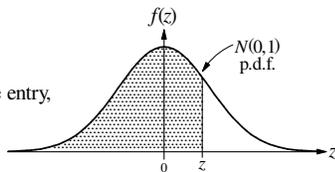


Figure 5.4. PROBABILITIES FOR THE STANDARD NORMAL DISTRIBUTION [N(0,1)] – 4,5 figure

IN THE MAIN UPPER TABLE:

$\Pr[-\infty < N(0, 1) \leq z\text{-value from table margins}] = \text{Table entry,}$
 e.g., $\Pr[-\infty < N(0, 1) \leq 0.00] = 0.5000^0 = 0.5;$



Notation:

$F(0.01) = .5040^{-1} = 0.50399$
 $F(0.05) = .5199^4 = 0.51994$
 $F(2.33) = .9^2 0097 = 0.990097,$ where $F(z)$ is the $N(0, 1)$ c.d.f.:

$$F(z) = \int_{-\infty}^z f(t) dt = \int_{-\infty}^z \frac{1}{\sqrt{2\pi}} e^{-1/2 t^2} dt.$$

THE SMALLER LOWER TABLE provides more accurate and convenient inverse lookup for selected probabilities in the interval 0.5 to 0.999 9995.

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.5000 ⁰	.5040 ⁻¹	.5080 ⁻²	.5120 ⁻³	.5160 ⁻⁵	.5199 ⁴	.5239 ²	.5279 ⁰	.5319 ⁻²	.5359 ⁻⁴
0.1	.5398 ³	.5438 ⁰	.5478 ⁻⁴	.5517 ⁻²	.5557 ⁻³	.5596 ²	.5636 ⁻⁴	.5675 ⁻¹	.5714 ²	.5753 ⁵
0.2	.5793 ⁻⁴	.5832 ⁻³	.5871 ⁻⁴	.5910 ⁻⁵	.5948 ⁻³	.5987 ¹	.6026 ⁻³	.6064 ⁻²	.6103 ⁻⁴	.6141 ⁻¹
0.3	.6179 ¹	.6217 ²	.6255 ²	.6293 ⁰	.6331 ⁻³	.6368 ³	.6406 ⁻²	.6443 ¹	.6480 ³	.6517 ³
0.4	.6554 ²	.6591 ⁰	.6628 ⁻⁴	.6664 ⁰	.6700 ³	.6736 ⁴	.6772 ⁴	.6808 ²	.6844 ⁻¹	.6879 ³
0.5	.6915 ⁻⁴	.6950 ⁻³	.6985 ⁻³	.7019 ⁴	.7054 ⁰	.7088 ⁴	.7123 ⁻⁴	.7157 ⁻⁴	.7190 ⁴	.7224 ⁰
0.6	.7257 ⁵	.7291 ⁻³	.7324 ⁻³	.7357 ⁻⁵	.7389 ¹	.7422 ⁻⁵	.7454 ⁻³	.7486 ⁻³	.7517 ⁵	.7549 ⁰
0.7	.7580 ⁴	.7611 ⁵	.7642 ⁴	.7673 ⁰	.7704 ⁻⁵	.7734 ⁻³	.7764 ⁻³	.7794 ⁻⁵	.7823 ⁰	.7852 ⁴
0.8	.7881 ⁴	.7910 ³	.7939 ⁻¹	.7967 ³	.7995 ⁵	.8023 ⁴	.8051 ¹	.8078 ⁵	.8106 ⁻³	.8133 ⁻³
0.9	.8159 ⁴	.8186 ⁻¹	.8212 ¹	.8238 ¹	.8264 ⁻¹	.8289 ⁴	.8315 ⁻³	.8340 ⁻²	.8365 ⁻⁴	.8389 ¹
1.0	.8413 ⁴	.8438 ⁻⁵	.8461 ⁴	.8485 ⁻¹	.8508 ³	.8531 ⁴	.8554 ³	.8577 ⁻¹	.8599 ³	.8621 ⁴
1.1	.8643 ³	.8665 ⁰	.8686 ⁴	.8708 ⁻⁴	.8729 ⁻⁴	.8749 ³	.8770 ⁻²	.8790 ⁰	.8810 ⁰	.8830 ⁻²
1.2	.8849 ³	.8869 ⁻⁴	.8888 ⁻³	.8907 ⁻⁵	.8925 ¹	.8944 ⁻⁵	.8962 ⁻³	.8980 ⁻⁴	.8997 ³	.9015 ⁻³
1.3	.9032 ⁰	.9049 ⁰	.9066 ⁻²	.9082 ⁴	.9099 ⁻²	.9115 ⁻¹	.9131 ⁻¹	.9147 ⁻⁴	.9162 ¹	.9177 ⁴
1.4	.9192 ⁴	.9207 ³	.9222 ⁰	.9236 ⁴	.9251 ⁻³	.9265 ⁻³	.9279 ⁻⁵	.9292 ²	.9306 ⁻⁴	.9319 ⁻¹
1.5	.9332 ⁻¹	.9345 ⁻²	.9357 ⁴	.9370 ⁻¹	.9382 ²	.9394 ³	.9406 ²	.9418 ⁻¹	.9429 ⁵	.9441 ⁻²
1.6	.9452 ⁰	.9463 ⁰	.9474 ⁻²	.9484 ⁵	.9495 ⁰	.9505 ³	.9515 ⁴	.9525 ⁴	.9535 ²	.9545 ⁻¹
1.7	.9554 ³	.9564 ⁻³	.9573 ⁻²	.9582 ⁻²	.9591 ⁻³	.9599 ⁴	.9608 ⁰	.9616 ⁴	.9625 ⁻⁴	.9633 ⁻³
1.8	.9641 ⁻³	.9649 ⁻⁵	.9656 ⁻²	.9664 ⁻²	.9671 ⁻²	.9678 ⁴	.9686 ⁻⁴	.9693 ⁻⁴	.9699 ³	.9706 ⁻²
1.9	.9713 ⁻²	.9719 ³	.9726 ⁻³	.9732 ⁰	.9738 ¹	.9744 ¹	.9750 ⁰	.9756 ⁻²	.9761 ⁵	.9767 ⁰
2.0	.9772 ⁵	.9778 ⁻²	.9783 ¹	.9788 ²	.9793 ²	.9798 ²	.9803 ⁰	.9808 ⁻³	.9812 ⁴	.9817 ⁻¹
2.1	.9821 ⁴	.9826 ⁻³	.9830 ⁰	.9834 ¹	.9838 ²	.9842 ²	.9846 ¹	.9850 ⁰	.9854 ⁻³	.9857 ⁴
2.2	.9861 ⁰	.9864 ⁵	.9868 ⁻¹	.9871 ³	.9875 ⁻⁵	.9878 ⁻²	.9881 ⁻¹	.9884 ⁰	.9887 ⁰	.9890 ⁻¹
2.3	.9893 ⁻²	.9896 ⁻⁴	.9898 ³	.9^2 0097	.9^2 0358	.9^2 0613	.9^2 0863	.9^2 1106	.9^2 1344	.9^2 1576
2.4	.9^2 1802	.9^2 2024	.9^2 2240	.9^2 2451	.9^2 2656	.9^2 2857	.9^2 3053	.9^2 3244	.9^2 3431	.9^2 3613
2.5	.9^2 3790	.9^2 3963	.9^2 4132	.9^2 4297	.9^2 4457	.9^2 4614	.9^2 4766	.9^2 4915	.9^2 5060	.9^2 5201
2.6	.9^2 5339	.9^2 5473	.9^2 5604	.9^2 5731	.9^2 5855	.9^2 5975	.9^2 6093	.9^2 6207	.9^2 6319	.9^2 6427
2.7	.9^2 6533	.9^2 6636	.9^2 6736	.9^2 6833	.9^2 6928	.9^2 7020	.9^2 7110	.9^2 7197	.9^2 7282	.9^2 7365
2.8	.9^2 7445	.9^2 7523	.9^2 7599	.9^2 7673	.9^2 7744	.9^2 7814	.9^2 7882	.9^2 7948	.9^2 8012	.9^2 8074
2.9	.9^2 8134	.9^2 8193	.9^2 8250	.9^2 8305	.9^2 8359	.9^2 8411	.9^2 8462	.9^2 8511	.9^2 8559	.9^2 8605
3.0	.9^2 8650	.9^2 8694	.9^2 8736	.9^2 8777	.9^2 8817	.9^2 8856	.9^2 8893	.9^2 8930	.9^2 8965	.9^2 8999
3.1	.9^3 0324	.9^3 0646	.9^3 0957	.9^3 1260	.9^3 1553	.9^3 1836	.9^3 2112	.9^3 2378	.9^3 2636	.9^3 2886
3.2	.9^3 3129	.9^3 3363	.9^3 3590	.9^3 3810	.9^3 4024	.9^3 4230	.9^3 4429	.9^3 4623	.9^3 4810	.9^3 4991
3.3	.9^3 5166	.9^3 5335	.9^3 5499	.9^3 5658	.9^3 5811	.9^3 5959	.9^3 6103	.9^3 6242	.9^3 6376	.9^3 6505
3.4	.9^3 6631	.9^3 6752	.9^3 6869	.9^3 6982	.9^3 7091	.9^3 7197	.9^3 7299	.9^3 7398	.9^3 7493	.9^3 7585
3.5	.9^3 7674	.9^3 7759	.9^3 7842	.9^3 7922	.9^3 7999	.9^3 8074	.9^3 8146	.9^3 8215	.9^3 8282	.9^3 8347
3.6	.9^3 8409	.9^3 8469	.9^3 8527	.9^3 8583	.9^3 8637	.9^3 8689	.9^3 8739	.9^3 8787	.9^3 8834	.9^3 8879
3.7	.9^3 8922	.9^3 8964	.9^4 0039	.9^4 0426	.9^4 0799	.9^4 1158	.9^4 1504	.9^4 1838	.9^4 2159	.9^4 2468
3.8	.9^4 2765	.9^4 3052	.9^4 3327	.9^4 3593	.9^4 3848	.9^4 4094	.9^4 4331	.9^4 4558	.9^4 4777	.9^4 4988
3.9	.9^4 5190	.9^4 5385	.9^4 5573	.9^4 5753	.9^4 5926	.9^4 6092	.9^4 6253	.9^4 6406	.9^4 6554	.9^4 6696
4.0	.9^4 6833	.9^4 6964	.9^4 7090	.9^4 7211	.9^4 7327	.9^4 7439	.9^4 7546	.9^4 7649	.9^4 7748	.9^4 7843
5	.9^6 7134									
6	.9^9 0134									
7	.9^11 8720									
8	.9^15 3779									
9	.9^18 8872									
10	.9^23 2380									
12	.9^32 8224									
14	.9^44 2207									
16	.9^57 3611									
18	.9^72 0259									
20	.9^88 7246									
25	.9^133 6943									
30	.9^197 5093									
40	.9^349 6344									
50	.9^544 8919									
60	.9^783 8762									
70	.9^1066 4577									
80	.9^1392 0976									
100	.9^2173 8656									

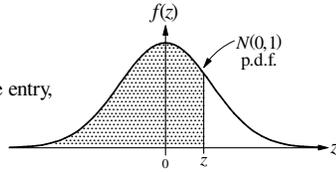
INVERSE N(0,1) C.d.f., giving z for a specified F(z) ≥ 0.5											
.50	0	.60	.2533	.70	.5244	.80	.8416	.90	1.2816	.990	2.3263
.51	.02507	.61	.2793	.71	.5534	.81	.8779	.91	1.3408	.991	2.3656
.52	.05015	.62	.3055	.72	.5828	.82	.9154	.92	1.4051	.992	2.4089
.53	.07527	.63	.3319	.73	.6128	.83	.9542	.93	1.4758	.993	2.4573
.54	.1004	.64	.3585	.74	.6433	.84	.9945	.94	1.5548	.994	2.5121
.55	.1257	.65	.3853	.75	.6745	.85	1.0364	.95	1.6449	.995	2.5758
.56	.1510	.66	.4125	.76	.7063	.86	1.0803	.96	1.7507	.996	2.6521
.57	.1764	.67	.4399	.77	.7388	.87	1.1264	.97	1.8808	.997	2.7478
.58	.2019	.68	.4677	.78	.7722	.88	1.1750	.975	1.9600	.998	2.8782
.59	.2275	.69	.4959	.79	.8064	.89	1.2265	.98	2.0537	.999	3.0902
										.9^5	3.2905
										.9^5	3.8906
										.9^5	4.4172
										.9^5	4.8916

N_{right half}

PROBABILITIES FOR THE STANDARD NORMAL DISTRIBUTION [N(0,1)] – 4,6 figure

IN THE MAIN UPPER TABLE:

$\Pr[-\infty < N(0, 1) \leq z\text{-value from table margins}] = \text{Table entry}$,
 e.g., $\Pr[-\infty < N(0, 1) \leq 0.00] = 0.5000^{00} = 0.5$;



Notation:

$F(0.01) = .5040^{-11} = 0.503\ 989$
 $F(0.05) = .5199^{39} = 0.519\ 939$
 $F(2.33) = .920097 = 0.990\ 097$, where $F(z)$ is the $N(0, 1)$ c.d.f.
 $F(z) = \int_{-\infty}^z f(t) dt = \int_{-\infty}^z \frac{1}{\sqrt{2\pi}} e^{-1/2t^2} dt$.

THE SMALLER LOWER TABLE provides more accurate and convenient inverse lookup for selected probabilities in the interval 0.5 to 0.999 9995.

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.5000 ⁰⁰	.5040 ⁻¹¹	.5080 ⁻²²	.5120 ⁻³⁴	.5160 ⁻⁴⁷	.5199 ³⁹	.5239 ²²	.5279 ⁰³	.5319 ⁻¹⁹	.5359 ⁻⁴⁴
0.1	.5398 ²⁸	.5438 ⁻⁰⁵	.5478 ⁻⁴²	.5517 ¹⁷	.5557 ⁻³⁰	.5596 ¹⁸	.5636 ⁻⁴¹	.5675 ⁻⁰⁵	.5714 ²⁴	.5753 ⁴⁵
0.2	.5793 ⁻⁴⁰	.5832 ⁻³⁴	.5871 ⁻³⁶	.5910 ⁻⁴⁶	.5948 ³⁵	.5987 ⁰⁶	.6026 ⁻³²	.6064 ²⁰	.6103 ⁻³⁹	.6141 ⁻⁰⁸
0.3	.6179 ¹¹	.6217 ²⁰	.6255 ¹⁶	.6293 ⁰⁰	.6331 ⁻²⁸	.6368 ³¹	.6406 ⁻²⁴	.6443 ⁰⁹	.6480 ²⁷	.6517 ³²
0.4	.6554 ²²	.6591 ⁻⁰³	.6628 ⁻⁴³	.6664 ⁰²	.6700 ³¹	.6736 ⁴⁵	.6772 ⁻¹²	.6808 ²²	.6844 ⁻¹⁴	.6879 ³³
0.5	.6915 ⁻³⁸	.6950 ⁻²⁶	.6985 ⁻³²	.7019 ⁴⁴	.7054 ⁰¹	.7088 ⁴⁰	.7123 ⁻⁴⁰	.7157 ⁻³⁹	.7190 ⁴³	.7224 ⁰⁵
0.6	.7257 ⁴⁷	.7291 ⁻³¹	.7324 ⁻²⁹	.7357 ⁻⁴⁷	.7389 ¹⁴	.7422 ⁻⁴⁶	.7454 ⁻²⁷	.7486 ⁻²⁹	.7517 ⁴⁸	.7549 ⁰³
0.7	.7580 ³⁶	.7611 ⁴⁸	.7642 ³⁸	.7673 ⁰⁵	.7704 ⁻⁵⁰	.7734 ⁻²⁷	.7764 ⁻²⁷	.7794 ⁻⁵⁰	.7823 ⁰⁵	.7852 ³⁶
0.8	.7881 ⁴⁵	.7910 ³⁰	.7939 ⁻⁰⁸	.7967 ³¹	.7995 ⁴⁶	.8023 ³⁷	.8051 ⁰⁵	.8078 ⁵⁰	.8106 ⁻³⁰	.8133 ⁻³³
0.9	.8159 ⁴⁰	.8186 ⁻¹¹	.8212 ¹⁴	.8238 ¹⁴	.8264 ⁻⁰⁹	.8289 ⁴⁴	.8315 ⁻²⁸	.8340 ⁻²³	.8365 ⁻⁴³	.8389 ¹³
1.0	.8413 ⁴⁵	.8438 ⁻⁴⁸	.8461 ³⁶	.8485 ⁻⁰⁵	.8508 ³⁰	.8531 ⁴¹	.8554 ²⁸	.8577 ⁻¹⁰	.8599 ²⁹	.8621 ⁴³
1.1	.8643 ³⁴	.8665 ⁰⁰	.8686 ⁴³	.8708 ⁻³⁸	.8729 ⁻⁴³	.8749 ²⁸	.8770 ⁻²⁴	.8790 ⁰⁰	.8810 ⁰⁰	.8830 ⁻²³
1.2	.8849 ³⁰	.8869 ⁻³⁹	.8888 ⁻³²	.8907 ⁻⁴⁹	.8925 ¹²	.8944 ⁻⁵⁰	.8962 ⁻³⁵	.8980 ⁻⁴²	.8997 ²⁷	.9015 ⁻²⁵
1.3	.9032 ⁰⁰	.9049 ⁰²	.9066 ⁻¹⁸	.9082 ⁴¹	.9099 ⁻²³	.9115 ⁻⁰⁸	.9131 ⁻¹⁵	.9147 ⁻⁴³	.9162 ⁰⁷	.9177 ³⁶
1.4	.9192 ⁴³	.9207 ³⁰	.9222 ⁻⁰⁴	.9236 ⁴¹	.9251 ⁻³⁴	.9265 ⁻²⁹	.9279 ⁻⁴⁵	.9292 ¹⁹	.9306 ⁻³⁷	.9319 ⁻¹²
1.5	.9332 ⁻⁰⁷	.9345 ⁻²²	.9357 ⁴⁵	.9370 ⁻⁰⁸	.9382 ²⁰	.9394 ²⁹	.9406 ²⁰	.9418 ⁻⁰⁸	.9429 ⁴⁷	.9441 ⁻¹⁷
1.6	.9452 ⁰¹	.9463 ⁰¹	.9474 ⁻¹⁶	.9484 ⁴⁹	.9495 ⁻⁰³	.9505 ²⁹	.9515 ⁴³	.9525 ⁴⁰	.9535 ²¹	.9545 ⁻¹⁴
1.7	.9554 ³⁵	.9564 ⁻³³	.9573 ⁻¹⁶	.9582 ⁻¹⁵	.9591 ⁻³⁰	.9599 ⁴¹	.9608 ⁻⁰⁴	.9616 ³⁶	.9625 ⁻³⁸	.9633 ⁻²⁷
1.8	.9641 ⁻³⁰	.9649 ⁻⁴⁸	.9656 ²⁰	.9664 ⁻²⁵	.9671 ¹⁶	.9678 ⁴³	.9686 ⁻⁴³	.9693 ⁻⁴²	.9699 ⁴⁶	.9706 ²¹
1.9	.9713 ⁻¹⁷	.9719 ³³	.9726 ⁻²⁹	.9732 ⁻⁰³	.9738 ¹⁰	.9744 ¹²	.9750 ⁰²	.9756 ⁻¹⁹	.9761 ⁴⁸	.9767 ⁰⁵
2.0	.9772 ⁵⁰	.9778 ⁻¹⁶	.9783 ⁰⁸	.9788 ²²	.9793 ²⁵	.9798 ¹⁸	.9803 ⁰¹	.9808 ⁻²⁶	.9812 ³⁷	.9817 ⁻⁰⁹
2.1	.9821 ³⁶	.9826 ⁻²⁹	.9830 ⁻⁰³	.9834 ¹⁴	.9838 ²³	.9842 ²²	.9846 ¹⁴	.9850 ⁻⁰³	.9854 ⁻²⁹	.9857 ³⁸
2.2	.9861 ⁻⁰³	.9864 ⁴⁷	.9868 ⁻⁰⁹	.9871 ²⁶	.9875 ⁻⁴⁵	.9878 ⁻²⁴	.9881 ⁻¹¹	.9884 ⁻⁰⁴	.9887 ⁻⁰⁴	.9890 ⁻¹¹
2.3	.9893 ⁻²⁴	.9896 ⁻⁴⁴	.9898 ³⁰	.920097	.920358	.920613	.920863	.921106	.921344	.921576
2.4	.921802	.922024	.922240	.922451	.922656	.922857	.923053	.923244	.923431	.923613
2.5	.923790	.923963	.924132	.924297	.924457	.924614	.924766	.924915	.925060	.925201
2.6	.925339	.925473	.925604	.925731	.925855	.925975	.926093	.926207	.926319	.926427
2.7	.926533	.926636	.926736	.926833	.926928	.927020	.927110	.927197	.927282	.927365
2.8	.927445	.927523	.927599	.927673	.927744	.927814	.927882	.927948	.928012	.928074
2.9	.928134	.928193	.928250	.928305	.928359	.928411	.928462	.928511	.928559	.928605
3.0	.928650	.928694	.928736	.928777	.928817	.928856	.928893	.928930	.928965	.928999
3.1	.9290324	.9290646	.9290957	.9291260	.9291553	.9291836	.9292112	.9292378	.9292636	.9292886
3.2	.9293129	.9293363	.9293590	.9293810	.9294024	.9294230	.9294429	.9294623	.9294810	.9294991
3.3	.9295166	.9295335	.9295499	.9295658	.9295811	.9295959	.9296103	.9296242	.9296376	.9296505
3.4	.9296631	.9296752	.9296869	.9296982	.9297091	.9297197	.9297299	.9297398	.9297493	.9297585
3.5	.9297674	.9297759	.9297842	.9297922	.9297999	.9298074	.9298146	.9298215	.9298282	.9298347
3.6	.9298409	.9298469	.9298527	.9298583	.9298637	.9298689	.9298739	.9298787	.9298834	.9298879
3.7	.9298922	.9298964	.92990039	.92990426	.92990799	.92991158	.92991504	.92991838	.92992159	.92992468
3.8	.92992765	.92993052	.92993327	.92993593	.92993848	.92994094	.92994331	.92994558	.92994777	.92994988
3.9	.92995190	.92995385	.92995573	.92995753	.92995926	.92996092	.92996253	.92996406	.92996554	.92996696
4.0	.92996833	.92996964	.92997090	.92997211	.92997327	.92997439	.92997546	.92997649	.92997748	.92997843

N₄₆
right half

N₄₆
right half

INVERSE N(0,1) C.d.f., giving z for a specified F(z) ≥ 0.5

.50	0	.60	.253 347	.70	.524 401	.80	.841 621	.90	1.281 552	.990	2.326 348
.51	.0250 689	.61	.279 319	.71	.553 385	.81	.877 896	.91	1.340 755	.991	2.365 618
.52	.0501 536	.62	.305 481	.72	.582 842	.82	.915 365	.92	1.405 072	.992	2.408 916
.53	.0752 699	.63	.331 853	.73	.612 813	.83	.954 165	.93	1.475 791	.993	2.457 263
.54	.100 434	.64	.358 459	.74	.643 345	.84	.994 458	.94	1.554 774	.994	2.512 144
.55	.125 661	.65	.385 320	.75	.674 490	.85	1.036 433	.95	1.644 854	.995	2.575 829
.56	.150 969	.66	.412 463	.76	.706 303	.86	1.080 319	.96	1.750 686	.996	2.652 070
.57	.176 374	.67	.439 913	.77	.738 847	.87	1.126 391	.97	1.880 794	.997	2.747 781
.58	.201 893	.68	.467 699	.78	.772 193	.88	1.174 987	.975	1.959 964	.998	2.878 162
.59	.227 545	.69	.495 850	.79	.806 421	.89	1.226 528	.98	2.053 749	.999	3.090 232
.935	3.290 527	.945	3.890 592	.955	4.417 173	.965	4.891 638				

Most table entries were obtained from pnorm or qnorm in R version 2.14.0