W.H. Cherry

2017-02-20

# 99.5*th* PERCENTILES FOR THE *F* DISTRIBUTION [$F_{\nu_1,\nu_2}$]

[Calculated with *qf* in **R** Version 3.2.2 using 17-digit arithmetic; the accuracy of all digits in the table entries has *not* been verified]

Each table entry is the value ($y$) of the random variable $Y \sim F_{\nu_1,\nu_2}$ such that $\Pr(Y \le y) = 0.995$ ($\nu_1$ is the numerator, $\nu_2$ the denominator, degrees of freedom)

$F_{\nu_1,\nu_2}$ .995

| Df → ↓ $\nu_2/\nu_1$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 100 | 175 | 350 | 1,000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16211 | 19999 | 21615 | 22500 | 23056 | 23437 | 23715 | 23925 | 24091 | 24224 | 24426 | 24630 | 24836 | 24960 | 25044 | 25148 | 25211 | 25253 | 25295 | 25337 | 25392 | 25428 | 25452 |
| 2 | 198.50 | 199.00 | 199.17 | 199.25 | 199.30 | 199.33 | 199.36 | 199.37 | 199.39 | 199.40 | 199.42 | 199.43 | 199.45 | 199.46 | 199.47 | 199.47 | 199.48 | 199.48 | 199.49 | 199.49 | 199.49 | 199.50 | 199.50 |
| 3 | 55.552 | 49.799 | 47.467 | 46.195 | 45.392 | 44.838 | 44.434 | 44.126 | 43.882 | 43.686 | 43.387 | 43.085 | 42.778 | 42.591 | 42.466 | 42.308 | 42.213 | 42.149 | 42.086 | 42.022 | 41.939 | 41.884 | 41.848 |
| 4 | 31.333 | 26.284 | 24.259 | 23.155 | 22.456 | 21.975 | 21.622 | 21.352 | 21.139 | 20.967 | 20.705 | 20.438 | 20.167 | 20.002 | 19.892 | 19.752 | 19.667 | 19.611 | 19.554 | 19.497 | 19.423 | 19.374 | 19.342 |
| 5 | 22.785 | 18.314 | 16.530 | 15.556 | 14.940 | 14.513 | 14.200 | 13.961 | 13.772 | 13.618 | 13.384 | 13.146 | 12.903 | 12.755 | 12.656 | 12.530 | 12.454 | 12.402 | 12.351 | 12.300 | 12.233 | 12.188 | 12.159 |
| 6 | 18.6350 | 14.5441 | 12.9166 | 12.0275 | 11.4637 | 11.0730 | 10.7859 | 10.5658 | 10.3915 | 10.2500 | 10.0343 | 9.8140 | 9.5888 | 9.4511 | 9.3582 | 9.2408 | 9.1697 | 9.1219 | 9.0739 | 9.0257 | 8.9633 | 8.9214 | 8.8941 |
| 7 | 16.2356 | 12.4040 | 10.8824 | 10.0505 | 9.5221 | 9.1553 | 8.8854 | 8.6781 | 8.5138 | 8.3803 | 8.1764 | 7.9678 | 7.7540 | 7.6230 | 7.5345 | 7.4224 | 7.3544 | 7.3088 | 7.2628 | 7.2165 | 7.1567 | 7.1165 | 7.0902 |
| 8 | 14.6882 | 11.0424 | 9.5965 | 8.8051 | 8.3018 | 7.9520 | 7.6941 | 7.4959 | 7.3386 | 7.2106 | 7.0149 | 6.8143 | 6.6082 | 6.4817 | 6.3961 | 6.2875 | 6.2215 | 6.1772 | 6.1325 | 6.0875 | 6.0292 | 5.9900 | 5.9644 |
| 9 | 13.6136 | 10.1067 | 8.7171 | 7.9559 | 7.4712 | 7.1339 | 6.8849 | 6.6933 | 6.5411 | 6.4172 | 6.2274 | 6.0325 | 5.8318 | 5.7084 | 5.6248 | 5.5186 | 5.4539 | 5.4104 | 5.3666 | 5.3223 | 5.2650 | 5.2264 | 5.2012 |
| 10 | 12.8265 | 9.4270 | 8.0807 | 7.3428 | 6.8724 | 6.5446 | 6.3025 | 6.1159 | 5.9676 | 5.8467 | 5.6613 | 5.4707 | 5.2740 | 5.1528 | 5.0706 | 4.9659 | 4.9022 | 4.8592 | 4.8159 | 4.7721 | 4.7153 | 4.6771 | 4.6521 |
| 11 | 12.2263 | 8.9122 | 7.6004 | 6.8809 | 6.4217 | 6.1016 | 5.8648 | 5.6821 | 5.5368 | 5.4183 | 5.2363 | 5.0489 | 4.8552 | 4.7356 | 4.6543 | 4.5508 | 4.4876 | 4.4450 | 4.4020 | 4.3585 | 4.3020 | 4.2640 | 4.2390 |
| 12 | 11.7542 | 8.5096 | 7.2258 | 6.5211 | 6.0711 | 5.7570 | 5.5245 | 5.3451 | 5.2021 | 5.0855 | 4.9062 | 4.7213 | 4.5299 | 4.4115 | 4.3309 | 4.2282 | 4.1653 | 4.1229 | 4.0801 | 4.0368 | 3.9804 | 3.9424 | 3.9174 |
| 13 | 11.3735 | 8.1865 | 6.9258 | 6.2335 | 5.7910 | 5.4819 | 5.2529 | 5.0761 | 4.9351 | 4.8199 | 4.6429 | 4.4600 | 4.2703 | 4.1528 | 4.0727 | 3.9704 | 3.9078 | 3.8655 | 3.8228 | 3.7795 | 3.7231 | 3.6850 | 3.6601 |
| 14 | 11.0603 | 7.9216 | 6.6804 | 5.9984 | 5.5623 | 5.2574 | 5.0313 | 4.8566 | 4.7173 | 4.6034 | 4.4281 | 4.2468 | 4.0585 | 3.9417 | 3.8619 | 3.7600 | 3.6975 | 3.6552 | 3.6125 | 3.5692 | 3.5127 | 3.4745 | 3.4494 |
| 15 | 10.7980 | 7.7008 | 6.4760 | 5.8029 | 5.3721 | 5.0708 | 4.8473 | 4.6744 | 4.5364 | 4.4235 | 4.2497 | 4.0698 | 3.8826 | 3.7662 | 3.6867 | 3.5850 | 3.5225 | 3.4803 | 3.4375 | 3.3941 | 3.3374 | 3.2991 | 3.2739 |
| 16 | 10.5755 | 7.5138 | 6.3034 | 5.6378 | 5.2117 | 4.9134 | 4.6920 | 4.5207 | 4.3838 | 4.2719 | 4.0994 | 3.9205 | 3.7342 | 3.6182 | 3.5389 | 3.4372 | 3.3747 | 3.3324 | 3.2895 | 3.2460 | 3.1891 | 3.1506 | 3.1253 |
| 17 | 10.3842 | 7.3536 | 6.1556 | 5.4967 | 5.0746 | 4.7789 | 4.5594 | 4.3894 | 4.2535 | 4.1424 | 3.9709 | 3.7929 | 3.6073 | 3.4916 | 3.4124 | 3.3108 | 3.2482 | 3.2058 | 3.1628 | 3.1192 | 3.0620 | 3.0233 | 2.9978 |
| 18 | 10.2181 | 7.2148 | 6.0278 | 5.3746 | 4.9560 | 4.6627 | 4.4448 | 4.2759 | 4.1410 | 4.0305 | 3.8599 | 3.6827 | 3.4977 | 3.3822 | 3.3030 | 3.2014 | 3.1387 | 3.0962 | 3.0531 | 3.0093 | 2.9518 | 2.9128 | 2.8871 |
| 19 | 10.0725 | 7.0935 | 5.9161 | 5.2681 | 4.8526 | 4.5614 | 4.3448 | 4.1770 | 4.0428 | 3.9329 | 3.7631 | 3.5866 | 3.4020 | 3.2867 | 3.2075 | 3.1058 | 3.0430 | 3.0004 | 2.9571 | 2.9131 | 2.8554 | 2.8161 | 2.7902 |
| 20 | 9.9439 | 6.9865 | 5.8177 | 5.1743 | 4.7616 | 4.4721 | 4.2569 | 4.0900 | 3.9564 | 3.8470 | 3.6779 | 3.5020 | 3.3178 | 3.2025 | 3.1234 | 3.0215 | 2.9586 | 2.9159 | 2.8724 | 2.8282 | 2.7702 | 2.7306 | 2.7046 |
| 22 | 9.7271 | 6.8064 | 5.6524 | 5.0168 | 4.6088 | 4.3225 | 4.1094 | 3.9440 | 3.8116 | 3.7030 | 3.5350 | 3.3600 | 3.1764 | 3.0613 | 2.9821 | 2.8799 | 2.8167 | 2.7736 | 2.7298 | 2.6852 | 2.6264 | 2.5864 | 2.5599 |
| 24 | 9.5513 | 6.6609 | 5.5190 | 4.8898 | 4.4857 | 4.2019 | 3.9905 | 3.8264 | 3.6949 | 3.5870 | 3.4199 | 3.2456 | 3.0624 | 2.9472 | 2.8679 | 2.7654 | 2.7018 | 2.6585 | 2.6143 | 2.5692 | 2.5098 | 2.4692 | 2.4423 |
| 26 | 9.4059 | 6.5409 | 5.4091 | 4.7852 | 4.3844 | 4.1027 | 3.8928 | 3.7297 | 3.5989 | 3.4916 | 3.3252 | 3.1515 | 2.9685 | 2.8533 | 2.7738 | 2.6709 | 2.6070 | 2.5633 | 2.5188 | 2.4733 | 2.4131 | 2.3719 | 2.3446 |
| 28 | 9.2838 | 6.4403 | 5.3170 | 4.6977 | 4.2996 | 4.0197 | 3.8110 | 3.6487 | 3.5186 | 3.4117 | 3.2460 | 3.0727 | 2.8899 | 2.7746 | 2.6949 | 2.5916 | 2.5273 | 2.4834 | 2.4384 | 2.3925 | 2.3316 | 2.2898 | 2.2621 |
| 30 | 9.1797 | 6.3547 | 5.2388 | 4.6234 | 4.2276 | 3.9492 | 3.7416 | 3.5801 | 3.4505 | 3.3440 | 3.1787 | 3.0057 | 2.8230 | 2.7076 | 2.6278 | 2.5241 | 2.4594 | 2.4151 | 2.3699 | 2.3234 | 2.2619 | 2.2195 | 2.1914 |
| 35 | 8.9763 | 6.1878 | 5.0865 | 4.4788 | 4.0876 | 3.8123 | 3.6066 | 3.4466 | 3.3180 | 3.2123 | 3.0480 | 2.8756 | 2.6930 | 2.5772 | 2.4969 | 2.3922 | 2.3266 | 2.2816 | 2.2355 | 2.1880 | 2.1248 | 2.0810 | 2.0518 |
| 40 | 8.8279 | 6.0664 | 4.9758 | 4.3738 | 3.9860 | 3.7129 | 3.5088 | 3.3498 | 3.2220 | 3.1167 | 2.9531 | 2.7811 | 2.5984 | 2.4823 | 2.4015 | 2.2958 | 2.2295 | 2.1838 | 2.1369 | 2.0884 | 2.0236 | 1.9785 | 1.9483 |
| 45 | 8.7148 | 5.9741 | 4.8918 | 4.2941 | 3.9090 | 3.6376 | 3.4346 | 3.2764 | 3.1492 | 3.0443 | 2.8811 | 2.7094 | 2.5266 | 2.4101 | 2.3288 | 2.2224 | 2.1553 | 2.1090 | 2.0613 | 2.0119 | 1.9456 | 1.8993 | 1.8682 |
| 50 | 8.6258 | 5.9016 | 4.8259 | 4.2316 | 3.8486 | 3.5785 | 3.3765 | 3.2189 | 3.0920 | 2.9875 | 2.8247 | 2.6531 | 2.4702 | 2.3533 | 2.2717 | 2.1644 | 2.0967 | 2.0499 | 2.0015 | 1.9512 | 1.8836 | 1.8361 | 1.8040 |
| 60 | 8.4946 | 5.7950 | 4.7290 | 4.1399 | 3.7599 | 3.4918 | 3.2911 | 3.1344 | 3.0083 | 2.9042 | 2.7419 | 2.5705 | 2.3872 | 2.2697 | 2.1874 | 2.0789 | 2.0100 | 1.9622 | 1.9126 | 1.8609 | 1.7907 | 1.7410 | 1.7073 |
| 70 | 8.4027 | 5.7204 | 4.6613 | 4.0758 | 3.6980 | 3.4313 | 3.2315 | 3.0755 | 2.9498 | 2.8460 | 2.6840 | 2.5127 | 2.3291 | 2.2112 | 2.1283 | 2.0186 | 1.9488 | 1.9002 | 1.8496 | 1.7966 | 1.7242 | 1.6726 | 1.6373 |
| 80 | 8.3346 | 5.6652 | 4.6113 | 4.0285 | 3.6524 | 3.3867 | 3.1876 | 3.0320 | 2.9066 | 2.8031 | 2.6413 | 2.4700 | 2.2862 | 2.1678 | 2.0845 | 1.9739 | 1.9033 | 1.8540 | 1.8025 | 1.7484 | 1.6742 | 1.6208 | 1.5840 |
| 90 | 8.2822 | 5.6228 | 4.5728 | 3.9922 | 3.6173 | 3.3524 | 3.1538 | 2.9986 | 2.8735 | 2.7701 | 2.6085 | 2.4373 | 2.2532 | 2.1345 | 2.0507 | 1.9394 | 1.8681 | 1.8182 | 1.7660 | 1.7109 | 1.6350 | 1.5800 | 1.5419 |
| 100 | 8.2406 | 5.5892 | 4.5424 | 3.9634 | 3.5895 | 3.3252 | 3.1271 | 2.9722 | 2.8472 | 2.7440 | 2.5825 | 2.4113 | 2.2270 | 2.1080 | 2.0239 | 1.9119 | 1.8400 | 1.7896 | 1.7367 | 1.6809 | 1.6034 | 1.5470 | 1.5076 |
| 125 | 8.1665 | 5.5294 | 4.4882 | 3.9122 | 3.5400 | 3.2769 | 3.0796 | 2.9252 | 2.8006 | 2.6975 | 2.5363 | 2.3651 | 2.1804 | 2.0607 | 1.9760 | 1.8628 | 1.7897 | 1.7383 | 1.6841 | 1.6266 | 1.5459 | 1.4864 | 1.4442 |
| 150 | 8.1177 | 5.4900 | 4.4525 | 3.8785 | 3.5075 | 3.2452 | 3.0483 | 2.8942 | 2.7698 | 2.6669 | 2.5059 | 2.3346 | 2.1496 | 2.0295 | 1.9444 | 1.8302 | 1.7563 | 1.7041 | 1.6490 | 1.5901 | 1.5070 | 1.4449 | 1.4003 |
| 175 | 8.0830 | 5.4620 | 4.4273 | 3.8546 | 3.4845 | 3.2227 | 3.0262 | 2.8723 | 2.7481 | 2.6453 | 2.4843 | 2.3131 | 2.1278 | 2.0074 | 1.9219 | 1.8070 | 1.7325 | 1.6797 | 1.6238 | 1.5639 | 1.4788 | 1.4145 | 1.3678 |
| 200 | 8.0572 | 5.4412 | 4.4084 | 3.8368 | 3.4674 | 3.2059 | 3.0097 | 2.8560 | 2.7319 | 2.6292 | 2.4683 | 2.2970 | 2.1116 | 1.9909 | 1.9051 | 1.7897 | 1.7147 | 1.6614 | 1.6049 | 1.5442 | 1.4574 | 1.3912 | 1.3426 |
| 250 | 8.0212 | 5.4122 | 4.3822 | 3.8121 | 3.4435 | 3.1826 | 2.9867 | 2.8333 | 2.7094 | 2.6068 | 2.4459 | 2.2746 | 2.0889 | 1.9679 | 1.8817 | 1.7655 | 1.6897 | 1.6358 | 1.5784 | 1.5163 | 1.4269 | 1.3577 | 1.3059 |
| 300 | 7.9973 | 5.3930 | 4.3649 | 3.7957 | 3.4277 | 3.1672 | 2.9716 | 2.8183 | 2.6945 | 2.5919 | 2.4311 | 2.2598 | 2.0739 | 1.9526 | 1.8661 | 1.7494 | 1.6731 | 1.6187 | 1.5606 | 1.4976 | 1.4062 | 1.3347 | 1.2802 |
| 350 | 7.9803 | 5.3793 | 4.3525 | 3.7841 | 3.4165 | 3.1562 | 2.9608 | 2.8076 | 2.6839 | 2.5814 | 2.4206 | 2.2493 | 2.0633 | 1.9418 | 1.8551 | 1.7379 | 1.6612 | 1.6064 | 1.5478 | 1.4842 | 1.3913 | 1.3178 | 1.2611 |
| 400 | 7.9676 | 5.3691 | 4.3433 | 3.7754 | 3.4081 | 3.1480 | 2.9527 | 2.7996 | 2.6759 | 2.5735 | 2.4128 | 2.2414 | 2.0553 | 1.9336 | 1.8468 | 1.7293 | 1.6523 | 1.5972 | 1.5382 | 1.4741 | 1.3799 | 1.3050 | 1.2463 |
| 450 | 7.9577 | 5.3612 | 4.3361 | 3.7686 | 3.4015 | 3.1417 | 2.9464 | 2.7934 | 2.6698 | 2.5673 | 2.4066 | 2.2353 | 2.0491 | 1.9273 | 1.8403 | 1.7226 | 1.6453 | 1.5901 | 1.5308 | 1.4661 | 1.3711 | 1.2948 | 1.2344 |
| 500 | 7.9498 | 5.3549 | 4.3304 | 3.7632 | 3.3963 | 3.1366 | 2.9414 | 2.7885 | 2.6649 | 2.5625 | 2.4018 | 2.2304 | 2.0441 | 1.9223 | 1.8352 | 1.7172 | 1.6398 | 1.5843 | 1.5248 | 1.4598 | 1.3639 | 1.2865 | 1.2247 |
| 600 | 7.9381 | 5.3454 | 4.3219 | 3.7551 | 3.3886 | 3.1290 | 2.9339 | 2.7811 | 2.6575 | 2.5551 | 2.3945 | 2.2231 | 2.0367 | 1.9147 | 1.8275 | 1.7092 | 1.6315 | 1.5757 | 1.5158 | 1.4502 | 1.3530 | 1.2738 | 1.2095 |
| 700 | 7.9296 | 5.3386 | 4.3158 | 3.7494 | 3.3830 | 3.1236 | 2.9286 | 2.7758 | 2.6523 | 2.5499 | 2.3893 | 2.2178 | 2.0314 | 1.9093 | 1.8220 | 1.7035 | 1.6255 | 1.5696 | 1.5094 | 1.4434 | 1.3452 | 1.2646 | 1.1983 |
| 800 | 7.9233 | 5.3336 | 4.3112 | 3.7451 | 3.3788 | 3.1195 | 2.9246 | 2.7719 | 2.6483 | 2.5460 | 2.3854 | 2.2139 | 2.0274 | 1.9053 | 1.8178 | 1.6992 | 1.6211 | 1.5650 | 1.5045 | 1.4382 | 1.3393 | 1.2576 | 1.1897 |
| 900 | 7.9184 | 5.3296 | 4.3076 | 3.7417 | 3.3756 | 3.1164 | 2.9215 | 2.7688 | 2.6453 | 2.5430 | 2.3824 | 2.2109 | 2.0244 | 1.9021 | 1.8146 | 1.6958 | 1.6176 | 1.5614 | 1.5008 | 1.4342 | 1.3347 | 1.2521 | 1.1827 |
| 1,000 | 7.9145 | 5.3265 | 4.3048 | 3.7390 | 3.3730 | 3.1138 | 2.9190 | 2.7663 | 2.6429 | 2.5405 | 2.3800 | 2.2085 | 2.0219 | 1.8996 | 1.8121 | 1.6932 | 1.6148 | 1.5585 | 1.4978 | 1.4310 | 1.3310 | 1.2477 | 1.1771 |
| 2,000 | 7.8970 | 5.3124 | 4.2921 | 3.7270 | 3.3615 | 3.1025 | 2.9079 | 2.7553 | 2.6319 | 2.5297 | 2.3691 | 2.1976 | 2.0109 | 1.8884 | 1.8006 | 1.6812 | 1.6023 | 1.5455 | 1.4841 | 1.4164 | 1.3141 | 1.2271 | 1.1500 |
| 3,000 | 7.8911 | 5.3077 | 4.2878 | 3.7230 | 3.3576 | 3.0988 | 2.9042 | 2.7517 | 2.6283 | 2.5260 | 2.3655 | 2.1940 | 2.0072 | 1.8846 | 1.7967 | 1.6772 | 1.5981 | 1.5412 | 1.4796 | 1.4115 | 1.3083 | 1.2200 | 1.1402 |
| 4,000 | 7.8882 | 5.3053 | 4.2857 | 3.7210 | 3.3557 | 3.0969 | 2.9024 | 2.7498 | 2.6265 | 2.5242 | 2.3637 | 2.1922 | 2.0053 | 1.8827 | 1.7948 | 1.6752 | 1.5961 | 1.5390 | 1.4773 | 1.4091 | 1.3055 | 1.2164 | 1.1351 |
| 5,000 | 7.8864 | 5.3039 | 4.2845 | 3.7198 | 3.3545 | 3.0958 | 2.9012 | 2.7488 | 2.6254 | 2.5232 | 2.3626 | 2.1911 | 2.0042 | 1.8816 | 1.7937 | 1.6740 | 1.5948 | 1.5377 | 1.4760 | 1.4076 | 1.3037 | 1.2142 | 1.1320 |
| 7,500 | 7.8841 | 5.3021 | 4.2828 | 3.7183 | 3.3530 | 3.0943 | 2.8998 | 2.7473 | 2.6239 | 2.5217 | 2.3612 | 2.1896 | 2.0028 | 1.8801 | 1.7921 | 1.6724 | 1.5931 | 1.5360 | 1.4741 | 1.4056 | 1.3014 | 1.2113 | 1.1277 |
| 10,000 | 7.8829 | 5.3011 | 4.2819 | 3.7175 | 3.3522 | 3.0935 | 2.8990 | 2.7466 | 2.6232 | 2.5210 | 2.3605 | 2.1889 | 2.0020 | 1.8794 | 1.7914 | 1.6715 | 1.5923 | 1.5351 | 1.4732 | 1.4046 | 1.3003 | 1.2099 | 1.1256 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 100 | 175 | 350 | 1,000 |

$F_{\nu_1,\nu_2}$ .995

# 99.9*th* PERCENTILES FOR THE *F* DISTRIBUTION [$F_{\nu_1,\nu_2}$]

[Calculated with *qf* in **R** Version 3.3.2 using 17-digit arithmetic; the accuracy of all digits in the table entries has *not* been verified]

Each table entry is the value ($y$) of the random variable $Y \sim F_{\nu_1,\nu_2}$ such that $\Pr(Y \le y) = 0.999$ ($\nu_1$ is the numerator, $\nu_2$ the denominator, degrees of freedom)

$F_{\nu_1,\nu_2}$ .999

| Df → ↓ $\nu_2 / \nu_1$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 100 | 175 | 350 | 1,000 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 405284 | 499999 | 540379 | 562500 | 576405 | 585937 | 592873 | 598144 | 602284 | 605621 | 610668 | 615764 | 620908 | 624017 | 626099 | 628712 | 630285 | 631337 | 632390 | 633444 | 634803 | 635711 | 636301 | 1 |
| 2 | 998.50 | 999.00 | 999.17 | 999.25 | 999.30 | 999.33 | 999.36 | 999.37 | 999.39 | 999.40 | 999.42 | 999.43 | 999.45 | 999.46 | 999.47 | 999.47 | 999.48 | 999.48 | 999.49 | 999.49 | 999.49 | 999.50 | 999.50 | |
| 3 | 167.03 | 148.50 | 141.11 | 137.10 | 134.58 | 132.85 | 131.58 | 130.62 | 129.86 | 129.25 | 128.32 | 127.37 | 126.42 | 125.84 | 125.45 | 124.96 | 124.66 | 124.47 | 124.27 | 124.07 | 123.81 | 123.64 | 123.53 | |
| 4 | 74.137 | 61.246 | 56.177 | 53.436 | 51.712 | 50.525 | 49.658 | 48.996 | 48.475 | 48.053 | 47.412 | 46.761 | 46.100 | 45.699 | 45.429 | 45.089 | 44.883 | 44.746 | 44.608 | 44.469 | 44.290 | 44.171 | 44.093 | |
| 5 | 47.181 | 37.122 | 33.202 | 31.085 | 29.752 | 28.834 | 28.163 | 27.649 | 27.244 | 26.917 | 26.418 | 25.911 | 25.395 | 25.080 | 24.869 | 24.602 | 24.441 | 24.333 | 24.224 | 24.115 | 23.974 | 23.880 | 23.819 | 5 |
| 6 | 35.507 | 27.000 | 23.703 | 21.924 | 20.803 | 20.030 | 19.463 | 19.030 | 18.688 | 18.411 | 17.989 | 17.559 | 17.120 | 16.853 | 16.672 | 16.445 | 16.307 | 16.214 | 16.121 | 16.028 | 15.907 | 15.826 | 15.774 | |
| 7 | 29.245 | 21.689 | 18.772 | 17.198 | 16.206 | 15.521 | 15.019 | 14.634 | 14.330 | 14.083 | 13.707 | 13.324 | 12.932 | 12.692 | 12.530 | 12.326 | 12.202 | 12.119 | 12.035 | 11.951 | 11.842 | 11.769 | 11.722 | |
| 8 | 25.4148 | 18.4937 | 15.8295 | 14.3916 | 13.4847 | 12.8580 | 12.3980 | 12.0455 | 11.7665 | 11.5401 | 11.1945 | 10.8413 | 10.4797 | 10.2583 | 10.1087 | 9.9194 | 9.8044 | 9.7272 | 9.6495 | 9.5714 | 9.4701 | 9.4021 | 9.3577 | |
| 9 | 22.8571 | 16.3871 | 13.9018 | 12.5603 | 11.7137 | 11.1281 | 10.6979 | 10.3680 | 10.1066 | 9.8943 | 9.5700 | 9.2381 | 8.8976 | 8.6888 | 8.5476 | 8.3685 | 8.2597 | 8.1865 | 8.1129 | 8.0387 | 7.9425 | 7.8779 | 7.8357 | |
| 10 | 21.0396 | 14.9054 | 12.5527 | 11.2828 | 10.4807 | 9.9256 | 9.5175 | 9.2041 | 8.9558 | 8.7539 | 8.4452 | 8.1288 | 7.8037 | 7.6041 | 7.4688 | 7.2971 | 7.1927 | 7.1224 | 7.0516 | 6.9802 | 6.8876 | 6.8253 | 6.7845 | 10 |
| 11 | 19.6868 | 13.8116 | 11.5611 | 10.3461 | 9.5784 | 9.0466 | 8.6553 | 8.3548 | 8.1163 | 7.9224 | 7.6256 | 7.3210 | 7.0076 | 6.8147 | 6.6839 | 6.5178 | 6.4165 | 6.3483 | 6.2795 | 6.2102 | 6.1201 | 6.0595 | 6.0198 | |
| 12 | 18.6433 | 12.9737 | 10.8042 | 9.6327 | 8.8921 | 8.3788 | 8.0009 | 7.7104 | 7.4797 | 7.2920 | 7.0046 | 6.7092 | 6.4048 | 6.2172 | 6.0898 | 5.9278 | 5.8290 | 5.7623 | 5.6951 | 5.6272 | 5.5390 | 5.4795 | 5.4406 | |
| 13 | 17.8154 | 12.3127 | 10.2089 | 9.0727 | 8.3541 | 7.8557 | 7.4886 | 7.2061 | 6.9818 | 6.7992 | 6.5192 | 6.2312 | 5.9340 | 5.7505 | 5.6258 | 5.4670 | 5.3700 | 5.3046 | 5.2385 | 5.1718 | 5.0849 | 5.0263 | 4.9879 | |
| 14 | 17.1434 | 11.7789 | 9.7294 | 8.6223 | 7.9218 | 7.4358 | 7.0775 | 6.8017 | 6.5826 | 6.4041 | 6.1302 | 5.8483 | 5.5568 | 5.3767 | 5.2542 | 5.0979 | 5.0023 | 4.9378 | 4.8726 | 4.8067 | 4.7208 | 4.6629 | 4.6248 | |
| 15 | 16.5874 | 11.3391 | 9.3353 | 8.2527 | 7.5674 | 7.0917 | 6.7408 | 6.4707 | 6.2559 | 6.0808 | 5.8121 | 5.5351 | 5.2484 | 5.0710 | 4.9502 | 4.7959 | 4.7015 | 4.6377 | 4.5732 | 4.5079 | 4.4228 | 4.3652 | 4.3275 | 15 |
| 16 | 16.1202 | 10.9710 | 9.0059 | 7.9442 | 7.2719 | 6.8049 | 6.4604 | 6.1950 | 5.9839 | 5.8117 | 5.5473 | 5.2745 | 4.9918 | 4.8167 | 4.6972 | 4.5446 | 4.4511 | 4.3878 | 4.3238 | 4.2590 | 4.1744 | 4.1172 | 4.0796 | |
| 17 | 15.7222 | 10.6584 | 8.7269 | 7.6831 | 7.0219 | 6.5625 | 6.2234 | 5.9620 | 5.7541 | 5.5844 | 5.3237 | 5.0544 | 4.7751 | 4.6019 | 4.4836 | 4.3323 | 4.2395 | 4.1767 | 4.1131 | 4.0486 | 3.9644 | 3.9074 | 3.8699 | |
| 18 | 15.3793 | 10.3899 | 8.4875 | 7.4593 | 6.8078 | 6.3550 | 6.0206 | 5.7628 | 5.5575 | 5.3900 | 5.1324 | 4.8663 | 4.5899 | 4.4182 | 4.3009 | 4.1507 | 4.0584 | 3.9960 | 3.9327 | 3.8685 | 3.7845 | 3.7276 | 3.6901 | |
| 19 | 15.0808 | 10.1568 | 8.2799 | 7.2655 | 6.6225 | 6.1754 | 5.8452 | 5.5904 | 5.3876 | 5.2219 | 4.9672 | 4.7037 | 4.4297 | 4.2594 | 4.1429 | 3.9936 | 3.9018 | 3.8396 | 3.7765 | 3.7125 | 3.6287 | 3.5718 | 3.5344 | |
| 20 | 14.8188 | 9.9526 | 8.0984 | 7.0960 | 6.4606 | 6.0186 | 5.6920 | 5.4400 | 5.2392 | 5.0752 | 4.8229 | 4.5618 | 4.2900 | 4.1208 | 4.0050 | 3.8564 | 3.7650 | 3.7030 | 3.6401 | 3.5762 | 3.4925 | 3.4356 | 3.3981 | 20 |
| 22 | 14.3803 | 9.6120 | 7.7960 | 6.8142 | 6.1914 | 5.7580 | 5.4376 | 5.1901 | 4.9929 | 4.8317 | 4.5835 | 4.3262 | 4.0579 | 3.8906 | 3.7759 | 3.6285 | 3.5376 | 3.4759 | 3.4131 | 3.3493 | 3.2656 | 3.2086 | 3.1710 | |
| 24 | 14.0280 | 9.3394 | 7.5545 | 6.5892 | 5.9768 | 5.5504 | 5.2349 | 4.9912 | 4.7968 | 4.6379 | 4.3929 | 4.1387 | 3.8732 | 3.7073 | 3.5935 | 3.4468 | 3.3562 | 3.2946 | 3.2320 | 3.1681 | 3.0842 | 3.0269 | 2.9891 | |
| 26 | 13.7390 | 9.1163 | 7.3572 | 6.4057 | 5.8018 | 5.3812 | 5.0698 | 4.8292 | 4.6372 | 4.4801 | 4.2378 | 3.9861 | 3.7228 | 3.5580 | 3.4448 | 3.2987 | 3.2083 | 3.1467 | 3.0840 | 3.0200 | 2.9357 | 2.8782 | 2.8401 | |
| 28 | 13.4976 | 8.9305 | 7.1931 | 6.2532 | 5.6565 | 5.2407 | 4.9328 | 4.6947 | 4.5047 | 4.3491 | 4.1091 | 3.8595 | 3.5980 | 3.4341 | 3.3213 | 3.1755 | 3.0852 | 3.0236 | 2.9608 | 2.8967 | 2.8120 | 2.7540 | 2.7156 | |
| 30 | 13.2930 | 8.7734 | 7.0545 | 6.1245 | 5.5339 | 5.1223 | 4.8173 | 4.5814 | 4.3930 | 4.2388 | 4.0006 | 3.7527 | 3.4928 | 3.3296 | 3.2171 | 3.0716 | 2.9813 | 2.9196 | 2.8567 | 2.7923 | 2.7072 | 2.6488 | 2.6100 | 30 |
| 35 | 12.8963 | 8.4697 | 6.7870 | 5.8764 | 5.2978 | 4.8942 | 4.5950 | 4.3634 | 4.1782 | 4.0265 | 3.7920 | 3.5474 | 3.2903 | 3.1283 | 3.0163 | 2.8711 | 2.7806 | 2.7187 | 2.6552 | 2.5902 | 2.5038 | 2.4443 | 2.4046 | |
| 40 | 12.6094 | 8.2508 | 6.5945 | 5.6981 | 5.1283 | 4.7306 | 4.4355 | 4.2070 | 4.0243 | 3.8744 | 3.6425 | 3.4003 | 3.1450 | 2.9838 | 2.8721 | 2.7268 | 2.6360 | 2.5737 | 2.5097 | 2.4439 | 2.3562 | 2.2955 | 2.2549 | |
| 45 | 12.3922 | 8.0855 | 6.4495 | 5.5639 | 5.0007 | 4.6075 | 4.3157 | 4.0895 | 3.9086 | 3.7601 | 3.5301 | 3.2897 | 3.0357 | 2.8750 | 2.7635 | 2.6180 | 2.5268 | 2.4640 | 2.3995 | 2.3330 | 2.2439 | 2.1820 | 2.1404 | |
| 50 | 12.2221 | 7.9564 | 6.3364 | 5.4593 | 4.9013 | 4.5117 | 4.2224 | 3.9980 | 3.8185 | 3.6711 | 3.4426 | 3.2035 | 2.9506 | 2.7902 | 2.6787 | 2.5329 | 2.4413 | 2.3782 | 2.3131 | 2.2458 | 2.1555 | 2.0924 | 2.0499 | 50 |
| 60 | 11.9730 | 7.7678 | 6.1712 | 5.3067 | 4.7565 | 4.3721 | 4.0864 | 3.8648 | 3.6873 | 3.5415 | 3.3153 | 3.0781 | 2.8266 | 2.6665 | 2.5549 | 2.4086 | 2.3162 | 2.2523 | 2.1862 | 2.1175 | 2.0247 | 1.9593 | 1.9150 | |
| 70 | 11.7993 | 7.6366 | 6.0566 | 5.2008 | 4.6561 | 4.2753 | 3.9922 | 3.7725 | 3.5964 | 3.4517 | 3.2271 | 2.9912 | 2.7405 | 2.5807 | 2.4689 | 2.3220 | 2.2289 | 2.1643 | 2.0972 | 2.0274 | 1.9323 | 1.8649 | 1.8188 | |
| 80 | 11.6714 | 7.5401 | 5.9723 | 5.1231 | 4.5824 | 4.2043 | 3.9232 | 3.7049 | 3.5298 | 3.3859 | 3.1624 | 2.9274 | 2.6774 | 2.5176 | 2.4057 | 2.2582 | 2.1644 | 2.0992 | 2.0314 | 1.9604 | 1.8634 | 1.7940 | 1.7464 | |
| 90 | 11.5732 | 7.4661 | 5.9078 | 5.0636 | 4.5260 | 4.1500 | 3.8703 | 3.6531 | 3.4789 | 3.3356 | 3.1129 | 2.8787 | 2.6291 | 2.4693 | 2.3572 | 2.2092 | 2.1149 | 2.0491 | 1.9806 | 1.9086 | 1.8098 | 1.7387 | 1.6895 | |
| 100 | 11.4954 | 7.4077 | 5.8568 | 5.0167 | 4.4815 | 4.1071 | 3.8286 | 3.6123 | 3.4387 | 3.2959 | 3.0739 | 2.8402 | 2.5909 | 2.4311 | 2.3189 | 2.1704 | 2.0756 | 2.0094 | 1.9402 | 1.8674 | 1.7669 | 1.6942 | 1.6436 | 100 |
| 125 | 11.3573 | 7.3040 | 5.7664 | 4.9334 | 4.4026 | 4.0312 | 3.7548 | 3.5399 | 3.3675 | 3.2255 | 3.0047 | 2.7720 | 2.5232 | 2.3634 | 2.2509 | 2.1014 | 2.0056 | 1.9384 | 1.8680 | 1.7934 | 1.6895 | 1.6133 | 1.5595 | |
| 150 | 11.2666 | 7.2359 | 5.7072 | 4.8788 | 4.3510 | 3.9815 | 3.7064 | 3.4926 | 3.3209 | 3.1795 | 2.9595 | 2.7274 | 2.4789 | 2.3189 | 2.2062 | 2.0560 | 1.9595 | 1.8915 | 1.8201 | 1.7441 | 1.6375 | 1.5583 | 1.5017 | |
| 175 | 11.2023 | 7.1877 | 5.6653 | 4.8403 | 4.3145 | 3.9464 | 3.6723 | 3.4591 | 3.2880 | 3.1470 | 2.9275 | 2.6958 | 2.4476 | 2.2875 | 2.1746 | 2.0239 | 1.9267 | 1.8582 | 1.7859 | 1.7089 | 1.6000 | 1.5183 | 1.4593 | |
| 200 | 11.1545 | 7.1519 | 5.6341 | 4.8116 | 4.2874 | 3.9203 | 3.6469 | 3.4343 | 3.2635 | 3.1228 | 2.9038 | 2.6724 | 2.4243 | 2.2642 | 2.1510 | 1.9999 | 1.9022 | 1.8333 | 1.7604 | 1.6824 | 1.5717 | 1.4879 | 1.4266 | |
| 250 | 11.0880 | 7.1022 | 5.5909 | 4.7719 | 4.2497 | 3.8841 | 3.6117 | 3.3998 | 3.2296 | 3.0893 | 2.8708 | 2.6399 | 2.3920 | 2.2317 | 2.1183 | 1.9665 | 1.8681 | 1.7985 | 1.7247 | 1.6453 | 1.5316 | 1.4443 | 1.3793 | 250 |
| 300 | 11.0440 | 7.0693 | 5.5623 | 4.7456 | 4.2249 | 3.8601 | 3.5884 | 3.3771 | 3.2072 | 3.0672 | 2.8490 | 2.6184 | 2.3706 | 2.2102 | 2.0967 | 1.9444 | 1.8455 | 1.7754 | 1.7008 | 1.6205 | 1.5046 | 1.4145 | 1.3464 | |
| 350 | 11.0127 | 7.0459 | 5.5420 | 4.7269 | 4.2072 | 3.8431 | 3.5719 | 3.3609 | 3.1913 | 3.0515 | 2.8336 | 2.6031 | 2.3554 | 2.1950 | 2.0813 | 1.9286 | 1.8294 | 1.7589 | 1.6838 | 1.6027 | 1.4851 | 1.3928 | 1.3221 | |
| 400 | 10.9893 | 7.0284 | 5.5268 | 4.7129 | 4.1940 | 3.8305 | 3.5596 | 3.3488 | 3.1794 | 3.0397 | 2.8220 | 2.5917 | 2.3440 | 2.1836 | 2.0697 | 1.9168 | 1.8173 | 1.7465 | 1.6710 | 1.5893 | 1.4703 | 1.3763 | 1.3032 | |
| 450 | 10.9712 | 7.0149 | 5.5151 | 4.7021 | 4.1838 | 3.8206 | 3.5500 | 3.3394 | 3.1702 | 3.0306 | 2.8131 | 2.5829 | 2.3352 | 2.1747 | 2.0608 | 1.9077 | 1.8079 | 1.7369 | 1.6611 | 1.5789 | 1.4588 | 1.3632 | 1.2882 | |
| 500 | 10.9567 | 7.0041 | 5.5057 | 4.6935 | 4.1756 | 3.8128 | 3.5424 | 3.3320 | 3.1628 | 3.0234 | 2.8060 | 2.5759 | 2.3282 | 2.1677 | 2.0537 | 1.9004 | 1.8004 | 1.7292 | 1.6531 | 1.5705 | 1.4495 | 1.3526 | 1.2759 | 500 |
| 600 | 10.9350 | 6.9879 | 5.4916 | 4.6806 | 4.1634 | 3.8010 | 3.5310 | 3.3208 | 3.1518 | 3.0125 | 2.7953 | 2.5653 | 2.3177 | 2.1571 | 2.0430 | 1.8894 | 1.7892 | 1.7177 | 1.6412 | 1.5579 | 1.4354 | 1.3365 | 1.2568 | |
| 700 | 10.9196 | 6.9764 | 5.4816 | 4.6714 | 4.1547 | 3.7927 | 3.5229 | 3.3129 | 3.1440 | 3.0048 | 2.7877 | 2.5578 | 2.3102 | 2.1496 | 2.0354 | 1.8816 | 1.7812 | 1.7095 | 1.6327 | 1.5489 | 1.4253 | 1.3248 | 1.2427 | |
| 800 | 10.9080 | 6.9677 | 5.4741 | 4.6645 | 4.1482 | 3.7864 | 3.5168 | 3.3069 | 3.1381 | 2.9990 | 2.7820 | 2.5522 | 2.3047 | 2.1440 | 2.0297 | 1.8758 | 1.7752 | 1.7033 | 1.6263 | 1.5422 | 1.4177 | 1.3159 | 1.2318 | |
| 900 | 10.8990 | 6.9610 | 5.4683 | 4.6592 | 4.1432 | 3.7816 | 3.5121 | 3.3023 | 3.1336 | 2.9945 | 2.7776 | 2.5478 | 2.3003 | 2.1396 | 2.0253 | 1.8712 | 1.7705 | 1.6985 | 1.6213 | 1.5369 | 1.4118 | 1.3089 | 1.2232 | |
| 1,000 | 10.8919 | 6.9557 | 5.4637 | 4.6549 | 4.1391 | 3.7777 | 3.5083 | 3.2986 | 3.1300 | 2.9909 | 2.7740 | 2.5443 | 2.2968 | 2.1361 | 2.0218 | 1.8676 | 1.7668 | 1.6947 | 1.6173 | 1.5327 | 1.4070 | 1.3033 | 1.2161 | 1,000 |
| 2,000 | 10.8596 | 6.9317 | 5.4428 | 4.6358 | 4.1210 | 3.7603 | 3.4914 | 3.2820 | 3.1137 | 2.9748 | 2.7582 | 2.5287 | 2.2812 | 2.1204 | 2.0059 | 1.8513 | 1.7500 | 1.6774 | 1.5993 | 1.5137 | 1.3853 | 1.2772 | 1.1823 | |
| 3,000 | 10.8489 | 6.9237 | 5.4359 | 4.6294 | 4.1150 | 3.7545 | 3.4858 | 3.2765 | 3.1083 | 2.9695 | 2.7529 | 2.5235 | 2.2761 | 2.1152 | 2.0006 | 1.8459 | 1.7444 | 1.6716 | 1.5933 | 1.5073 | 1.3779 | 1.2683 | 1.1702 | |
| 4,000 | 10.8436 | 6.9197 | 5.4324 | 4.6262 | 4.1120 | 3.7516 | 3.4830 | 3.2738 | 3.1056 | 2.9668 | 2.7503 | 2.5209 | 2.2735 | 2.1126 | 1.9980 | 1.8432 | 1.7416 | 1.6688 | 1.5903 | 1.5041 | 1.3743 | 1.2638 | 1.1639 | |
| 5,000 | 10.8404 | 6.9173 | 5.4304 | 4.6243 | 4.1102 | 3.7499 | 3.4813 | 3.2721 | 3.1039 | 2.9652 | 2.7487 | 2.5194 | 2.2719 | 2.1110 | 1.9964 | 1.8415 | 1.7399 | 1.6670 | 1.5885 | 1.5022 | 1.3720 | 1.2610 | 1.1600 | |
| 7,500 | 10.8361 | 6.9141 | 5.4276 | 4.6218 | 4.1078 | 3.7476 | 3.4790 | 3.2699 | 3.1018 | 2.9631 | 2.7466 | 2.5173 | 2.2699 | 2.1089 | 1.9943 | 1.8394 | 1.7377 | 1.6647 | 1.5861 | 1.4996 | 1.3691 | 1.2574 | 1.1548 | |
| 10,000 | 10.8340 | 6.9125 | 5.4262 | 4.6205 | 4.1066 | 3.7464 | 3.4779 | 3.2688 | 3.1007 | 2.9620 | 2.7456 | 2.5163 | 2.2688 | 2.1079 | 1.9933 | 1.8383 | 1.7366 | 1.6636 | 1.5849 | 1.4983 | 1.3676 | 1.2555 | 1.1521 | 10,000 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 100 | 175 | 350 | 1,000 | |

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W.H. Cherry