

Mathematics 103 — section 203 — Spring 2000

Table of areas under the bell curve

This table gives

$$A(x) = \int_{-\infty}^x \text{erf}(t) dt, \quad \text{erf}(t) = \frac{e^{-t^2/2}}{\sqrt{2\pi}}$$

for selected values of x in the range $[-3, 3]$. Intermediate values of $A(x)$ can be estimated crudely by linear interpolation, and more precisely by Simpson's rule

$$A(x+h) \sim A(x) + h \left(\frac{\text{erf}(x) + 4\text{erf}(x+h/2) + \text{erf}(x+h)}{6} \right)$$

For values with $x > 3$, use the estimate

$$A(x) \sim 1 - \frac{e^{-x^2/2}}{x\sqrt{2\pi}}$$

and for $x < -3$

$$A(x) \sim \frac{e^{-x^2/2}}{x\sqrt{2\pi}}.$$

x	$A(x)$	x	$A(x)$
-3.0	0.00135	-2.95	0.00159
-2.9	0.00187	-2.85	0.00219
-2.8	0.00256	-2.75	0.00298
-2.7	0.00347	-2.65	0.00402
-2.6	0.00466	-2.55	0.00539
-2.5	0.00621	-2.45	0.00714
-2.4	0.0082	-2.35	0.00939
-2.3	0.01072	-2.25	0.01222
-2.2	0.0139	-2.15	0.01578
-2.1	0.01786	-2.05	0.02018
-2.0	0.02275	-1.95	0.02559
-1.9	0.02872	-1.85	0.03216
-1.8	0.03593	-1.75	0.04006
-1.7	0.04457	-1.65	0.04947
-1.6	0.0548	-1.55	0.06057
-1.5	0.06681	-1.45	0.07353
-1.4	0.08076	-1.35	0.08851
-1.3	0.0968	-1.25	0.10565
-1.2	0.11507	-1.15	0.12507
-1.1	0.13567	-1.05	0.14686
-1.0	0.15866	-0.95	0.17106
-0.9	0.18406	-0.85	0.19766
-0.8	0.21186	-0.75	0.22663
-0.7	0.24196	-0.65	0.25785
-0.6	0.27425	-0.55	0.29116
-0.5	0.30854	-0.45	0.32636
-0.4	0.34458	-0.35	0.36317
-0.3	0.38209	-0.25	0.40129
-0.2	0.42074	-0.15	0.44038
-0.1	0.46017	-0.05	0.48006
0.0	0.5	0.05	0.51994
0.1	0.53983	0.15	0.55962

0.2	0.57926	0.25	0.59871
0.3	0.61791	0.35	0.63683
0.4	0.65542	0.45	0.67364
0.5	0.69146	0.55	0.70884
0.6	0.72575	0.65	0.74215
0.7	0.75804	0.75	0.77337
0.8	0.78814	0.85	0.80234
0.9	0.81594	0.95	0.82894
1.0	0.84134	1.05	0.85314
1.1	0.86433	1.15	0.87493
1.2	0.88493	1.25	0.89435
1.3	0.9032	1.35	0.91149
1.4	0.91924	1.45	0.92647
1.5	0.93319	1.55	0.93943
1.6	0.9452	1.65	0.95053
1.7	0.95543	1.75	0.95994
1.8	0.96407	1.85	0.96784
1.9	0.97128	1.95	0.97441
2.0	0.97725	2.05	0.97982
2.1	0.98214	2.15	0.98422
2.2	0.9861	2.25	0.98778
2.3	0.98928	2.35	0.99061
2.4	0.9918	2.45	0.99286
2.5	0.99379	2.55	0.99461
2.6	0.99534	2.65	0.99598
2.7	0.99653	2.75	0.99702
2.8	0.99744	2.85	0.99781
2.9	0.99813	2.95	0.99841
3.0	0.99865	3.05	0.99886