 8556 | 8716 | 8878 | 26 | 52 | 78 | 104 | 130 |
| 71 | 2.9042 | 9208 | 9375 | 9544 | 9714 | 9887 | 0061 | 0237 | 0415 | 0595 | 29 | 58 | 87 | 116 | 144 |
| 72 | 3.0777 | 0961 | 1146 | 1334 | 1524 | 1716 | 1910 | 2106 | 2305 | 2506 | 32 | 64 | 97 | 129 | 161 |
| 73 | 3.2709 | 2914 | 3122 | 3332 | 3544 | 3759 | 3977 | 4197 | 4420 | 4646 | 36 | 72 | 108 | 144 | 180 |
| 74 | 3.4874 | 5105 | 5339 | 5576 | 5816 | 6059 | 6305 | 6554 | 6806 | 7062 | 41 | 81 | 122 | 163 | 203 |
| 75 | 3.7321 | 7583 | 7848 | 8118 | 8391 | 8667 | 8947 | 9232 | 9520 | 9812 | 46 | 93 | 139 | 186 | 232 |
| 76 | 4.0108 | 0408 | 0713 | 1022 | 1335 | 1653 | 1976 | 2303 | 2635 | 2972 | 53 | 107 | 160 | 214 | 267 |
| 77 | 4.3315 | 3662 | 4015 | 4373 | 4737 | 5107 | 5483 | 5864 | 6252 | 6646 | 62 | 124 | 186 | 248 | 310 |
| 78 | 4.7046 | 7453 | 7867 | 8288 | 8716 | 9152 | 9594 | 0045 | 0504 | 0970 | 73 | 146 | 220 | 293 | 366 |
| 79 | 5.1446 | 1929 | 2422 | 2924 | 3435 | 3955 | 4486 | 5026 | 5578 | 6140 | 87 | 175 | 263 | 350 | 438 |
| 80 | 5.671 | 5.730 | 5.789 | 5.850 | 5.912 | 5.976 | 6.041 | 6.107 | 6.174 | 6.243 | | | | | |
| 81 | 6.314 | 6.386 | 6.460 | 6.535 | 6.612 | 6.691 | 6.772 | 6.855 | 6.940 | 7.026 | | | | | |
| 82 | 7.115 | 7.207 | 7.300 | 7.396 | 7.495 | 7.596 | 7.700 | 7.806 | 7.916 | 8.028 | | | | | |
| 83 | 8.144 | 8.264 | 8.386 | 8.513 | 8.643 | 8.777 | 8.915 | 9.058 | 9.205 | 9.357 | | | | | |
| 84 | 9.51 | 9.68 | 9.84 | 10.02 | 10.20 | 10.39 | 10.58 | 10.78 | 10.99 | 11.20 | | | | | |
| 85 | 11.43 | 11.66 | 11.91 | 12.16 | 12.43 | 12.71 | 13.00 | 13.30 | 1 | | | | | | |

κοινη ολιγα

Οι διαφοροι αν ελο ερον εο βρου δερι πα ρλινουηρι.

| | 0' | 6' | 12' | 18' | 24' | 30' | 36' | 42' | 48' | 54' | 1' 2' 3' 4' 5' | | | | |
|----|--------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------|-----|-----|-----|-----|
| 0° | ∞ | 573.0 | 286.5 | 191.0 | 143.2 | 114.6 | 95.49 | 81.85 | 71.62 | 63.66 | | | | | |
| 1 | 57.29 | 52.08 | 47.74 | 44.07 | 40.92 | 38.19 | 35.80 | 33.69 | 31.82 | 30.14 | | | | | |
| 2 | 28.64 | 27.27 | 26.03 | 24.90 | 23.86 | 22.90 | 22.02 | 21.20 | 20.45 | 19.74 | | | | | |
| 3 | 19.08 | 18.46 | 17.89 | 17.34 | 16.83 | 16.35 | 15.89 | 15.46 | 15.06 | 14.67 | | | | | |
| 4 | 14.30 | 13.95 | 13.62 | 13.30 | 13.00 | 12.71 | 12.43 | 12.16 | 11.91 | 11.66 | | | | | |
| 5 | 11.43 | 11.20 | 10.99 | 10.78 | 10.58 | 10.39 | 10.20 | 10.02 | 9.84 | 9.68 | | | | | |
| 6 | 9.514 | 9.357 | 9.205 | 9.058 | 8.915 | 8.777 | 8.643 | 8.513 | 8.386 | 8.264 | | | | | |
| 7 | 8.144 | 8.028 | 7.916 | 7.806 | 7.700 | 7.596 | 7.495 | 7.396 | 7.300 | 7.207 | | | | | |
| 8 | 7.115 | 7.026 | 6.940 | 6.855 | 6.772 | 6.691 | 6.612 | 6.535 | 6.460 | 6.386 | | | | | |
| 9 | 6.314 | 6.243 | 6.174 | 6.107 | 6.041 | 5.976 | 5.912 | 5.850 | 5.789 | 5.730 | | | | | |
| 10 | 5.6713 | 6.140 | 5.578 | 5.506 | 5.436 | 5.367 | 5.300 | 5.234 | 5.170 | 5.107 | 87 | 175 | 263 | 350 | 438 |
| 11 | 5.1446 | 0970 | 0504 | 0045 | 9594 | 9152 | 8716 | 8288 | 7867 | 7453 | 73 | 146 | 220 | 293 | 366 |
| 12 | 4.7046 | 6646 | 6252 | 5864 | 5483 | 5107 | 4737 | 4373 | 4015 | 3662 | 62 | 124 | 186 | 248 | 310 |
| 13 | 4.3315 | 2972 | 2635 | 2303 | 1976 | 1653 | 1335 | 1022 | 0713 | 0408 | 53 | 107 | 160 | 214 | 267 |
| 14 | 4.0108 | 9812 | 9520 | 9232 | 8947 | 8667 | 8391 | 8118 | 7848 | 7583 | 46 | 93 | 139 | 186 | 232 |
| 15 | 3.7321 | 7062 | 6806 | 6554 | 6305 | 6059 | 5816 | 5576 | 5339 | 5105 | 41 | 81 | 122 | 163 | 203 |
| 16 | 3.4874 | 4646 | 4420 | 4197 | 3977 | 3759 | 3544 | 3332 | 3122 | 2914 | 36 | 72 | 108 | 144 | 180 |
| 17 | 3.2709 | 2506 | 2305 | 2106 | 1910 | 1716 | 1524 | 1334 | 1146 | 0961 | 32 | 64 | 97 | 129 | 161 |
| 18 | 3.0777 | 0595 | 0415 | 0237 | 0061 | 9887 | 9714 | 9544 | 9375 | 9208 | 29 | 58 | 87 | 116 | 144 |
| 19 | 2.9042 | 8878 | 8716 | 8556 | 8397 | 8239 | 8083 | 7929 | 7776 | 7625 | 26 | 52 | 78 | 104 | 130 |
| 20 | 2.7475 | 7326 | 7179 | 7034 | 6889 | 6746 | 6605 | 6464 | 6325 | 6187 | 24 | 47 | 71 | 95 | 119 |
| 21 | 2.6051 | 5916 | 5782 | 5649 | 5517 | 5386 | 5257 | 5129 | 5002 | 4876 | 22 | 43 | 65 | 87 | 108 |
| 22 | 2.4751 | 4627 | 4504 | 4383 | 4262 | 4142 | 4023 | 3906 | 3789 | 3673 | 20 | 40 | 60 | 79 | 99 |
| 23 | 2.3559 | 3445 | 3332 | 3220 | 3109 | 2998 | 2889 | 2781 | 2673 | 2566 | 18 | 37 | 55 | 73 | 91 |
| 24 | 2.2460 | 2355 | 2251 | 2148 | 2045 | 1943 | 1842 | 1742 | 1642 | 1543 | 17 | 34 | 51 | 68 | 85 |
| 25 | 2.1445 | 1348 | 1251 | 1155 | 1060 | 0965 | 0872 | 0778 | 0686 | 0594 | 16 | 31 | 47 | 63 | 78 |
| 26 | 2.0503 | 0413 | 0323 | 0233 | 0145 | 0057 | 9970 | 9883 | 9797 | 9711 | 15 | 29 | 44 | 58 | 73 |
| 27 | 1.9626 | 9542 | 9458 | 9375 | 9292 | 9210 | 9128 | 9047 | 8967 | 8887 | 14 | 27 | 41 | 55 | 68 |
| 28 | 1.8807 | 8728 | 8650 | 8572 | 8495 | 8418 | 8341 | 8265 | 8190 | 8115 | 13 | 26 | 38 | 51 | 64 |
| 29 | 1.8040 | 7966 | 7893 | 7820 | 7747 | 7675 | 7603 | 7532 | 7461 | 7391 | 12 | 24 | 36 | 48 | 60 |
| 30 | 1.7321 | 7251 | 7182 | 7113 | 7045 | 6977 | 6909 | 6842 | 6775 | 6709 | 11 | 23 | 34 | 45 | 56 |
| 31 | 1.6643 | 6577 | 6512 | 6447 | 6383 | 6319 | 6255 | 6191 | 6128 | 6066 | 11 | 21 | 32 | 43 | 53 |
| 32 | 1.6003 | 5941 | 5880 | 5818 | 5757 | 5697 | 5637 | 5577 | 5517 | 5458 | 10 | 20 | 30 | 40 | 50 |
| 33 | 1.5399 | 5340 | 5282 | 5224 | 5166 | 5108 | 5051 | 4994 | 4938 | 4882 | 10 | 19 | 29 | 38 | 48 |
| 34 | 1.4826 | 4779 | 4715 | 4659 | 4605 | 4550 | 4496 | 4442 | 4388 | 4335 | 9 | 18 | 27 | 36 | 45 |
| 35 | 1.4281 | 4229 | 4176 | 4124 | 4071 | 4019 | 3968 | 3916 | 3865 | 3814 | 9 | 17 | 26 | 34 | 43 |
| 36 | 1.3764 | 3713 | 3663 | 3613 | 3564 | 3514 | 3465 | 3416 | 3367 | 3319 | 8 | 16 | 25 | 33 | 41 |
| 37 | 1.3270 | 3222 | 3175 | 3127 | 3079 | 3032 | 2985 | 2938 | 2892 | 2846 | 8 | 16 | 24 | 31 | 39 |
| 38 | 1.2799 | 2753 | 2708 | 2662 | 2617 | 2572 | 2527 | 2482 | 2437 | 2393 | 8 | 15 | 23 | 30 | 38 |
| 39 | 1.2349 | 2305 | 2261 | 2218 | 2174 | 2131 | 2088 | 2045 | 2002 | 1960 | 7 | 14 | 22 | 29 | 36 |
| 40 | 1.1918 | 1875 | 1833 | 1792 | 1750 | 1708 | 1667 | 1626 | 1585 | 1544 | 7 | 14 | 21 | 28 | 34 |
| 41 | 1.1504 | 1463 | 1423 | 1383 | 1343 | 1303 | 1263 | 1224 | 1184 | 1145 | 7 | 13 | 20 | 26 | 33 |
| 42 | 1.1106 | 1067 | 1028 | 0990 | 0951 | 0913 | 0875 | 0837 | 0799 | 0761 | 6 | 13 | 19 | 25 | 32 |
| 43 | 1.0724 | 0686 | 0649 | 0612 | 0575 | 0538 | 0501 | 0464 | 0428 | 0392 | 6 | 12 | 18 | 25 | 31 |
| 44 | 1.0355 | 0319 | 0283 | 0247 | 0212 | 0176 | 0141 | 0105 | 0070 | 0035 | 6 | 12 | 18 | 24 | 30 |

The black type indicates that the integer changes.
NATURAL COTANGENTS.

κοινη ολιγα

Οι διαφοροι αν ελο ερον εο βρου δερι πα ρλινουηρι.

Οι διαφοροι αν ελο ερον εο βρου δερι πα ρλινουηρι.

| | 0' | 6' | 12' | 18' | 24' | 30' | 36' | 42' | 48' | 54' | 1' | 2' | 3' | 4' | 5' |
|-----|--------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----|----|----|----|----|
| 45° | 1.0000 | 9965 | 9930 | 9896 | 9861 | 9827 | 9793 | 9759 | 9725 | 9691 | 6 | 11 | 17 | 23 | 29 |
| 46 | 0.9657 | 9623 | 9590 | 9556 | 9523 | 9490 | 9457 | 9424 | 9391 | 9358 | 6 | 11 | 17 | 22 | 28 |
| 47 | 0.9325 | 9293 | 9260 | 9228 | 9195 | 9163 | 9131 | 9099 | 9067 | 9036 | 5 | 11 | 16 | 21 | 27 |
| 48 | 0.9004 | 8972 | 8941 | 8910 | 8878 | 8847 | 8816 | 8785 | 8754 | 8724 | 5 | 10 | 16 | 21 | 26 |
| 49 | 0.8693 | 8662 | 8632 | 8601 | 8571 | 8541 | 8511 | 8481 | 8451 | 8421 | 5 | 10 | 15 | 20 | 25 |
| 50 | 0.8391 | 8361 | 8332 | 8302 | 8273 | 8243 | 8214 | 8185 | 8156 | 8127 | 5 | 10 | 15 | 20 | 24 |
| 51 | 0.8098 | 8069 | 8040 | 8012 | 7983 | 7954 | 7926 | 7898 | 7869 | 7841 | 5 | 9 | 14 | 19 | 24 |
| 52 | 0.7813 | 7785 | 7757 | 7729 | 7701 | 7673 | 7646 | 7618 | 7590 | 7563 | 5 | 9 | 14 | 18 | 23 |
| 53 | 0.7536 | 7508 | 7481 | 7454 | 7427 | 7400 | 7373 | 7346 | 7319 | 7292 | 5 | 9 | 14 | 18 | 23 |
| 54 | 0.7265 | 7239 | 7212 | 7186 | 7159 | 7133 | 7107 | 7080 | 7054 | 7028 | 4 | 9 | 13 | 18 | 22 |
| 55 | 0.7002 | 6976 | 6950 | 6924 | 6899 | 6873 | 6847 | 6822 | 6796 | 6771 | 4 | 9 | 13 | 17 | 21 |
| 56 | 0.6745 | 6720 | 6694 | 6669 | 6644 | 6619 | 6594 | 6569 | 6544 | 6519 | 4 | 8 | 13 | 17 | 21 |
| 57 | 0.6494 | 6469 | 6445 | 6420 | 6395 | 6371 | 6346 | 6322 | 6297 | 6273 | 4 | 8 | 12 | 16 | 20 |
| 58 | 0.6249 | 6224 | 6200 | 6176 | 6152 | 6128 | 6104 | 6080 | 6056 | 6032 | 4 | 8 | 12 | 16 | 20 |
| 59 | 0.6009 | 5985 | 5961 | 5938 | 5914 | 5890 | 5867 | 5844 | 5820 | 5797 | 4 | 8 | 12 | 16 | 20 |
| 60 | 0.5774 | 5750 | 5727 | 5704 | 5681 | 5658 | 5635 | 5612 | 5589 | 5566 | 4 | 8 | 12 | 15 | 19 |
| 61 | 0.5543 | 5520 | 5498 | 5475 | 5452 | 5430 | 5407 | 5384 | 5362 | 5340 | 4 | 8 | 11 | 15 | 19 |
| 62 | 0.5317 | 5295 | 5272 | 5250 | 5228 | 5206 | 5184 | 5161 | 5139 | 5117 | 4 | 7 | 11 | 15 | 18 |
| 63 | 0.5095 | 5073 | 5051 | 5029 | 5008 | 4986 | 4964 | 4942 | 4921 | 4899 | 4 | 7 | 11 | 15 | 18 |
| 64 | 0.4877 | 4856 | 4834 | 4813 | 4791 | 4770 | 4748 | 4727 | 4706 | 4684 | 4 | 7 | 11 | 14 | 18 |
| 65 | 0.4663 | 4642 | 4621 | 4599 | 4578 | 4557 | 4536 | 4515 | 4494 | 4473 | 4 | 7 | 11 | 14 | 18 |
| 66 | 0.4452 | 4431 | 4411 | 4390 | 4369 | 4348 | 4327 | 4307 | 4286 | 4265 | 3 | 7 | 10 | 14 | 17 |
| 67 | 0.4245 | 4224 | 4204 | 4183 | 4163 | 4142 | 4122 | 4101 | 4081 | 4061 | 3 | 7 | 10 | 14 | 17 |
| 68 | 0.4040 | 4020 | 4000 | 3979 | 3959 | 3939 | 3919 | 3899 | 3879 | 3859 | 3 | 7 | 10 | 13 | 17 |
| 69 | 0.3839 | 3819 | 3799 | 3779 | 3759 | 3739 | 3719 | 3699 | 3679 | 3659 | 3 | 7 | 10 | 13 | 17 |
| 70 | 0.3640 | 3620 | 3600 | 3581 | 3561 | 3541 | 3522 | 3502 | 3482 | 3463 | 3 | 7 | 10 | 13 | 16 |
| 71 | 0.3443 | 3424 | 3404 | 3385 | 3365 | 3346 | 3327 | 3307 | 3288 | 3269 | 3 | 6 | 10 | 13 | 16 |
| 72 | 0.3249 | 3230 | 3211 | 3191 | 3172 | 3153 | 3134 | 3115 | 3096 | 3076 | 3 | 6 | 10 | 13 | 16 |
| 73 | 0.3057 | 3038 | 3019 | 3000 | 2981 | 2962 | 2943 | 2924 | 2905 | 2886 | 3 | 6 | 9 | 13 | 16 |
| 74 | 0.2867 | 2849 | 2830 | 2811 | 2792 | 2773 | 2754 | 2736 | 2717 | 2698 | 3 | 6 | 9 | 13 | 16 |
| 7 | | | | | | | | | | | | | | | |

TEASCATTE

Table of Natural Secants for page 14, showing values from 0' to 54' in 6' increments, with columns for 1', 2', 3', 4', and 5'.

NATURAL SECANTS.

TEASCATTE

Επιπλέον αν ελό επον σο δευιλ δευί τα πλάνημη.

Table of Natural Secants for page 15, showing values from 0' to 54' in 6' increments, with columns for 1', 2', 3', 4', and 5'. Includes a note in Greek and English about integer changes.

The black type indicates that the integer changes.

NATURAL SECANTS.

comteascaite

Cιλλαίονη αν ελό τρομ εο βρην δέμυ πα πλάνημην.

Table of natural cosecants for page 16, showing values from 0' to 54' and differences.

The black type indicates that the integer changes.

NATURAL COSECANTS.

comteascaite

Dealai.

Table of natural cosecants for page 17, showing values from 45 degrees to 89 degrees and differences.

NATURAL COSECANTS.

SUBTRACT

ΛΟΓΑΡΤΑΙΜ ΣΙΝΕΑΣ

Σημειώσεις: Διπλασιασμοί και διόρθωσεις στο δεξί μέρος για την ακρίβεια.

Table of logarithmic sines for page 18, showing values for angles from 0° to 44° in 1' increments. Columns include angle, sine values, and integer change indicators.

The black type indicates that the integer changes.

LOG. SINES.

ΛΟΓΑΡΤΑΙΜ ΣΙΝΕΑΣ

Σημειώσεις: Διπλασιασμοί και διόρθωσεις στο δεξί μέρος για την ακρίβεια.

Table of logarithmic sines for page 19, showing values for angles from 45° to 89° in 1' increments. Columns include angle, sine values, and integer change indicators.

The black type indicates that the integer changes.

LOG. SINES.

ΛΟΓΑΡΤΑΙΜ **ὀμῶσῖνεα**

Ὁλοκλήρωμα ἀπὸ τοῦ ἑξῆς ἕως ἑξακλισημίου.

Ὁλοκλήρωμα.

Table of Logarithmic Cosines for page 20, showing values from 0° to 44° in columns 0' to 54' and rows 1' to 5'.

The black type indicates that the integer changes.

LOG. COSINES.

SUBTRACT

ΛΟΓΑΡΤΑΙΜ **ὀμῶσῖνεα**

Ὁλοκλήρωμα ἀπὸ τοῦ ἑξῆς ἕως ἑξακλισημίου.

Ὁλοκλήρωμα.

Table of Logarithmic Cosines for page 21, showing values from 45° to 89° in columns 0' to 54' and rows 1' to 5'.

The black type indicates that the integer changes.

LOG. COSINES.

SUBTRACT

τὴν ἰσότητά τοῦ ἀπὸ τῆς ἀκριβοῦς ἀναγραφῆς. Differences untrustworthy here.

Table of logarithmic tangents for angles 0 to 44 degrees. Columns include minutes (0' to 54') and seconds (1' to 5'). Values are listed in a grid format with some integers in black.

The black type indicates that the integer changes.

LOG. TANGENTS.

Table of logarithmic tangents for angles 45 to 89 degrees. Columns include minutes (0' to 54') and seconds (1' to 5'). Values are listed in a grid format with some integers in black. A note at the bottom right states: 'Differences untrustworthy here.'

The black type indicates that the integer changes.

LOG. TANGENTS.

Table of Log Cotangents for page 24. Columns include angles from 0' to 54' and values for subtraction (1' to 5').

The black type indicates that the integer changes.

LOG. COTANGENTS.

SUBTRACT

Table of Log Cotangents for page 25. Columns include angles from 0' to 54' and values for subtraction (1' to 5').

The black type indicates that the integer changes.

LOG. COTANGENTS.

SUBTRACT

ηί ηιονταοιβ ιαο να
υεηρηόεταί ανρεο.
Differences
untrustworthy here.

| | 0' | 6' | 12' | 18' | 24' | 30' | 36' | 42' | 48' | 54' | 1' | 2' | 3' | 4' | 5' |
|----|--------|------|------|------|------|------|------|------|------|------|----|----|----|----|----|
| 0° | 0.0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0001 | | | | | |
| 1 | 0.0001 | 0001 | 0001 | 0001 | 0001 | 0001 | 0002 | 0002 | 0002 | 0002 | | | | | |
| 2 | 0.0003 | 0003 | 0003 | 0003 | 0004 | 0004 | 0004 | 0005 | 0005 | 0006 | | | | | |
| 3 | 0.0006 | 0006 | 0007 | 0007 | 0008 | 0008 | 0009 | 0009 | 0010 | 0010 | | | | | |
| 4 | 0.0011 | 0011 | 0012 | 0012 | 0013 | 0013 | 0014 | 0015 | 0015 | 0016 | | | | | |
| 5 | 0.0017 | 0017 | 0018 | 0019 | 0019 | 0020 | 0021 | 0022 | 0022 | 0023 | | | | | |
| 6 | 0.0024 | 0025 | 0025 | 0026 | 0027 | 0028 | 0029 | 0030 | 0031 | 0032 | | | | | |
| 7 | 0.0032 | 0033 | 0034 | 0035 | 0036 | 0037 | 0038 | 0039 | 0040 | 0041 | | | | | |
| 8 | 0.0042 | 0044 | 0045 | 0046 | 0047 | 0048 | 0049 | 0050 | 0051 | 0053 | 0 | 0 | 0 | 1 | 1 |
| 9 | 0.0054 | 0055 | 0056 | 0057 | 0059 | 0060 | 0061 | 0063 | 0064 | 0065 | 0 | 0 | 1 | 1 | 1 |
| 10 | 0.0066 | 0068 | 0069 | 0071 | 0072 | 0073 | 0075 | 0076 | 0078 | 0079 | 0 | 0 | 1 | 1 | 1 |
| 11 | 0.0081 | 0082 | 0084 | 0085 | 0087 | 0088 | 0090 | 0091 | 0093 | 0094 | 0 | 1 | 1 | 1 | 1 |
| 12 | 0.0096 | 0098 | 0099 | 0101 | 0103 | 0104 | 0106 | 0108 | 0109 | 0111 | 0 | 1 | 1 | 1 | 1 |
| 13 | 0.0113 | 0115 | 0116 | 0118 | 0120 | 0122 | 0124 | 0125 | 0127 | 0129 | 0 | 1 | 1 | 1 | 2 |
| 14 | 0.0131 | 0133 | 0135 | 0137 | 0139 | 0141 | 0143 | 0145 | 0147 | 0149 | 0 | 1 | 1 | 1 | 2 |
| 15 | 0.0151 | 0153 | 0155 | 0157 | 0159 | 0161 | 0163 | 0165 | 0167 | 0169 | 0 | 1 | 1 | 1 | 2 |
| 16 | 0.0172 | 0174 | 0176 | 0178 | 0180 | 0183 | 0185 | 0187 | 0189 | 0192 | 0 | 1 | 1 | 1 | 2 |
| 17 | 0.0194 | 0196 | 0199 | 0201 | 0203 | 0206 | 0208 | 0211 | 0213 | 0215 | 0 | 1 | 1 | 2 | 2 |
| 18 | 0.0218 | 0220 | 0223 | 0225 | 0228 | 0230 | 0233 | 0236 | 0238 | 0241 | 0 | 1 | 1 | 2 | 2 |
| 19 | 0.0243 | 0246 | 0249 | 0251 | 0254 | 0257 | 0259 | 0262 | 0265 | 0267 | 0 | 1 | 1 | 2 | 2 |
| 20 | 0.0270 | 0273 | 0276 | 0278 | 0281 | 0284 | 0287 | 0290 | 0293 | 0296 | 0 | 1 | 1 | 2 | 2 |
| 21 | 0.0298 | 0301 | 0304 | 0307 | 0310 | 0313 | 0316 | 0319 | 0322 | 0325 | 0 | 1 | 1 | 2 | 2 |
| 22 | 0.0328 | 0331 | 0334 | 0338 | 0341 | 0344 | 0347 | 0350 | 0353 | 0357 | 1 | 1 | 2 | 2 | 3 |
| 23 | 0.0360 | 0363 | 0366 | 0369 | 0373 | 0376 | 0379 | 0383 | 0386 | 0389 | 1 | 1 | 2 | 2 | 3 |
| 24 | 0.0393 | 0396 | 0399 | 0403 | 0406 | 0410 | 0413 | 0417 | 0420 | 0424 | 1 | 1 | 2 | 2 | 3 |
| 25 | 0.0427 | 0431 | 0434 | 0438 | 0442 | 0445 | 0449 | 0452 | 0456 | 0460 | 1 | 1 | 2 | 2 | 3 |
| 26 | 0.0463 | 0467 | 0471 | 0475 | 0478 | 0482 | 0486 | 0490 | 0494 | 0497 | 1 | 1 | 2 | 3 | 3 |
| 27 | 0.0501 | 0505 | 0509 | 0513 | 0517 | 0521 | 0525 | 0529 | 0533 | 0537 | 1 | 1 | 2 | 3 | 3 |
| 28 | 0.0541 | 0545 | 0549 | 0553 | 0557 | 0561 | 0565 | 0569 | 0573 | 0578 | 1 | 1 | 2 | 3 | 3 |
| 29 | 0.0582 | 0586 | 0590 | 0594 | 0599 | 0603 | 0607 | 0612 | 0616 | 0620 | 1 | 1 | 2 | 3 | 4 |
| 30 | 0.0625 | 0629 | 0633 | 0638 | 0642 | 0647 | 0651 | 0656 | 0660 | 0665 | 1 | 1 | 2 | 3 | 4 |
| 31 | 0.0669 | 0674 | 0678 | 0683 | 0688 | 0692 | 0697 | 0702 | 0706 | 0711 | 1 | 2 | 2 | 3 | 4 |
| 32 | 0.0716 | 0721 | 0725 | 0730 | 0735 | 0740 | 0745 | 0749 | 0754 | 0759 | 1 | 2 | 2 | 3 | 4 |
| 33 | 0.0764 | 0769 | 0774 | 0779 | 0784 | 0789 | 0794 | 0799 | 0804 | 0809 | 1 | 2 | 3 | 3 | 4 |
| 34 | 0.0814 | 0819 | 0825 | 0830 | 0835 | 0840 | 0845 | 0851 | 0856 | 0861 | 1 | 2 | 3 | 3 | 4 |
| 35 | 0.0866 | 0872 | 0877 | 0882 | 0888 | 0893 | 0899 | 0904 | 0909 | 0915 | 1 | 2 | 3 | 4 | 5 |
| 36 | 0.0920 | 0926 | 0931 | 0937 | 0943 | 0948 | 0954 | 0959 | 0965 | 0971 | 1 | 2 | 3 | 4 | 5 |
| 37 | 0.0977 | 0982 | 0988 | 0994 | 1000 | 1005 | 1011 | 1017 | 1023 | 1029 | 1 | 2 | 3 | 4 | 5 |
| 38 | 0.1035 | 1041 | 1047 | 1053 | 1059 | 1065 | 1071 | 1077 | 1083 | 1089 | 1 | 2 | 3 | 4 | 5 |
| 39 | 0.1095 | 1101 | 1107 | 1113 | 1120 | 1126 | 1132 | 1138 | 1145 | 1151 | 1 | 2 | 3 | 4 | 5 |
| 40 | 0.1157 | 1164 | 1170 | 1177 | 1183 | 1190 | 1196 | 1203 | 1209 | 1216 | 1 | 2 | 3 | 4 | 5 |
| 41 | 0.1222 | 1229 | 1235 | 1242 | 1249 | 1255 | 1262 | 1269 | 1276 | 1282 | 1 | 2 | 3 | 4 | 6 |
| 42 | 0.1289 | 1296 | 1303 | 1310 | 1317 | 1324 | 1331 | 1338 | 1345 | 1352 | 1 | 2 | 3 | 5 | 6 |
| 43 | 0.1359 | 1366 | 1373 | 1380 | 1387 | 1394 | 1402 | 1409 | 1416 | 1423 | 1 | 2 | 4 | 5 | 6 |
| 44 | 0.1431 | 1438 | 1445 | 1453 | 1460 | 1468 | 1475 | 1483 | 1490 | 1498 | 1 | 2 | 4 | 5 | 6 |

LOG. SECANTS.

Επιπλέον αν ελό τρομ ζο θυριλ αέρη γα πλάνουρη.

| | 0' | 6' | 12' | 18' | 24' | 30' | 36' | 42' | 48' | 54' | 1' | 2' | 3' | 4' | 5' |
|-----|--------|------|------|------|------|------|------|------|------|------|----|----|----|----|-----|
| 45° | 0.1505 | 1513 | 1520 | 1528 | 1536 | 1543 | 1551 | 1559 | 1567 | 1574 | 1 | 3 | 4 | 5 | 6 |
| 46 | 0.1582 | 1590 | 1598 | 1606 | 1614 | 1622 | 1630 | 1638 | 1646 | 1654 | 1 | 3 | 4 | 5 | 7 |
| 47 | 0.1662 | 1670 | 1678 | 1687 | 1695 | 1703 | 1711 | 1720 | 1728 | 1736 | 1 | 3 | 4 | 6 | 7 |
| 48 | 0.1745 | 1753 | 1762 | 1770 | 1779 | 1787 | 1796 | 1805 | 1813 | 1822 | 1 | 3 | 4 | 6 | 7 |
| 49 | 0.1831 | 1839 | 1848 | 1857 | 1866 | 1875 | 1883 | 1892 | 1901 | 1910 | 1 | 3 | 4 | 6 | 7 |
| 50 | 0.1919 | 1928 | 1937 | 1947 | 1956 | 1965 | 1974 | 1983 | 1993 | 2002 | 1 | 3 | 4 | 6 | 8 |
| 51 | 0.2011 | 2021 | 2030 | 2040 | 2049 | 2059 | 2068 | 2078 | 2087 | 2097 | 2 | 3 | 5 | 6 | 8 |
| 52 | 0.2107 | 2116 | 2126 | 2136 | 2146 | 2156 | 2165 | 2175 | 2185 | 2195 | 2 | 3 | 5 | 7 | 8 |
| 53 | 0.2205 | 2215 | 2226 | 2236 | 2246 | 2256 | 2266 | 2277 | 2287 | 2297 | 2 | 3 | 5 | 7 | 9 |
| 54 | 0.2308 | 2318 | 2329 | 2339 | 2350 | 2360 | 2371 | 2382 | 2393 | 2403 | 2 | 4 | 5 | 7 | 9 |
| 55 | 0.2414 | 2425 | 2436 | 2447 | 2458 | 2469 | 2480 | 2491 | 2502 | 2513 | 2 | 4 | 6 | 7 | 9 |
| 56 | 0.2524 | 2536 | 2547 | 2558 | 2570 | 2581 | 2593 | 2604 | 2616 | 2627 | 2 | 4 | 6 | 8 | 10 |
| 57 | 0.2639 | 2651 | 2662 | 2674 | 2686 | 2698 | 2710 | 2722 | 2734 | 2746 | 2 | 4 | 6 | 8 | 10 |
| 58 | 0.2758 | 2770 | 2782 | 2795 | 2807 | 2819 | 2832 | 2844 | 2856 | 2869 | 2 | 4 | 6 | 8 | 10 |
| 59 | 0.2882 | 2894 | 2907 | 2920 | 2932 | 2945 | 2958 | 2971 | 2984 | 2997 | 2 | 4 | 6 | 9 | 11 |
| 60 | 0.3010 | 3023 | 3037 | 3050 | 3063 | 3077 | 3090 | 3104 | 3117 | 3131 | 2 | 4 | 7 | 9 | 11 |
| 61 | 0.3144 | 3158 | 3172 | 3186 | 3199 | 3213 | 3227 | 3241 | 3256 | 3270 | 2 | 5 | 7 | 9 | 12 |
| 62 | 0.3284 | 3298 | 3313 | 3327 | 3341 | 3356 | 3371 | 3385 | 3400 | 3415 | 2 | 5 | 7 | 10 | 12 |
| 63 | 0.3430 | 3444 | 3459 | 3474 | 3490 | 3505 | 3520 | 3535 | 3551 | 3566 | 3 | 5 | 8 | 10 | 13 |
| 64 | 0.3582 | 3597 | 3613 | 3629 | 3644 | 3660 | 3676 | 3692 | 3708 | 3724 | 3 | 5 | 8 | 11 | 13 |
| 65 | 0.3741 | 3757 | 3773 | 3790 | 3806 | 3823 | 3839 | 3856 | 3873 | 3890 | 3 | 6 | 8 | 11 | 14 |
| 66 | 0.3907 | 3924 | 3941 | 3958 | 3976 | 3993 | 4010 | 4028 | 4046 | 4063 | 3 | 6 | 9 | 12 | 15 |
| 67 | 0.4081 | 4099 | 4117 | 4135 | 4153 | 4172 | 4190 | 4208 | 4227 | 4246 | 3 | 6 | 9 | 12 | 15 |
| 68 | 0.4264 | 4283 | 4302 | 4321 | 4340 | 4359 | 4379 | 4398 | 4417 | 4437 | 3 | 6 | 10 | 13 | 16 |
| 69 | 0.4457 | 4477 | 4496 | 4516 | 4537 | 4557 | 4577 | 4598 | 4618 | 4639 | 3 | 7 | 10 | 14 | 17 |
| 70 | 0.4659 | 4680 | 4701 | 4722 | 4744 | 4765 | 4787 | 4808 | 4830 | 4852 | 4 | 7 | 11 | 14 | 18 |
| 71 | 0.4874 | 4896 | 4918 | 4940 | 4963 | 4985 | 5008 | 5031 | 5054 | 5077 | 4 | 8 | 11 | 15 | 19 |
| 72 | 0.5100 | 5124 | 5147 | 5171 | 5195 | 5219 | 5243 | 5267 | 5291 | 5316 | 4 | 8 | 12 | 16 | 20 |
| 73 | 0.5341 | 5366 | 5391 | 5416 | 5441 | 5467 | 5492 | 5518 | 5544 | 5570 | 4 | 9 | 13 | 17 | 21 |
| 74 | 0.5597 | 5623 | 5650 | 5677 | 5704 | 5731 | 5758 | 5786 | 5814 | 5842 | 5 | 9 | 14 | 18 | 23 |
| 75 | 0.5870 | 5898 | 5927 | 5956 | 5985 | 6014 | 6043 | 6073 | 6103 | 6133 | 5 | 10 | 15 | 20 | 24 |
| 76 | 0.6163 | 6194 | 6225 | 6255 | 6287 | 6318 | 6350 | 6382 | 6414 | 6446 | 5 | 11 | 16 | 21 | 26 |
| 77 | 0.6479 | 6512 | 6545 | 6579 | 6613 | 6647 | 6681 | 6716 | 6750 | 6786 | 6 | 11 | 17 | 23 | 28 |
| 78 | 0.6821 | 6857 | 6893 | 6930 | 6966 | 7003 | 7041 | 7079 | 7117 | 7155 | 6 | 12 | 19 | 25 | 31 |
| 79 | 0.7194 | 7233 | 7273 | 7313 | 7353 | 7394 | 7435 | 7476 | 7518 | 7561 | 7 | 14 | 20 | 27 | 34 |
| 80 | 0.7603 | 7647 | 7690 | 7734 | 7779 | 7824 | 7869 | 7915 | 7962 | 8009 | 8 | 15 | 23 | 30 | 38 |
| 81 | 0.8057 | 8105 | 8153 | 8203 | 8253 | 8303 | 8354 | 8406 | 8458 | 8511 | 8 | 17 | 25 | 34 | 43 |
| 82 | 0.8564 | 8619 | 8674 | 8729 | 8786 | 8843 | 8901 | 8960 | 9019 | 9080 | 10 | 19 | 29 | 38 | 48 |
| 83 | 0.9141 | 9203 | 9266 | 9330 | 9395 | 9461 | 9528 | 9597 | 9666 | 9736 | 11 | 22 | 33 | 44 | 55 |
| 84 | 0.9808 | 9880 | 9954 | 0030 | 0106 | 0184 | 0264 | 0345 | 0427 | 0511 | 13 | 26 | 39 | 52 | 66 |
| 85 | 1.0597 | 0685 | 0774 | 0865 | 0958 | 1054 | 1151 | 1251 | 1353 | 1457 | 16 | 32 | 48 | 64 | 80 |
| 86 | 1.1564 | 1674 | 1787 | 1902 | 2021 | 2143 | 2269 | 2398 | 2532 | 2670 | 21 | 41 | 62 | 83 | 103 |
| 87 | 1.2812 | 2959 | 3111 | 3269 | 3433 | 3603 | 3780 | 3965 | | | | | | | |

Table of Log. Cosecants for page 28, showing values for angles from 0 to 44 degrees. Columns include minutes (0' to 54') and seconds (1' to 5').

The black type indicates that the integer changes.

LOG. COSECANTS.

SUBTRACT

Table of Log. Cosecants for page 29, showing values for angles from 45 to 89 degrees. Columns include minutes (0' to 54') and seconds (1' to 5').

LOG. COSECANTS.

SUBTRACT

| | Gath. | ° | Gath. | ° | Gath. | | Gath. | | Gath. |
|----|--------|----|--------|----|--------|----|-------|----|-------|
| 0° | 0·0000 | 30 | 0·5236 | 60 | 1·0472 | 0 | ·0000 | 30 | ·0087 |
| 1 | 0·0175 | 31 | 0·5411 | 61 | 1·0647 | 1 | ·0003 | 31 | ·0090 |
| 2 | 0·0349 | 32 | 0·5585 | 62 | 1·0821 | 2 | ·0006 | 32 | ·0093 |
| 3 | 0·0524 | 33 | 0·5760 | 63 | 1·0996 | 3 | ·0009 | 33 | ·0096 |
| 4 | 0·0698 | 34 | 0·5935 | 64 | 1·1170 | 4 | ·0012 | 34 | ·0099 |
| 5 | 0·0873 | 35 | 0·6109 | 65 | 1·1345 | 5 | ·0015 | 35 | ·0102 |
| 6 | 0·1047 | 36 | 0·6283 | 66 | 1·1519 | 6 | ·0017 | 36 | ·0105 |
| 7 | 0·1222 | 37 | 0·6458 | 67 | 1·1694 | 7 | ·0020 | 37 | ·0108 |
| 8 | 0·1396 | 38 | 0·6632 | 68 | 1·1868 | 8 | ·0023 | 38 | ·0111 |
| 9 | 0·1571 | 39 | 0·6807 | 69 | 1·2043 | 9 | ·0026 | 39 | ·0113 |
| 10 | 0·1745 | 40 | 0·6981 | 70 | 1·2217 | 10 | ·0029 | 40 | ·0116 |
| 11 | 0·1920 | 41 | 0·7156 | 71 | 1·2392 | 11 | ·0032 | 41 | ·0119 |
| 12 | 0·2094 | 42 | 0·7330 | 72 | 1·2566 | 12 | ·0035 | 42 | ·0122 |
| 13 | 0·2269 | 43 | 0·7505 | 73 | 1·2741 | 13 | ·0038 | 43 | ·0125 |
| 14 | 0·2443 | 44 | 0·7679 | 74 | 1·2915 | 14 | ·0041 | 44 | ·0128 |
| 15 | 0·2618 | 45 | 0·7854 | 75 | 1·3090 | 15 | ·0044 | 45 | ·0131 |
| 16 | 0·2793 | 46 | 0·8029 | 76 | 1·3265 | 16 | ·0047 | 46 | ·0134 |
| 17 | 0·2967 | 47 | 0·8203 | 77 | 1·3439 | 17 | ·0049 | 47 | ·0137 |
| 18 | 0·3142 | 48 | 0·8378 | 78 | 1·3614 | 18 | ·0052 | 48 | ·0140 |
| 19 | 0·3316 | 49 | 0·8552 | 79 | 1·3788 | 19 | ·0055 | 49 | ·0143 |
| 20 | 0·3491 | 50 | 0·8727 | 80 | 1·3963 | 20 | ·0058 | 50 | ·0145 |
| 21 | 0·3665 | 51 | 0·8901 | 81 | 1·4137 | 21 | ·0061 | 51 | ·0148 |
| 22 | 0·3840 | 52 | 0·9076 | 82 | 1·4312 | 22 | ·0064 | 52 | ·0151 |
| 23 | 0·4014 | 53 | 0·9250 | 83 | 1·4486 | 23 | ·0067 | 53 | ·0154 |
| 24 | 0·4189 | 54 | 0·9425 | 84 | 1·4661 | 24 | ·0070 | 54 | ·0157 |
| 25 | 0·4363 | 55 | 0·9599 | 85 | 1·4835 | 25 | ·0073 | 55 | ·0160 |
| 26 | 0·4538 | 56 | 0·9774 | 86 | 1·5010 | 26 | ·0076 | 56 | ·0163 |
| 27 | 0·4712 | 57 | 0·9948 | 87 | 1·5184 | 27 | ·0079 | 57 | ·0166 |
| 28 | 0·4887 | 58 | 1·0122 | 88 | 1·5359 | 28 | ·0081 | 58 | ·0169 |
| 29 | 0·5061 | 59 | 1·0297 | 89 | 1·5533 | 29 | ·0084 | 59 | ·0172 |
| 30 | 0·5236 | 60 | 1·0472 | 90 | 1·5708 | 30 | ·0087 | 60 | ·0175 |
| | Rad. | | Rad. | | Rad. | | Rad. | | Rad. |

RADIANS AND DEGREES.

ΤΟΜΑΙΣΕΑΝΝΑ ΡΑΙΟ.

2,240 ΣΤΑΤ=ΜΙΛΕ ΣΑΕΛΑΕ.
 1,760 ΣΤΑΤ=ΜΙΛΕ ΡΕΑΕΤΑΕ.
 100 ΤΥΒ=ΣΤΑΒΡΑ.
 =22 ΣΤΑΤ.
 ΜΙΛΕ ΡΑΡΡΑΙΣΕ=1·152 ΜΙΛΕ.
 ΡΕΔ=·001 ΟΕ ΜΙΛΕ ΡΑΡΡΑΙΣΕ.
 ΣΙΛΟΜΕΑΥΑΡ=0·6214 ΟΕ ΜΙΛΕ.
 ΟΥΛΑΕ=2·540 ΣΕΝΤΙΜΕΑΥΑΡ.

ΤΟΜΑΙΣΕΑΝΝΑ ΤΟΙΛΕ.

8 ΒΡΥΜΙΝΤ=4 ΚΑΙΡΕ=ΣΑΛΥΝ.
 64 ΣΑΛΥΝ=8 ΜΒΥΣΕΙΛ=ΣΕΑΤΡΥ.
 ΤΡΟΙΣ ΚΙΥΒΑΕ=6·228 ΣΑΛΥΝ.
 ΣΑΛΥΝ=4·546 ΛΙΟΤΑΙΡ.

ΜΕΛΕΑΝ, ΣΑΕ ΛΙΟΤΑΡ ΡΕ Σ.Ε.Β.

ΗΤΟΡΙΣΙΝ ·090 ΟΕ ΣΡΑΜ.
 ΔΕΡ 1·29 ΣΡΑΜΑ.

ΒΥΝΤΛΥΑΕΑ ΙΣ ΡΟΙΡΜΛΙ ΜΑΤΑΜΑΙΤΙΣΕ.

ΘΟΝΝ ΝΑ ΛΟΓΑΡΤΑΜ ΔΙΣΕΑΝΤΑ, $e=2·7183$.
 ΣΥΝ ΣΝΑΕΤΟΓΑΡΤΑΜ Ο'ΑΤΡΥ ΣΟ ΛΟΓΑΡΤΑΜ ΝΑΠΙΕΡ, ΙΑΘ Ο'ΙΟΙΚΡΥ ΡΕ 2·3026.
 ΚΟΙΒΝΕΑΣ ΙΜΛΙΝΕ ΣΙΟΡΚΑΙΛ ΤΕΝΑ·ΤΡΑΣΝΑΝ, $\pi=3·14159$.
 ΤΟΙΛΕ ΚΡΥΙΣΕΟΙΣΕ ΝΟ ΛΕΑΕΤ ΑΡ ΒΙΕ= $\frac{1}{2}$ Ο'ΡΑΙΡΣΙΝΣΕ ΑΝ ΘΟΙΝΝ Χ ΑΙΡΟΕ ΙΝΣΕΑΡΑΕ.

ΚΟΜΕΚΡΥΙΝΝΕΑΝ ΟΑΡ ΣΑ g , $4\pi g^2$ ΡΑΙΡΣΙΝΣΕ Α ΘΡΟΜΕΛΑ ΑΥΣ $\frac{4}{3}\pi g^3$ Α ΤΟΙΛΕ.

ΘΡΟΝΕΚΡΥΙΣΕΟΣ ΑΣ Α ΒΡΥΙΛ $g=ΣΑ$ Α ΘΟΙΝΝ ΑΥΣ $l=Α$ ΚΙΛΟΝ·ΑΙΡΟΕ, ΣΕ ΡΑΙΡΣΙΝΣΕ Α ΘΡΟΜΕΛΑ ΝΑ $\pi g (l+g)$.

ΤΟΜΑΙΣΕΑΝΝΑ ΡΑΙΡΣΙΝΣΕ.

10 ΣΤΑΒΡΑ ΣΕΑΡΝΑΕΑ=ΑΚΡΑ.
 640 ΑΚΡΑ=ΜΙΛΕ ΣΕΑΡΝΑΕ.
 ΔΡΕ=100 ΜΕΑΥΑΡ ΣΡ.

ΤΟΜΑΣ ΜΙΛΛΕΑΝ.

"ΡΟΙΝΤΕ" ΟΕΝ ΣΟΜΠΑΣ=11 $\frac{1}{4}$ °.

ΤΟΜΑΙΣΕΑΝΝΑ ΜΕΛΕΑΝ.

7,000 ΣΡΑΜΜΕ=ΡΥΝΤ.
 ΡΥΝΤ=453·6 ΣΡΑΜΑ.

ΜΕΛΕΑΝ ΤΡΟΙΣΕ ΚΙΥΒΑΙ.

| | | |
|------------------|---------|----------|
| Ο'ΥΙΣΕ | ΤΥΑΙΡΙΜ | 62·3 ΡΕ. |
| ΟΕ ΤΕΑΚΟΙΣΡΕ | " | 57 ΡΕ. |
| ΟΕ ΣΥΑΛ | " | 80 ΡΕ. |
| ΟΕ ΚΙΟΕΑΟΙΛ | " | 160 ΡΕ. |
| Ο'ΙΑΡΑΝΝ ΤΕΙΣΤΕ. | " | 450 ΡΕ. |
| ΟΕ ΤΥΑΙΡΕ | " | 711 ΡΕ. |

| Gath. | Céim. |
|-------|---------|
| 0·001 | 0·06 |
| 0·002 | 0·11 |
| 0·003 | 0·17 |
| 0·004 | 0·23 |
| 0·005 | 0·29 |
| 0·006 | 0·34 |
| 0·007 | 0·40 |
| 0·008 | 0·46 |
| 0·009 | 0·52 |
| 0·01 | 0·57 |
| 0·02 | 1·15 |
| 0·03 | 1·72 |
| 0·04 | 2·29 |
| 0·05 | 2·86 |
| 0·06 | 3·44 |
| 0·07 | 4·01 |
| 0·08 | 4·58 |
| 0·09 | 5·16 |
| 0·1 | 5·73 |
| 0·2 | 11·46 |
| 0·3 | 17·19 |
| 0·4 | 22·92 |
| 0·5 | 28·65 |
| 0·6 | 34·38 |
| 0·7 | 40·11 |
| 0·8 | 45·84 |
| 0·9 | 51·57 |
| 1 | 57·30 |
| 2 | 114·59 |
| 3 | 171·89 |
| 4 | 229·18 |
| 5 | 286·48 |
| 6 | 343·77 |
| Rad. | Degrees |

SNADÓM=mile pARRAIGE gAC uAIR AN ÉLOIS.

LUAS FUAIME TRÍO AN AER=1,120 CR. gAC SOICMO.

LUAS SOLAIS TRÍ SPÁS FOLAM=186,300 mile gAC SOICMO.

FORGLUAISEACÉT TRÍ DÓMAN-TARRAINIS, $g=32.2$ CR. gAC SEC.²
=981 CTM. gAC SEC.²

MEICNIC AGUS FÍSIC.

TRÓIS-PUNT=1.356 × 10⁷ EARGA.

EACUMHACÉT=550 CR.-PT. gAC SEC.=746 UAT.

ΔONAD DEN DORO TRÁDÁLA=1,000 UAT-UAIRE.

DÚ DÓN AERDRAIC ΔMÁIN=76 CTM. D'AIRGEAD BEO.

=14.7 punt meáCÁIN AR gAC ORL. CR.

COMÉIFEACÉT ΔTRAONTA UISCÉ=1.33.

RÁIL ÉRUAC ACÁ 100 CR. AR FAD, TÉANN SÍ I DPAO DE RÉIR 0.1 D'ORLAC IN
ΔGÁID gAC 7° F.

CALRA=4.2 × 10⁷ EARGA.

TEAS-ΔONAD SASANAC=252 CALRA.

SEASÁIONN TEARM DO 100,000 TEAS-ΔONAD SASANAC.

POINTEÍ LEÁTE : IARANN 1,600° C., STÁN 231° C.

SAIN-TEASA : COPAR .095, ALUMINIUM .202.

TEASA FOLAIS : gAL UISCÉ AG 100° C. 536 CALRAÍ gAC gRAM.

LEÁ TEACOISRE 79 " " "

CUASLAISGÉACÉT : AN MEÁCÁN IS MÓ IS FÉIDIR Δ CUASLAGAD I 100 gRAM UISCÉ
AG 15° C. :-NÍOTAR 28 gRM., SÁLANN COITIANTA 36 gRM., SÓRO NÍOCÁIN 63 gRM.

DÚ DÓIBLÉISE I gCÁDÁIN LeCLANCHÉ=1.4 DÓLTA.

FRIOTÁIÓÉT I SNÁITE COPAIR, UIM. 20=20 OHM gAC 850 SLAC.

" " IARÁINN, UIM. 20=20 OHM gAC 150 SLAC.

(TÁ SNÁT UIM. 20 S.W.G. .036 D'ORLAC AR ÉRASNÁN.)

COMHÚRÍ LEICTRE-ÉIMICEACÉT : SILTEAR .001118 gRM. AIRGID IN ΔGÁID AN TSECUMO
NUAIR Δ gLUAISEANN SRUT I AMPÉRE TRÍ CUASLAGÁN DE SÁLANN AIRGID.

Measures of Distance.

2,240 yards=1 Irish mile.

1,760 yards=1 statute mile.

100 links=1 chain=22 yds.

1 geographical mile=1.152 miles.

1 fathom=.001 geographical mile.

1 kilometre=0.6214 mile.

1 inch=2.540 cms.

Measures of Volume.

8 pints=4 quarts=1 gallon.

64 gallons=8 bushels=1 quarter.

1 cubic foot=6.228 gallons.

1 gallon=4.546 litres.

Mass per litre at N.T.P.

Hydrogen .090 grams.

Air 1.29 " "

Measures of Area.

10 sq. chains=1 acre.

640 acres=1 sq. mile.

1 are=100 sq. metres.

Measure of Angle.

A nautical "point"=11¼°

Measures of Mass.

7,000 grains=1 lb.

1 lb.=453.6 grams.

Mass per Cubic Foot.

Water 62.3 lbs. (approx.)

Ice 57 " "

Coal 80 " "

Limestone 160 " "

Cast iron 450 " "

Lead 711 " "

Mathematical Relations.

Base of natural logarithms, $e=2.7183$.

To convert common into Napierian logarithms multiply by 2.3026.

Ratio of circumference to diameter of circle, $\pi=3.14159$.

Volume of any cone or pyramid= $\frac{1}{3}$ area of base \times perp. height.

A sphere of radius r has surface $4\pi r^2$ and volume $\frac{4}{3}\pi r^3$.

The surface of a right cone of radius r and slant height l is $\pi r (l+r)$.

Velocity and Acceleration.

1 knot = 1 geographical mile per hour.

Velocity of **sound** in air = 1,120 ft. per sec. (approx.).

Velocity of **light** in *vacuo* = 186,300 miles per sec.

Acceleration due to gravity, $g = 32.2$ ft. per sec.² = 981 cms. per sec.²

Mechanics and Physics.

1 foot-pound = 1.356×10^7 ergs.

1 horse power = 550 ft. lb. per sec. = 746 watts.

1 Board of Trade unit = 1,000 watt-hours.

Pressure of one **atmosphere** = 76 cms. of mercury or 14.7 lb. wt. per sq. in.

Refractive Index of water = 1.33.

The **expansion** of a 100-foot steel rail is 0.1 inch per 7° F.

1 Calorie is equivalent to 4.2×10^7 ergs.

1 British Thermal unit = 252 calories.

1 Therm represents 100,000 British Thermal units.

Melting points : Iron 1,600° C., Tin 231° C.

Specific heats : Copper .095, Aluminium .202.

Latent heats : Steam at 100° C. 536 calories per gm.

Fusion of Ice, 79 " " "

Solubilities : Maximum mass dissolved by 100 grams water at 15° C.—

Nitre 28 grams, Common Salt 36 grams, Washing Soda 63 grams.

Electromotive force of Leclanché cell = 1.4 volts.

Resistance of No. 20 **Copper** wire is 20 ohms per 850 yards.

„ of No. 20 **Iron** wire is 20 ohms per 150 yards.

(No. 20 S.W.G. wire has a diameter of .036 inches.)

Electro-chemical Equivalent : .001118 grams of **silver** are deposited per second from a solution of a silver salt with a current of 1 ampère.

