Table A7  **Normal Distribution**

Values of the distribution function $\Phi(z)$ [see (3), Sec. 24.8]. $\Phi(-z) = 1 - \Phi(z)$

| $z$ | $\Phi(z)$ | $z$ | $\Phi(z)$ | $z$ | $\Phi(z)$ | $z$ | $\Phi(z)$ | $z$ | $\Phi(z)$ | $z$ | $\Phi(z)$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | 0. |  | 0. |  | 0. |  | 0. |  | 0. |  | 0. |
| 0.01 | 5040 | 0.51 | 6950 | 1.01 | 8438 | 1.51 | 9345 | 2.01 | 9778 | 2.51 | 9940 |
| 0.02 | 5080 | 0.52 | 6985 | 1.02 | 8461 | 1.52 | 9357 | 2.02 | 9783 | 2.52 | 9941 |
| 0.03 | 5120 | 0.53 | 7019 | 1.03 | 8485 | 1.53 | 9370 | 2.03 | 9788 | 2.53 | 9943 |
| 0.04 | 5160 | 0.54 | 7054 | 1.04 | 8508 | 1.54 | 9382 | 2.04 | 9793 | 2.54 | 9945 |
| 0.05 | 5199 | 0.55 | 7088 | 1.05 | 8531 | 1.55 | 9394 | 2.05 | 9798 | 2.55 | 9946 |
| 0.06 | 5239 | 0.56 | 7123 | 1.06 | 8554 | 1.56 | 9406 | 2.06 | 9803 | 2.56 | 9948 |
| 0.07 | 5279 | 0.57 | 7157 | 1.07 | 8577 | 1.57 | 9418 | 2.07 | 9808 | 2.57 | 9949 |
| 0.08 | 5319 | 0.58 | 7190 | 1.08 | 8599 | 1.58 | 9429 | 2.08 | 9812 | 2.58 | 9951 |
| 0.09 | 5359 | 0.59 | 7224 | 1.09 | 8621 | 1.59 | 9441 | 2.09 | 9817 | 2.59 | 9952 |
| 0.10 | 5398 | 0.60 | 7257 | 1.10 | 8643 | 1.60 | 9452 | 2.10 | 9821 | 2.60 | 9953 |
| 0.11 | 5438 | 0.61 | 7291 | 1.11 | 8665 | 1.61 | 9463 | 2.11 | 9826 | 2.61 | 9955 |
| 0.12 | 5478 | 0.62 | 7324 | 1.12 | 8686 | 1.62 | 9474 | 2.12 | 9830 | 2.62 | 9956 |
| 0.13 | 5517 | 0.63 | 7357 | 1.13 | 8708 | 1.63 | 9484 | 2.13 | 9834 | 2.63 | 9957 |
| 0.14 | 5557 | 0.64 | 7389 | 1.14 | 8729 | 1.64 | 9495 | 2.14 | 9838 | 2.64 | 9959 |
| 0.15 | 5596 | 0.65 | 7422 | 1.15 | 8749 | 1.65 | 9505 | 2.15 | 9842 | 2.65 | 9960 |
| 0.16 | 5636 | 0.66 | 7454 | 1.16 | 8770 | 1.66 | 9515 | 2.16 | 9846 | 2.66 | 9961 |
| 0.17 | 5675 | 0.67 | 7486 | 1.17 | 8790 | 1.67 | 9525 | 2.17 | 9850 | 2.67 | 9962 |
| 0.18 | 5714 | 0.68 | 7517 | 1.18 | 8810 | 1.68 | 9535 | 2.18 | 9854 | 2.68 | 9963 |
| 0.19 | 5753 | 0.69 | 7549 | 1.19 | 8830 | 1.69 | 9545 | 2.19 | 9857 | 2.69 | 9964 |
| 0.20 | 5793 | 0.70 | 7580 | 1.20 | 8849 | 1.70 | 9554 | 2.20 | 9861 | 2.70 | 9965 |
| 0.21 | 5832 | 0.71 | 7611 | 1.21 | 8869 | 1.71 | 9564 | 2.21 | 9864 | 2.71 | 9966 |
| 0.22 | 5871 | 0.72 | 7642 | 1.22 | 8888 | 1.72 | 9573 | 2.22 | 9868 | 2.72 | 9967 |
| 0.23 | 5910 | 0.73 | 7673 | 1.23 | 8907 | 1.73 | 9582 | 2.23 | 9871 | 2.73 | 9968 |
| 0.24 | 5948 | 0.74 | 7704 | 1.24 | 8925 | 1.74 | 9591 | 2.24 | 9875 | 2.74 | 9969 |
| 0.25 | 5987 | 0.75 | 7734 | 1.25 | 8944 | 1.75 | 9599 | 2.25 | 9878 | 2.75 | 9970 |
| 0.26 | 6026 | 0.76 | 7764 | 1.26 | 8962 | 1.76 | 9608 | 2.26 | 9881 | 2.76 | 9971 |
| 0.27 | 6064 | 0.77 | 7794 | 1.27 | 8980 | 1.77 | 9616 | 2.27 | 9884 | 2.77 | 9972 |
| 0.28 | 6103 | 0.78 | 7823 | 1.28 | 8997 | 1.78 | 9625 | 2.28 | 9887 | 2.78 | 9973 |
| 0.29 | 6141 | 0.79 | 7852 | 1.29 | 9015 | 1.79 | 9633 | 2.29 | 9890 | 2.79 | 9974 |
| 0.30 | 6179 | 0.80 | 7881 | 1.30 | 9032 | 1.80 | 9641 | 2.30 | 9893 | 2.80 | 9974 |
| 0.31 | 6217 | 0.81 | 7910 | 1.31 | 9049 | 1.81 | 9649 | 2.31 | 9896 | 2.81 | 9975 |
| 0.32 | 6255 | 0.82 | 7939 | 1.32 | 9066 | 1.82 | 9656 | 2.32 | 9898 | 2.82 | 9976 |
| 0.33 | 6293 | 0.83 | 7967 | 1.33 | 9082 | 1.83 | 9664 | 2.33 | 9901 | 2.83 | 9977 |
| 0.34 | 6331 | 0.84 | 7995 | 1.34 | 9099 | 1.84 | 9671 | 2.34 | 9904 | 2.84 | 9977 |
| 0.35 | 6368 | 0.85 | 8023 | 1.35 | 9115 | 1.85 | 9678 | 2.35 | 9906 | 2.85 | 9978 |
| 0.36 | 6406 | 0.86 | 8051 | 1.36 | 9131 | 1.86 | 9686 | 2.36 | 9909 | 2.86 | 9979 |
| 0.37 | 6443 | 0.87 | 8078 | 1.37 | 9147 | 1.87 | 9693 | 2.37 | 9911 | 2.87 | 9979 |
| 0.38 | 6480 | 0.88 | 8106 | 1.38 | 9162 | 1.88 | 9699 | 2.38 | 9913 | 2.88 | 9980 |
| 0.39 | 6517 | 0.89 | 8133 | 1.39 | 9177 | 1.89 | 9706 | 2.39 | 9916 | 2.89 | 9981 |
| 0.40 | 6554 | 0.90 | 8159 | 1.40 | 9192 | 1.90 | 9713 | 2.40 | 9918 | 2.90 | 9981 |
| 0.41 | 6591 | 0.91 | 8186 | 1.41 | 9207 | 1.91 | 9719 | 2.41 | 9920 | 2.91 | 9982 |
| 0.42 | 6628 | 0.92 | 8212 | 1.42 | 9222 | 1.92 | 9726 | 2.42 | 9922 | 2.92 | 9982 |
| 0.43 | 6664 | 0.93 | 8238 | 1.43 | 9236 | 1.93 | 9732 | 2.43 | 9925 | 2.93 | 9983 |
| 0.44 | 6700 | 0.94 | 8264 | 1.44 | 9251 | 1.94 | 9738 | 2.44 | 9927 | 2.94 | 9984 |
| 0.45 | 6736 | 0.95 | 8289 | 1.45 | 9265 | 1.95 | 9744 | 2.45 | 9929 | 2.95 | 9984 |
| 0.46 | 6772 | 0.96 | 8315 | 1.46 | 9279 | 1.96 | 9750 | 2.46 | 9931 | 2.96 | 9985 |
| 0.47 | 6808 | 0.97 | 8340 | 1.47 | 9292 | 1.97 | 9756 | 2.47 | 9932 | 2.97 | 9985 |
| 0.48 | 6844 | 0.98 | 8365 | 1.48 | 9306 | 1.98 | 9761 | 2.48 | 9934 | 2.98 | 9986 |
| 0.49 | 6879 | 0.99 | 8389 | 1.49 | 9319 | 1.99 | 9767 | 2.49 | 9936 | 2.99 | 9986 |
| 0.50 | 6915 | 1.00 | 8413 | 1.50 | 9332 | 2.00 | 9772 | 2.50 | 9938 | 3.00 | 9987 |

### Table A8   Normal Distribution

Values of $z$ for given values of $\Phi(z)$ [see (3), Sec. 24.8] and $D(z) = \Phi(z) - \Phi(-z)$
Example: $z = 0.279$ if $\Phi(z) = 61\%$; $z = 0.860$ if $D(z) = 61\%$.

| % | $z(\Phi)$ | $z(D)$ | % | $z(\Phi)$ | $z(D)$ | % | $z(\Phi)$ | $z(D)$ |
|---|---|---|---|---|---|---|---|---|
| 1 | −2.326 | 0.013 | 41 | −0.228 | 0.539 | 81 | 0.878 | 1.311 |
| 2 | −2.054 | 0.025 | 42 | −0.202 | 0.553 | 82 | 0.915 | 1.341 |
| 3 | −1.881 | 0.038 | 43 | −0.176 | 0.568 | 83 | 0.954 | 1.372 |
| 4 | −1.751 | 0.050 | 44 | −0.151 | 0.583 | 84 | 0.994 | 1.405 |
| 5 | −1.645 | 0.063 | 45 | −0.126 | 0.598 | 85 | 1.036 | 1.440 |
| 6 | −1.555 | 0.075 | 46 | −0.100 | 0.613 | 86 | 1.080 | 1.476 |
| 7 | −1.476 | 0.088 | 47 | −0.075 | 0.628 | 87 | 1.126 | 1.514 |
| 8 | −1.405 | 0.100 | 48 | −0.050 | 0.643 | 88 | 1.175 | 1.555 |
| 9 | −1.341 | 0.113 | 49 | −0.025 | 0.659 | 89 | 1.227 | 1.598 |
| 10 | −1.282 | 0.126 | 50 | 0.000 | 0.674 | 90 | 1.282 | 1.645 |
| 11 | −1.227 | 0.138 | 51 | 0.025 | 0.690 | 91 | 1.341 | 1.695 |
| 12 | −1.175 | 0.151 | 52 | 0.050 | 0.706 | 92 | 1.405 | 1.751 |
| 13 | −1.126 | 0.164 | 53 | 0.075 | 0.722 | 93 | 1.476 | 1.812 |
| 14 | −1.080 | 0.176 | 54 | 0.100 | 0.739 | 94 | 1.555 | 1.881 |
| 15 | −1.036 | 0.189 | 55 | 0.126 | 0.755 | 95 | 1.645 | 1.960 |
| 16 | −0.994 | 0.202 | 56 | 0.151 | 0.772 | 96 | 1.751 | 2.054 |
| 17 | −0.954 | 0.215 | 57 | 0.176 | 0.789 | 97 | 1.881 | 2.170 |
| 18 | −0.915 | 0.228 | 58 | 0.202 | 0.806 | 97.5 | 1.960 | 2.241 |
| 19 | −0.878 | 0.240 | 59 | 0.228 | 0.824 | 98 | 2.054 | 2.326 |
| 20 | −0.842 | 0.253 | 60 | 0.253 | 0.842 | 99 | 2.326 | 2.576 |
| 21 | −0.806 | 0.266 | 61 | 0.279 | 0.860 | 99.1 | 2.366 | 2.612 |
| 22 | −0.772 | 0.279 | 62 | 0.305 | 0.878 | 99.2 | 2.409 | 2.652 |
| 23 | −0.739 | 0.292 | 63 | 0.332 | 0.896 | 99.3 | 2.457 | 2.697 |
| 24 | −0.706 | 0.305 | 64 | 0.358 | 0.915 | 99.4 | 2.512 | 2.748 |
| 25 | −0.674 | 0.319 | 65 | 0.385 | 0.935 | 99.5 | 2.576 | 2.807 |
| 26 | −0.643 | 0.332 | 66 | 0.412 | 0.954 | 99.6 | 2.652 | 2.878 |
| 27 | −0.613 | 0.345 | 67 | 0.440 | 0.974 | 99.7 | 2.748 | 2.968 |
| 28 | −0.583 | 0.358 | 68 | 0.468 | 0.994 | 99.8 | 2.878 | 3.090 |
| 29 | −0.553 | 0.372 | 69 | 0.496 | 1.015 | 99.9 | 3.090 | 3.291 |
| 30 | −0.524 | 0.385 | 70 | 0.524 | 1.036 | | | |
| 31 | −0.496 | 0.399 | 71 | 0.553 | 1.058 | 99.91 | 3.121 | 3.320 |
| 32 | −0.468 | 0.412 | 72 | 0.583 | 1.080 | 99.92 | 3.156 | 3.353 |
| 33 | −0.440 | 0.426 | 73 | 0.613 | 1.103 | 99.93 | 3.195 | 3.390 |
| 34 | −0.412 | 0.440 | 74 | 0.643 | 1.126 | 99.94 | 3.239 | 3.432 |
| 35 | −0.385 | 0.454 | 75 | 0.674 | 1.150 | 99.95 | 3.291 | 3.481 |
| 36 | −0.358 | 0.468 | 76 | 0.706 | 1.175 | 99.96 | 3.353 | 3.540 |
| 37 | −0.332 | 0.482 | 77 | 0.739 | 1.200 | 99.97 | 3.432 | 3.615 |
| 38 | −0.305 | 0.496 | 78 | 0.772 | 1.227 | 99.98 | 3.540 | 3.719 |
| 39 | −0.279 | 0.510 | 79 | 0.806 | 1.254 | 99.99 | 3.719 | 3.891 |
| 40 | −0.253 | 0.524 | 80 | 0.842 | 1.282 | | | |

**Table A9   t-Distribution**

Values of $z$ for given values of the distribution function $F(z)$ (see (8) in Sec. 25.3).
Example: For 9 degrees of freedom, $z = 1.83$ when $F(z) = 0.95$.

| $F(z)$ | Number of Degrees of Freedom | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 0.5 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.6 | 0.32 | 0.29 | 0.28 | 0.27 | 0.27 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| 0.7 | 0.73 | 0.62 | 0.58 | 0.57 | 0.56 | 0.55 | 0.55 | 0.55 | 0.54 | 0.54 |
| 0.8 | 1.38 | 1.06 | 0.98 | 0.94 | 0.92 | 0.91 | 0.90 | 0.89 | 0.88 | 0.88 |
| 0.9 | 3.08 | 1.89 | 1.64 | 1.53 | 1.48 | 1.44 | 1.41 | 1.40 | 1.38 | 1.37 |
| 0.95 | 6.31 | 2.92 | 2.35 | 2.13 | 2.02 | 1.94 | 1.89 | 1.86 | 1.83 | 1.81 |
| 0.975 | 12.7 | 4.30 | 3.18 | 2.78 | 2.57 | 2.45 | 2.36 | 2.31 | 2.26 | 2.23 |
| 0.99 | 31.8 | 6.96 | 4.54 | 3.75 | 3.36 | 3.14 | 3.00 | 2.90 | 2.82 | 2.76 |
| 0.995 | 63.7 | 9.92 | 5.84 | 4.60 | 4.03 | 3.71 | 3.50 | 3.36 | 3.25 | 3.17 |
| 0.999 | 318.3 | 22.3 | 10.2 | 7.17 | 5.89 | 5.21 | 4.79 | 4.50 | 4.30 | 4.14 |

| $F(z)$ | Number of Degrees of Freedom | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0.5 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.6 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| 0.7 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.53 | 0.53 | 0.53 | 0.53 |
| 0.8 | 0.88 | 0.87 | 0.87 | 0.87 | 0.87 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| 0.9 | 1.36 | 1.36 | 1.35 | 1.35 | 1.34 | 1.34 | 1.33 | 1.33 | 1.33 | 1.33 |
| 0.95 | 1.80 | 1.78 | 1.77 | 1.76 | 1.75 | 1.75 | 1.74 | 1.73 | 1.73 | 1.72 |
| 0.975 | 2.20 | 2.18 | 2.16 | 2.14 | 2.13 | 2.12 | 2.11 | 2.10 | 2.09 | 2.09 |
| 0.99 | 2.72 | 2.68 | 2.65 | 2.62 | 2.60 | 2.58 | 2.57 | 2.55 | 2.54 | 2.53 |
| 0.995 | 3.11 | 3.05 | 3.01 | 2.98 | 2.95 | 2.92 | 2.90 | 2.88 | 2.86 | 2.85 |
| 0.999 | 4.02 | 3.93 | 3.85 | 3.79 | 3.73 | 3.69 | 3.65 | 3.61 | 3.58 | 3.55 |

| $F(z)$ | Number of Degrees of Freedom | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 22 | 24 | 26 | 28 | 30 | 40 | 50 | 100 | 200 | $\infty$ |
| 0.5 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.6 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.25 | 0.25 | 0.25 | 0.25 |
| 0.7 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 | 0.52 |
| 0.8 | 0.86 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.84 | 0.84 |
| 0.9 | 1.32 | 1.32 | 1.31 | 1.31 | 1.31 | 1.30 | 1.30 | 1.29 | 1.29 | 1.28 |
| 0.95 | 1.72 | 1.71 | 1.71 | 1.70 | 1.70 | 1.68 | 1.68 | 1.66 | 1.65 | 1.65 |
| 0.975 | 2.07 | 2.06 | 2.06 | 2.05 | 2.04 | 2.02 | 2.01 | 1.98 | 1.97 | 1.96 |
| 0.99 | 2.51 | 2.49 | 2.48 | 2.47 | 2.46 | 2.42 | 2.40 | 2.36 | 2.35 | 2.33 |
| 0.995 | 2.82 | 2.80 | 2.78 | 2.76 | 2.75 | 2.70 | 2.68 | 2.63 | 2.60 | 2.58 |
| 0.999 | 3.50 | 3.47 | 3.43 | 3.41 | 3.39 | 3.31 | 3.26 | 3.17 | 3.13 | 3.09 |

**Table A10   Chi-square Distribution**

Values of $x$ for given values of the distribution function $F(z)$ (see Sec. 25.3 before (17)).
Example: For 3 degrees of freedom, $z = 11.34$ when $F(z) = 0.99$.

| $F(z)$ | Number of Degrees of Freedom | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 0.005 | 0.00 | 0.01 | 0.07 | 0.21 | 0.41 | 0.68 | 0.99 | 1.34 | 1.73 | 2.16 |
| 0.01 | 0.00 | 0.02 | 0.11 | 0.30 | 0.55 | 0.87 | 1.24 | 1.65 | 2.09 | 2.56 |
| 0.025 | 0.00 | 0.05 | 0.22 | 0.48 | 0.83 | 1.24 | 1.69 | 2.18 | 2.70 | 3.25 |
| 0.05 | 0.00 | 0.10 | 0.35 | 0.71 | 1.15 | 1.64 | 2.17 | 2.73 | 3.33 | 3.94 |
| | | | | | | | | | | |
| 0.95 | 3.84 | 5.99 | 7.81 | 9.49 | 11.07 | 12.59 | 14.07 | 15.51 | 16.92 | 18.31 |
| 0.975 | 5.02 | 7.38 | 9.35 | 11.14 | 12.83 | 14.45 | 16.01 | 17.53 | 19.02 | 20.48 |
| 0.99 | 6.63 | 9.21 | 11.34 | 13.28 | 15.09 | 16.81 | 18.48 | 20.09 | 21.67 | 23.21 |
| 0.995 | 7.88 | 10.60 | 12.84 | 14.86 | 16.75 | 18.55 | 20.28 | 21.95 | 23.59 | 25.19 |

| $F(z)$ | Number of Degrees of Freedom | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0.005 | 2.60 | 3.07 | 3.57 | 4.07 | 4.60 | 5.14 | 5.70 | 6.26 | 6.84 | 7.43 |
| 0.01 | 3.05 | 3.57 | 4.11 | 4.66 | 5.23 | 5.81 | 6.41 | 7.01 | 7.63 | 8.26 |
| 0.025 | 3.82 | 4.40 | 5.01 | 5.63 | 6.26 | 6.91 | 7.56 | 8.23 | 8.91 | 9.59 |
| 0.05 | 4.57 | 5.23 | 5.89 | 6.57 | 7.26 | 7.96 | 8.67 | 9.39 | 10.12 | 10.85 |
| | | | | | | | | | | |
| 0.95 | 19.68 | 21.03 | 22.36 | 23.68 | 25.00 | 26.30 | 27.59 | 28.87 | 30.14 | 31.41 |
| 0.975 | 21.92 | 23.34 | 24.74 | 26.12 | 27.49 | 28.85 | 30.19 | 31.53 | 32.85 | 34.17 |
| 0.99 | 24.72 | 26.22 | 27.69 | 29.14 | 30.58 | 32.00 | 33.41 | 34.81 | 36.19 | 37.57 |
| 0.995 | 26.76 | 28.30 | 29.82 | 31.32 | 32.80 | 34.27 | 35.72 | 37.16 | 38.58 | 40.00 |

| $F(z)$ | Number of Degrees of Freedom | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 0.005 | 8.0 | 8.6 | 9.3 | 9.9 | 10.5 | 11.2 | 11.8 | 12.5 | 13.1 | 13.8 |
| 0.01 | 8.9 | 9.5 | 10.2 | 10.9 | 11.5 | 12.2 | 12.9 | 13.6 | 14.3 | 15.0 |
| 0.025 | 10.3 | 11.0 | 11.7 | 12.4 | 13.1 | 13.8 | 14.6 | 15.3 | 16.0 | 16.8 |
| 0.05 | 11.6 | 12.3 | 13.1 | 13.8 | 14.6 | 15.4 | 16.2 | 16.9 | 17.7 | 18.5 |
| | | | | | | | | | | |
| 0.95 | 32.7 | 33.9 | 35.2 | 36.4 | 37.7 | 38.9 | 40.1 | 41.3 | 42.6 | 43.8 |
| 0.975 | 35.5 | 36.8 | 38.1 | 39.4 | 40.6 | 41.9 | 43.2 | 44.5 | 45.7 | 47.0 |
| 0.99 | 38.9 | 40.3 | 41.6 | 43.0 | 44.3 | 45.6 | 47.0 | 48.3 | 49.6 | 50.9 |
| 0.995 | 41.4 | 42.8 | 44.2 | 45.6 | 46.9 | 48.3 | 49.6 | 51.0 | 52.3 | 53.7 |

| $F(z)$ | Number of Degrees of Freedom | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 40 | 50 | 60 | 70 | 80 | 90 | 100 | > 100 (Approximation) |
| 0.005 | 20.7 | 28.0 | 35.5 | 43.3 | 51.2 | 59.2 | 67.3 | $\frac{1}{2}(h - 2.58)^2$ |
| 0.01 | 22.2 | 29.7 | 37.5 | 45.4 | 53.5 | 61.8 | 70.1 | $\frac{1}{2}(h - 2.33)^2$ |
| 0.025 | 24.4 | 32.4 | 40.5 | 48.8 | 57.2 | 65.6 | 74.2 | $\frac{1}{2}(h - 1.96)^2$ |
| 0.05 | 26.5 | 34.8 | 43.2 | 51.7 | 60.4 | 69.1 | 77.9 | $\frac{1}{2}(h - 1.64)^2$ |
| | | | | | | | | |
| 0.95 | 55.8 | 67.5 | 79.1 | 90.5 | 101.9 | 113.1 | 124.3 | $\frac{1}{2}(h + 1.64)^2$ |
| 0.975 | 59.3 | 71.4 | 83.3 | 95.0 | 106.6 | 118.1 | 129.6 | $\frac{1}{2}(h + 1.96)^2$ |
| 0.99 | 63.7 | 76.2 | 88.4 | 100.4 | 112.3 | 124.1 | 135.8 | $\frac{1}{2}(h + 2.33)^2$ |
| 0.995 | 66.8 | 79.5 | 92.0 | 104.2 | 116.3 | 128.3 | 140.2 | $\frac{1}{2}(h + 2.58)^2$ |

In the last column, $h = \sqrt{2m - 1}$, where $m$ is the number of degrees of freedom.