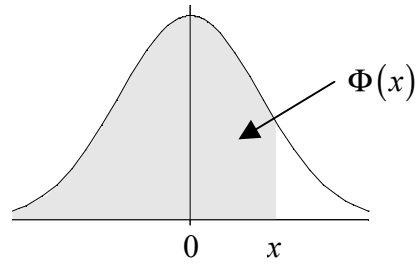


Probabilities for the Standard Normal distribution

The distribution function is denoted by $\Phi(x)$, and the probability density function is denoted by $\phi(x)$.

$$\Phi(x) = \int_{-\infty}^x \phi(t) dt = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^x e^{-\frac{1}{2}t^2} dt$$



| x | $\Phi(x)$ | x | $\Phi(x)$ | x | $\Phi(x)$ | x | $\Phi(x)$ | x | $\Phi(x)$ |
|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|
| 0.00 | 0.50000 | 0.40 | 0.65542 | 0.80 | 0.78814 | 1.20 | 0.88493 | 1.60 | 0.94520 |
| 0.01 | 0.50399 | 0.41 | 0.65910 | 0.81 | 0.79103 | 1.21 | 0.88686 | 1.61 | 0.94630 |
| 0.02 | 0.50798 | 0.42 | 0.66276 | 0.82 | 0.79389 | 1.22 | 0.88877 | 1.62 | 0.94738 |
| 0.03 | 0.51197 | 0.43 | 0.66640 | 0.83 | 0.79673 | 1.23 | 0.89065 | 1.63 | 0.94845 |
| 0.04 | 0.51595 | 0.44 | 0.67003 | 0.84 | 0.79955 | 1.24 | 0.89251 | 1.64 | 0.94950 |
| 0.05 | 0.51994 | 0.45 | 0.67364 | 0.85 | 0.80234 | 1.25 | 0.89435 | 1.65 | 0.95053 |
| 0.06 | 0.52392 | 0.46 | 0.67724 | 0.86 | 0.80511 | 1.26 | 0.89617 | 1.66 | 0.95154 |
| 0.07 | 0.52790 | 0.47 | 0.68082 | 0.87 | 0.80785 | 1.27 | 0.89796 | 1.67 | 0.95254 |
| 0.08 | 0.53188 | 0.48 | 0.68439 | 0.88 | 0.81057 | 1.28 | 0.89973 | 1.68 | 0.95352 |
| 0.09 | 0.53586 | 0.49 | 0.68793 | 0.89 | 0.81327 | 1.29 | 0.90147 | 1.69 | 0.95449 |
| 0.10 | 0.53983 | 0.50 | 0.69146 | 0.90 | 0.81594 | 1.30 | 0.90320 | 1.70 | 0.95543 |
| 0.11 | 0.54380 | 0.51 | 0.69497 | 0.91 | 0.81859 | 1.31 | 0.90490 | 1.71 | 0.95637 |
| 0.12 | 0.54776 | 0.52 | 0.69847 | 0.92 | 0.82121 | 1.32 | 0.90658 | 1.72 | 0.95728 |
| 0.13 | 0.55172 | 0.53 | 0.70194 | 0.93 | 0.82381 | 1.33 | 0.90824 | 1.73 | 0.95818 |
| 0.14 | 0.55567 | 0.54 | 0.70540 | 0.94 | 0.82639 | 1.34 | 0.90988 | 1.74 | 0.95907 |
| 0.15 | 0.55962 | 0.55 | 0.70884 | 0.95 | 0.82894 | 1.35 | 0.91149 | 1.75 | 0.95994 |
| 0.16 | 0.56356 | 0.56 | 0.71226 | 0.96 | 0.83147 | 1.36 | 0.91309 | 1.76 | 0.96080 |
| 0.17 | 0.56749 | 0.57 | 0.71566 | 0.97 | 0.83398 | 1.37 | 0.91466 | 1.77 | 0.96164 |
| 0.18 | 0.57142 | 0.58 | 0.71904 | 0.98 | 0.83646 | 1.38 | 0.91621 | 1.78 | 0.96246 |
| 0.19 | 0.57535 | 0.59 | 0.72240 | 0.99 | 0.83891 | 1.39 | 0.91774 | 1.79 | 0.96327 |
| 0.20 | 0.57926 | 0.60 | 0.72575 | 1.00 | 0.84134 | 1.40 | 0.91924 | 1.80 | 0.96407 |
| 0.21 | 0.58317 | 0.61 | 0.72907 | 1.01 | 0.84375 | 1.41 | 0.92073 | 1.81 | 0.96485 |
| 0.22 | 0.58706 | 0.62 | 0.73237 | 1.02 | 0.84614 | 1.42 | 0.92220 | 1.82 | 0.96562 |
| 0.23 | 0.59095 | 0.63 | 0.73565 | 1.03 | 0.84849 | 1.43 | 0.92364 | 1.83 | 0.96638 |
| 0.24 | 0.59483 | 0.64 | 0.73891 | 1.04 | 0.85083 | 1.44 | 0.92507 | 1.84 | 0.96712 |
| 0.25 | 0.59871 | 0.65 | 0.74215 | 1.05 | 0.85314 | 1.45 | 0.92647 | 1.85 | 0.96784 |
| 0.26 | 0.60257 | 0.66 | 0.74537 | 1.06 | 0.85543 | 1.46 | 0.92785 | 1.86 | 0.96856 |
| 0.27 | 0.60642 | 0.67 | 0.74857 | 1.07 | 0.85769 | 1.47 | 0.92922 | 1.87 | 0.96926 |
| 0.28 | 0.61026 | 0.68 | 0.75175 | 1.08 | 0.85993 | 1.48 | 0.93056 | 1.88 | 0.96995 |
| 0.29 | 0.61409 | 0.69 | 0.75490 | 1.09 | 0.86214 | 1.49 | 0.93189 | 1.89 | 0.97062 |
| 0.30 | 0.61791 | 0.70 | 0.75804 | 1.10 | 0.86433 | 1.50 | 0.93319 | 1.90 | 0.97128 |
| 0.31 | 0.62172 | 0.71 | 0.76115 | 1.11 | 0.86650 | 1.51 | 0.93448 | 1.91 | 0.97193 |
| 0.32 | 0.62552 | 0.72 | 0.76424 | 1.12 | 0.86864 | 1.52 | 0.93574 | 1.92 | 0.97257 |
| 0.33 | 0.62930 | 0.73 | 0.76730 | 1.13 | 0.87076 | 1.53 | 0.93699 | 1.93 | 0.97320 |
| 0.34 | 0.63307 | 0.74 | 0.77035 | 1.14 | 0.87286 | 1.54 | 0.93822 | 1.94 | 0.97381 |
| 0.35 | 0.63683 | 0.75 | 0.77337 | 1.15 | 0.87493 | 1.55 | 0.93943 | 1.95 | 0.97441 |
| 0.36 | 0.64058 | 0.76 | 0.77637 | 1.16 | 0.87698 | 1.56 | 0.94062 | 1.96 | 0.97500 |
| 0.37 | 0.64431 | 0.77 | 0.77935 | 1.17 | 0.87900 | 1.57 | 0.94179 | 1.97 | 0.97558 |
| 0.38 | 0.64803 | 0.78 | 0.78230 | 1.18 | 0.88100 | 1.58 | 0.94295 | 1.98 | 0.97615 |
| 0.39 | 0.65173 | 0.79 | 0.78524 | 1.19 | 0.88298 | 1.59 | 0.94408 | 1.99 | 0.97670 |
| 0.40 | 0.65542 | 0.80 | 0.78814 | 1.20 | 0.88493 | 1.60 | 0.94520 | 2.00 | 0.97725 |

Probabilities for the Standard Normal distribution

| x | $\Phi(x)$ | x | $\Phi(x)$ | x | $\Phi(x)$ | x | $\Phi(x)$ | x | $\Phi(x)$ | x | $\Phi(x)$ |
|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|
| 2.00 | 0.97725 | 2.40 | 0.99180 | 2.80 | 0.99744 | 3.20 | 0.99931 | 3.60 | 0.99984 | 4.00 | 0.99997 |
| 2.01 | 0.97778 | 2.41 | 0.99202 | 2.81 | 0.99752 | 3.21 | 0.99934 | 3.61 | 0.99985 | 4.01 | 0.99997 |
| 2.02 | 0.97831 | 2.42 | 0.99224 | 2.82 | 0.99760 | 3.22 | 0.99936 | 3.62 | 0.99985 | 4.02 | 0.99997 |
| 2.03 | 0.97882 | 2.43 | 0.99245 | 2.83 | 0.99767 | 3.23 | 0.99938 | 3.63 | 0.99986 | 4.03 | 0.99997 |
| 2.04 | 0.97932 | 2.44 | 0.99266 | 2.84 | 0.99774 | 3.24 | 0.99940 | 3.64 | 0.99986 | 4.04 | 0.99997 |
| 2.05 | 0.97982 | 2.45 | 0.99286 | 2.85 | 0.99781 | 3.25 | 0.99942 | 3.65 | 0.99987 | 4.05 | 0.99997 |
| 2.06 | 0.98030 | 2.46 | 0.99305 | 2.86 | 0.99788 | 3.26 | 0.99944 | 3.66 | 0.99987 | 4.06 | 0.99998 |
| 2.07 | 0.98077 | 2.47 | 0.99324 | 2.87 | 0.99795 | 3.27 | 0.99946 | 3.67 | 0.99988 | 4.07 | 0.99998 |
| 2.08 | 0.98124 | 2.48 | 0.99343 | 2.88 | 0.99801 | 3.28 | 0.99948 | 3.68 | 0.99988 | 4.08 | 0.99998 |
| 2.09 | 0.98169 | 2.49 | 0.99361 | 2.89 | 0.99807 | 3.29 | 0.99950 | 3.69 | 0.99989 | 4.09 | 0.99998 |
| 2.10 | 0.98214 | 2.50 | 0.99379 | 2.90 | 0.99813 | 3.30 | 0.99952 | 3.70 | 0.99989 | 4.10 | 0.99998 |
| 2.11 | 0.98257 | 2.51 | 0.99396 | 2.91 | 0.99819 | 3.31 | 0.99953 | 3.71 | 0.99990 | 4.11 | 0.99998 |
| 2.12 | 0.98300 | 2.52 | 0.99413 | 2.92 | 0.99825 | 3.32 | 0.99955 | 3.72 | 0.99990 | 4.12 | 0.99998 |
| 2.13 | 0.98341 | 2.53 | 0.99430 | 2.93 | 0.99831 | 3.33 | 0.99957 | 3.73 | 0.99990 | 4.13 | 0.99998 |
| 2.14 | 0.98382 | 2.54 | 0.99446 | 2.94 | 0.99836 | 3.34 | 0.99958 | 3.74 | 0.99991 | 4.14 | 0.99998 |
| 2.15 | 0.98422 | 2.55 | 0.99461 | 2.95 | 0.99841 | 3.35 | 0.99960 | 3.75 | 0.99991 | 4.15 | 0.99998 |
| 2.16 | 0.98461 | 2.56 | 0.99477 | 2.96 | 0.99846 | 3.36 | 0.99961 | 3.76 | 0.99992 | 4.16 | 0.99998 |
| 2.17 | 0.98500 | 2.57 | 0.99492 | 2.97 | 0.99851 | 3.37 | 0.99962 | 3.77 | 0.99992 | 4.17 | 0.99998 |
| 2.18 | 0.98537 | 2.58 | 0.99506 | 2.98 | 0.99856 | 3.38 | 0.99964 | 3.78 | 0.99992 | 4.18 | 0.99999 |
| 2.19 | 0.98574 | 2.59 | 0.99520 | 2.99 | 0.99861 | 3.39 | 0.99965 | 3.79 | 0.99992 | 4.19 | 0.99999 |
| 2.20 | 0.98610 | 2.60 | 0.99534 | 3.00 | 0.99865 | 3.40 | 0.99966 | 3.80 | 0.99993 | 4.20 | 0.99999 |
| 2.21 | 0.98645 | 2.61 | 0.99547 | 3.01 | 0.99869 | 3.41 | 0.99968 | 3.81 | 0.99993 | 4.21 | 0.99999 |
| 2.22 | 0.98679 | 2.62 | 0.99560 | 3.02 | 0.99874 | 3.42 | 0.99969 | 3.82 | 0.99993 | 4.22 | 0.99999 |
| 2.23 | 0.98713 | 2.63 | 0.99573 | 3.03 | 0.99878 | 3.43 | 0.99970 | 3.83 | 0.99994 | 4.23 | 0.99999 |
| 2.24 | 0.98745 | 2.64 | 0.99585 | 3.04 | 0.99882 | 3.44 | 0.99971 | 3.84 | 0.99994 | 4.24 | 0.99999 |
| 2.25 | 0.98778 | 2.65 | 0.99598 | 3.05 | 0.99886 | 3.45 | 0.99972 | 3.85 | 0.99994 | 4.25 | 0.99999 |
| 2.26 | 0.98809 | 2.66 | 0.99609 | 3.06 | 0.99889 | 3.46 | 0.99973 | 3.86 | 0.99994 | 4.26 | 0.99999 |
| 2.27 | 0.98840 | 2.67 | 0.99621 | 3.07 | 0.99893 | 3.47 | 0.99974 | 3.87 | 0.99995 | 4.27 | 0.99999 |
| 2.28 | 0.98870 | 2.68 | 0.99632 | 3.08 | 0.99896 | 3.48 | 0.99975 | 3.88 | 0.99995 | 4.28 | 0.99999 |
| 2.29 | 0.98899 | 2.69 | 0.99643 | 3.09 | 0.99900 | 3.49 | 0.99976 | 3.89 | 0.99995 | 4.29 | 0.99999 |
| 2.30 | 0.98928 | 2.70 | 0.99653 | 3.10 | 0.99903 | 3.50 | 0.99977 | 3.90 | 0.99995 | 4.30 | 0.99999 |
| 2.31 | 0.98956 | 2.71 | 0.99664 | 3.11 | 0.99906 | 3.51 | 0.99978 | 3.91 | 0.99995 | 4.31 | 0.99999 |
| 2.32 | 0.98983 | 2.72 | 0.99674 | 3.12 | 0.99910 | 3.52 | 0.99978 | 3.92 | 0.99996 | 4.32 | 0.99999 |
| 2.33 | 0.99010 | 2.73 | 0.99683 | 3.13 | 0.99913 | 3.53 | 0.99979 | 3.93 | 0.99996 | 4.33 | 0.99999 |
| 2.34 | 0.99036 | 2.74 | 0.99693 | 3.14 | 0.99916 | 3.54 | 0.99980 | 3.94 | 0.99996 | 4.34 | 0.99999 |
| 2.35 | 0.99061 | 2.75 | 0.99702 | 3.15 | 0.99918 | 3.55 | 0.99981 | 3.95 | 0.99996 | 4.35 | 0.99999 |
| 2.36 | 0.99086 | 2.76 | 0.99711 | 3.16 | 0.99921 | 3.56 | 0.99981 | 3.96 | 0.99996 | 4.36 | 0.99999 |
| 2.37 | 0.99111 | 2.77 | 0.99720 | 3.17 | 0.99924 | 3.57 | 0.99982 | 3.97 | 0.99996 | 4.37 | 0.99999 |
| 2.38 | 0.99134 | 2.78 | 0.99728 | 3.18 | 0.99926 | 3.58 | 0.99983 | 3.98 | 0.99997 | 4.38 | 0.99999 |
| 2.39 | 0.99158 | 2.79 | 0.99736 | 3.19 | 0.99929 | 3.59 | 0.99983 | 3.99 | 0.99997 | 4.39 | 0.99999 |
| 2.40 | 0.99180 | 2.80 | 0.99744 | 3.20 | 0.99931 | 3.60 | 0.99984 | 4.00 | 0.99997 | 4.40 | 0.99999 |