# Table 3. PERCENTILES FOR THE *t* DISTRIBUTION [$t_\nu$]

[Calculated with *qt* (and *qnorm*) in **Splus** V3.0R1 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 $Y \sim t_\nu$ such that $\Pr(Y \le y)$ = the probability given in the column heading

| *Df* ($\nu$) | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 | 0.85 | 0.90 | 0.95 | ***0.975*** | 0.99 | ***0.995*** | 0.999 | 0.999 5 | 0.999 9 | 0.999 95 | 0.999 99 | 0.999 995 | 0.999 999 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .324 920 | .509 525 | .726 543 | 1.00 000 | 1.37 638 | 1.96 261 | 3.07 768 | 6.31 375 | *12.7 062* | 31.8 205 | *63.6 567* | 318. 309 | 636. 619 | 3,183.10 | 6,366.20 | 31,831.0 | 63,662.0 | 318,309. | 1 |
| 2 | .288 675 | .444 750 | .617 213 | .816 497 | 1.06 066 | 1.38 621 | 1.88 562 | 2.91 999 | *4.30 265* | 6.96 456 | *9.92 484* | 22.3 271 | 31.5 991 | 70.7 001 | 99.9 925 | 223. 603 | 316. 225 | 707. 106 | |
| 3 | .276 671 | .424 202 | .584 390 | .764 892 | .978 472 | 1.24 978 | 1.63 774 | 2.35 336 | *3.18 245* | 4.54 070 | *5.84 091* | 10.2 145 | 12.9 240 | 22.2 037 | 28.0 001 | 47.9 277 | 60.3 968 | 103. 299 | |
| 4 | .270 722 | .414 163 | .568 649 | .740 697 | .940 965 | 1.18 957 | 1.53 321 | 2.13 185 | *2.77 645* | 3.74 695 | *4.60 409* | 7.17 318 | 8.61 030 | 13.0 337 | 15.5 441 | 23.3 322 | 27.7 716 | 41.5 779 | |
| 5 | .267 181 | .408 229 | .559 430 | .726 687 | .919 544 | 1.15 577 | 1.47 588 | 2.01 505 | *2.57 058* | 3.36 493 | *4.03 214* | 5.89 343 | 6.86 883 | 9.67 757 | 11.1 777 | 15.5 469 | 17.8 969 | 24.7 710 | 5 |
| 6 | .264 835 | .404 313 | .553 381 | .717 558 | .905 703 | 1.13 416 | 1.43 976 | 1.94 318 | *2.44 691* | 3.14 267 | *3.70 743* | 5.20 763 | 5.95 882 | 8.02 479 | 9.08 235 | 12.0 317 | 13.5 553 | 17.8 303 | |
| 7 | .263 167 | .401 538 | .549 110 | .711 142 | .896 030 | 1.11 916 | 1.41 492 | 1.89 458 | *2.36 462* | 2.99 795 | *3.49 948* | 4.78 529 | 5.40 788 | 7.06 343 | 7.88 458 | 10.1 027 | 11.2 148 | 14.2 415 | |
| 8 | .261 921 | .399 469 | .545 934 | .706 387 | .888 890 | 1.10 815 | 1.39 682 | 1.85 955 | *2.30 600* | 2.89 646 | *3.35 539* | 4.50 079 | 5.04 131 | 6.44 200 | 7.12 000 | 8.90 703 | 9.78 253 | 12.1 098 | |
| 9 | .260 955 | .397 868 | .543 480 | .702 722 | .883 404 | 1.09 972 | 1.38 303 | 1.83 311 | *2.26 216* | 2.82 144 | *3.24 984* | 4.29 681 | 4.78 091 | 6.01 013 | 6.59 368 | 8.10 206 | 8.82 748 | 10.7 202 | |
| 10 | .260 185 | .396 591 | .541 528 | .699 812 | .879 058 | 1.09 306 | 1.37 218 | 1.81 246 | *2.22 814* | 2.76 377 | *3.16 927* | 4.14 370 | 4.58 689 | 5.69 382 | 6.21 105 | 7.52 695 | 8.15 029 | 9.75 200 | 10 |
| 11 | .259 556 | .395 551 | .539 938 | .697 445 | .875 530 | 1.08 767 | 1.36 343 | 1.79 588 | *2.20 099* | 2.71 808 | *3.10 581* | 4.02 470 | 4.43 698 | 5.45 276 | 5.92 119 | 7.09 736 | 7.64 749 | 9.04 328 | |
| 12 | .259 033 | .394 686 | .538 618 | .695 483 | .872 609 | 1.08 321 | 1.35 622 | 1.78 229 | *2.17 881* | 2.68 100 | *3.05 454* | 3.92 963 | 4.31 779 | 5.26 327 | 5.69 447 | 6.76 517 | 7.26 063 | 8.50 430 | |
| 13 | .258 591 | .393 955 | .537 504 | .693 829 | .870 152 | 1.07 947 | 1.35 017 | 1.77 093 | *2.16 037* | 2.65 031 | *3.01 228* | 3.85 198 | 4.22 083 | 5.11 058 | 5.51 252 | 6.50 114 | 6.95 444 | 8.08 184 | |
| 14 | .258 213 | .393 331 | .536 552 | .692 417 | .868 055 | 1.07 628 | 1.34 503 | 1.76 131 | *2.14 479* | 2.62 449 | *2.97 684* | 3.78 739 | 4.14 045 | 4.98 501 | 5.36 341 | 6.28 655 | 6.70 645 | 7.74 251 | |
| 15 | .257 885 | .392 790 | .535 729 | .691 197 | .866 245 | 1.07 353 | 1.34 061 | 1.75 305 | *2.13 145* | 2.60 248 | *2.94 671* | 3.73 283 | 4.07 277 | 4.88 000 | 5.23 909 | 6.10 887 | 6.50 175 | 7.46 438 | 15 |
| 16 | .257 599 | .392 318 | .535 010 | .690 132 | .864 667 | 1.07 114 | 1.33 676 | 1.74 588 | *2.11 991* | 2.58 349 | *2.92 078* | 3.68 615 | 4.01 500 | 4.79 091 | 5.13 389 | 5.95 944 | 6.33 005 | 7.23 254 | |
| 17 | .257 347 | .391 902 | .534 377 | .689 195 | .863 279 | 1.06 903 | 1.33 338 | 1.73 961 | *2.10 982* | 2.56 693 | *2.89 823* | 3.64 577 | 3.96 513 | 4.71 441 | 5.04 376 | 5.83 210 | 6.18 406 | 7.03 649 | |
| 18 | .257 123 | .391 533 | .533 816 | .688 364 | .862 049 | 1.06 717 | 1.33 039 | 1.73 406 | *2.10 092* | 2.55 238 | *2.87 844* | 3.61 048 | 3.92 165 | 4.64 801 | 4.96 571 | 5.72 233 | 6.05 848 | 6.86 864 | |
| 19 | .256 923 | .391 202 | .533 314 | .687 621 | .860 951 | 1.06 551 | 1.32 773 | 1.72 913 | *2.09 302* | 2.53 948 | *2.86 093* | 3.57 940 | 3.88 341 | 4.58 986 | 4.89 746 | 5.62 677 | 5.94 935 | 6.72 339 | |
| 20 | .256 743 | .390 906 | .532 863 | .686 954 | .859 964 | 1.06 402 | 1.32 534 | 1.72 472 | *2.08 596* | 2.52 798 | *2.84 534* | 3.55 181 | 3.84 952 | 4.53 852 | 4.83 730 | 5.54 284 | 5.85 367 | 6.59 653 | 20 |
| 21 | .256 580 | .390 637 | .532 455 | .686 352 | .859 074 | 1.06 267 | 1.32 319 | 1.72 074 | *2.07 961* | 2.51 765 | *2.83 136* | 3.52 715 | 3.81 928 | 4.49 286 | 4.78 388 | 5.46 856 | 5.76 911 | 6.48 480 | |
| 22 | .256 432 | .390 394 | .532 085 | .685 805 | .858 266 | 1.06 145 | 1.32 124 | 1.71 714 | *2.07 387* | 2.50 832 | *2.81 876* | 3.50 499 | 3.79 213 | 4.45 199 | 4.73 612 | 5.40 237 | 5.69 386 | 6.38 568 | |
| 23 | .256 297 | .390 171 | .531 747 | .685 306 | .857 530 | 1.06 034 | 1.31 946 | 1.71 387 | *2.06 866* | 2.49 987 | *2.80 734* | 3.48 496 | 3.76 763 | 4.41 520 | 4.69 319 | 5.34 303 | 5.62 647 | 6.29 717 | |
| 24 | .256 173 | .389 967 | .531 438 | .684 850 | .856 855 | 1.05 932 | 1.31 784 | 1.71 088 | *2.06 390* | 2.49 216 | *2.79 694* | 3.46 678 | 3.74 540 | 4.38 192 | 4.65 438 | 5.28 952 | 5.56 578 | 6.21 766 | |
| 25 | .256 060 | .389 780 | .531 154 | .684 430 | .856 236 | 1.05 838 | 1.31 635 | 1.70 814 | *2.05 954* | 2.48 511 | *2.78 744* | 3.45 019 | 3.72 514 | 4.35 165 | 4.61 914 | 5.24 104 | 5.51 085 | 6.14 586 | 25 |
| 26 | .255 955 | .389 607 | .530 892 | .684 043 | .855 665 | 1.05 752 | 1.31 497 | 1.70 562 | *2.05 553* | 2.47 863 | *2.77 871* | 3.43 500 | 3.70 661 | 4.32 402 | 4.58 698 | 5.19 692 | 5.46 089 | 6.08 072 | |
| 27 | .255 858 | .389 448 | .530 649 | .683 685 | .855 137 | 1.05 673 | 1.31 370 | 1.70 329 | *2.05 183* | 2.47 266 | *2.77 068* | 3.42 103 | 3.68 959 | 4.29 870 | 4.55 754 | 5.15 658 | 5.41 527 | 6.02 134 | |
| 28 | .255 768 | .389 299 | .530 424 | .683 353 | .854 647 | 1.05 599 | 1.31 253 | 1.70 113 | *2.04 841* | 2.46 714 | *2.76 326* | 3.40 816 | 3.67 391 | 4.27 540 | 4.53 047 | 5.11 958 | 5.37 345 | 5.96 701 | |
| 29 | .255 684 | .389 161 | .530 214 | .683 044 | .854 192 | 1.05 530 | 1.31 143 | 1.69 913 | *2.04 523* | 2.46 202 | *2.75 639* | 3.39 624 | 3.65 941 | 4.25 389 | 4.50 551 | 5.08 550 | 5.33 497 | 5.91 711 | |
| 30 | .255 605 | .389 032 | .530 019 | .682 756 | .853 767 | 1.05 466 | 1.31 042 | 1.69 726 | *2.04 227* | 2.45 726 | *2.75 000* | 3.38 518 | 3.64 596 | 4.23 399 | 4.48 242 | 5.05 403 | 5.29 945 | 5.87 112 | 30 |
| 31 | .255 532 | .388 912 | .529 836 | .682 486 | .853 370 | 1.05 406 | 1.30 946 | 1.69 552 | *2.03 951* | 2.45 282 | *2.74 404* | 3.37 490 | 3.63 346 | 4.21 550 | 4.46 099 | 5.02 487 | 5.26 657 | 5.82 860 | |
| 32 | .255 464 | .388 799 | .529 665 | .682 234 | .852 998 | 1.05 350 | 1.30 857 | 1.69 389 | *2.03 693* | 2.44 868 | *2.73 848* | 3.36 531 | 3.62 180 | 4.19 830 | 4.44 105 | 4.99 779 | 5.23 603 | 5.78 918 | |
| 33 | .255 399 | .388 693 | .529 504 | .681 997 | .852 649 | 1.05 298 | 1.30 774 | 1.69 236 | *2.03 452* | 2.44 479 | *2.73 328* | 3.35 634 | 3.61 091 | 4.18 224 | 4.42 246 | 4.97 255 | 5.20 761 | 5.75 253 | |
| 34 | .255 339 | .388 593 | .529 353 | .681 774 | .852 321 | 1.05 248 | 1.30 695 | 1.69 092 | *2.03 224* | 2.44 115 | *2.72 839* | 3.34 793 | 3.60 072 | 4.16 722 | 4.40 508 | 4.94 899 | 5.18 108 | 5.71 838 | |
| 35 | .255 281 | .388 499 | .529 211 | .681 564 | .852 012 | 1.05 202 | 1.30 621 | 1.68 957 | *2.03 011* | 2.43 772 | *2.72 381* | 3.34 005 | 3.59 115 | 4.15 315 | 4.38 880 | 4.92 695 | 5.15 627 | 5.68 647 | 35 |
| 36 | .255 227 | .388 410 | .529 076 | .681 366 | .851 720 | 1.05 158 | 1.30 551 | 1.68 830 | *2.02 809* | 2.43 449 | *2.71 948* | 3.33 262 | 3.58 215 | 4.13 993 | 4.37 351 | 4.90 627 | 5.13 302 | 5.65 659 | |
| 37 | .255 176 | .388 326 | .528 949 | .681 178 | .851 444 | 1.05 117 | 1.30 485 | 1.68 709 | *2.02 619* | 2.43 145 | *2.71 541* | 3.32 563 | 3.57 367 | 4.12 748 | 4.35 913 | 4.88 685 | 5.11 117 | 5.62 856 | |
| 38 | .255 128 | .388 247 | .528 828 | .681 001 | .851 183 | 1.05 077 | 1.30 423 | 1.68 595 | *2.02 439* | 2.42 857 | *2.71 156* | 3.31 903 | 3.56 568 | 4.11 576 | 4.34 558 | 4.86 856 | 5.09 062 | 5.60 220 | |
| 39 | .255 082 | .388 171 | .528 714 | .680 833 | .850 935 | 1.05 040 | 1.30 364 | 1.68 488 | *2.02 269* | 2.42 584 | *2.70 791* | 3.31 279 | 3.55 812 | 4.10 468 | 4.33 279 | 4.85 131 | 5.07 125 | 5.57 738 | |
| 40 | .255 039 | .388 100 | .528 606 | .680 673 | .850 700 | 1.05 005 | 1.30 308 | 1.68 385 | *2.02 108* | 2.42 326 | *2.70 446* | 3.30 688 | 3.55 097 | 4.09 421 | 4.32 070 | 4.83 502 | 5.05 295 | 5.55 397 | 40 |
| 41 | .254 997 | .388 032 | .528 502 | .680 521 | .850 476 | 1.04 971 | 1.30 254 | 1.68 288 | *2.01 954* | 2.42 080 | *2.70 118* | 3.30 127 | 3.54 418 | 4.08 429 | 4.30 925 | 4.81 961 | 5.03 565 | 5.53 184 | |
| 42 | .254 958 | .387 967 | .528 404 | .680 376 | .850 263 | 1.04 939 | 1.30 204 | 1.68 195 | *2.01 808* | 2.41 847 | *2.69 807* | 3.29 595 | 3.53 775 | 4.07 488 | 4.29 839 | 4.80 501 | 5.01 926 | 5.51 090 | |
| 43 | .254 920 | .387 905 | .528 311 | .680 238 | .850 060 | 1.04 908 | 1.30 155 | 1.68 107 | *2.01 669* | 2.41 625 | *2.69 510* | 3.29 089 | 3.53 163 | 4.06 594 | 4.28 809 | 4.79 115 | 5.00 372 | 5.49 106 | |
| 44 | .254 884 | .387 846 | .528 221 | .680 107 | .849 867 | 1.04 879 | 1.30 109 | 1.68 023 | *2.01 537* | 2.41 413 | *2.69 228* | 3.28 607 | 3.52 580 | 4.05 744 | 4.27 829 | 4.77 799 | 4.98 896 | 5.47 222 | |
| 45 | .254 850 | .387 790 | .528 136 | .679 981 | .849 682 | 1.04 852 | 1.30 065 | 1.67 943 | *2.01 410* | 2.41 212 | *2.68 959* | 3.28 148 | 3.52 025 | 4.04 934 | 4.26 896 | 4.76 547 | 4.97 492 | 5.45 432 | 45 |
| 46 | .254 817 | .387 736 | .528 054 | .679 861 | .849 505 | 1.04 825 | 1.30 023 | 1.67 866 | *2.01 290* | 2.41 019 | *2.68 701* | 3.27 710 | 3.51 496 | 4.04 162 | 4.26 006 | 4.75 354 | 4.96 155 | 5.43 728 | |
| 47 | .254 786 | .387 684 | .527 976 | .679 746 | .849 336 | 1.04 800 | 1.29 982 | 1.67 793 | *2.01 174* | 2.40 835 | *2.68 456* | 3.27 291 | 3.50 990 | 4.03 426 | 4.25 158 | 4.74 216 | 4.94 880 | 5.42 106 | |
| 48 | .254 756 | .387 635 | .527 901 | .679 635 | .849 174 | 1.04 775 | 1.29 944 | 1.67 722 | *2.01 063* | 2.40 658 | *2.68 220* | 3.26 891 | 3.50 507 | 4.02 722 | 4.24 347 | 4.73 131 | 4.93 664 | 5.40 558 | |
| 49 | .254 727 | .387 587 | .527 829 | .679 530 | .849 018 | 1.04 752 | 1.29 907 | 1.67 655 | *2.00 958* | 2.40 489 | *2.67 995* | 3.26 508 | 3.50 044 | 4.02 049 | 4.23 573 | 4.72 093 | 4.92 502 | 5.39 080 | |
| 50 | .254 699 | .387 542 | .527 760 | .679 428 | .848 869 | 1.04 729 | 1.29 871 | 1.67 591 | *2.00 856* | 2.40 327 | *2.67 779* | 3.26 141 | 3.49 601 | 4.01 405 | 4.22 831 | 4.71 101 | 4.91 391 | 5.37 667 | 50 |
| 52 | .254 647 | .387 456 | .527 631 | .679 237 | .848 588 | 1.04 687 | 1.29 805 | 1.67 469 | *2.00 665* | 2.40 022 | *2.67 373* | 3.25 451 | 3.48 769 | 4.00 195 | 4.21 439 | 4.69 240 | 4.89 308 | 5.35 022 | |
| 54 | .254 599 | .387 377 | .527 510 | .679 060 | .848 328 | 1.04 648 | 1.29 743 | 1.67 356 | *2.00 488* | 2.39 741 | *2.66 998* | 3.24 815 | 3.48 002 | 3.99 081 | 4.20 158 | 4.67 528 | 4.87 392 | 5.32 591 | |
| 56 | .254 554 | .387 303 | .527 399 | .678 896 | .848 087 | 1.04 612 | 1.29 685 | 1.67 252 | *2.00 324* | 2.39 480 | *2.66 651* | 3.24 226 | 3.47 292 | 3.98 051 | 4.18 974 | 4.65 947 | 4.85 625 | 5.30 350 | |
| 58 | .254 512 | .387 234 | .527 295 | .678 743 | .847 862 | 1.04 578 | 1.29 632 | 1.67 155 | *2.00 172* | 2.39 238 | *2.66 329* | 3.23 680 | 3.46 633 | 3.97 096 | 4.17 876 | 4.64 484 | 4.83 988 | 5.28 278 | 58 |
| | | | | | | | | 90% CI | 95% CI | | 99% CI | | | | | | | | |

$t_\nu$ right half

The *t* distribution is introduced on pages 13.4 and 13.5 of the 2004 Course Notes.

(*continued overleaf*)