Table of derivatives and antiderivatives

Note that a, c denote constants.

derivative $\leftarrow$	**function** $\rightarrow$	**anti-derivative**
$f'(x)$	$f(x)$	$F(x)$
0	a	$ax + c$
nx^{n-1}	x^n $(n \neq 0, -1)$	$\dfrac{x^{n+1}}{n+1} + c$
$\dfrac{-1}{(x-a)^2}$	$\dfrac{1}{x-a}$ $(x \neq a)$	$\ln\lvert x-a\rvert + c$
$\dfrac{-b}{(x-a)^{b+1}}$	$\dfrac{1}{(x-a)^b}$ $(x \neq a, b \geq 2)$	$\dfrac{-1}{(b-1)(x-a)^{b-1}} + c$
e^x	$\exp(x) = e^x$	$e^x + c$
$\dfrac{1}{x}$	$\ln x$ $(x > 0)$	$x \ln x - x + c$
$\cos x$	$\sin x$	$-\cos x + c$
$-\sin x$	$\cos x$	$\sin x + c$
$\dfrac{1}{\cos^2 x}$	$\tan x$	$-\ln(\lvert\cos x\rvert) + c$
$\dfrac{1}{\sqrt{1-x^2}}$	$\operatorname{asin} x$ $(-1 < x < 1)$	—
$-\dfrac{1}{\sqrt{1-x^2}}$	$\operatorname{acos} x$ $(-1 < x < 1)$	—
$\dfrac{1}{1+x^2}$	$\operatorname{atan} x$	—
—	$\dfrac{1}{\sqrt{1-x^2}}$ $(-1 < x < 1)$	$\operatorname{asin} x + c$
—	$-\dfrac{1}{\sqrt{1-x^2}}$ $(-1 < x < 1)$	$\operatorname{acos} x + c$
—	$\dfrac{1}{1+x^2}$	$\operatorname{atan} x + c$

Laplace Transform Table

$$\mathcal{L}\left(f(t)\right) = F(s) = \int_0^\infty f(t)e^{-st}\,dt$$

SPECIFIC FUNCTIONS		GENERAL RULES	
$F(s)$	$f(t)$	$F(s)$	$f(t)$
$\dfrac{1}{s}$	1	$\dfrac{e^{-as}}{s}$	$H(t-a)$
$\dfrac{1}{s^n}, \quad n \in Z^+$	$\dfrac{t^{n-1}}{(n-1)!}$	$e^{-as}F(s)$	$f(t-a)H(t-a)$
$\dfrac{1}{s+a}$	e^{-at}	$F(s-a)$	$e^{at}f(t)$
$\dfrac{1}{(s+a)^n}, \quad n \in Z^+$	$e^{-at}\dfrac{t^{n-1}}{(n-1)!}$	$sF(s) - f(0)$	$f'(t)$
$\dfrac{1}{s^2+\omega^2}$	$\dfrac{\sin(\omega t)}{\omega}$	$s^2F(s) - sf(0) - f'(0)$	$f''(t)$
$\dfrac{s}{s^2+\omega^2}$	$\cos(\omega t)$	$F'(s)$	$-tf(t)$
$\dfrac{1}{(s+a)^2+\omega^2}$	$\dfrac{e^{-at}\sin(\omega t)}{\omega}$	$F^{(n)}(s)$	$(-t)^n f(t)$
$\dfrac{s+a}{(s+a)^2+\omega^2}$	$e^{-at}\cos(\omega t)$	$\dfrac{F(s)}{s}$	$\displaystyle\int_0^t f(u)\,du$
$\dfrac{1}{(s^2+\omega^2)^2}$	$\dfrac{\sin(\omega t) - \omega t\cos(\omega t)}{2\omega^3}$	$F(s)G(s)$	$\big(f*g\big)(t)$
$\dfrac{s}{(s^2+\omega^2)^2}$	$\dfrac{t\sin(\omega t)}{2\omega}$		

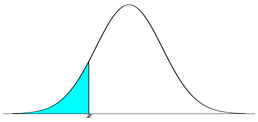
Higher derivatives:

$$\mathcal{L}\left(f^{(n)}(t)\right) = s^nF(s) - s^{n-1}f(0) - s^{n-2}f'(0) - \cdots - sf^{(n-2)}(0) - f^{(n-1)}(0)$$

The Convolution Theorem:

$$\mathcal{L}\left(f*g\right) = \mathcal{L}\left(f\right)\mathcal{L}\left(g\right) \quad \text{where} \quad \big(f*g\big)(t) = \int_0^t f(u)g(t-u)\,du$$

CUMULATIVE STANDARD NORMAL PROBABILITIES (FOR $z > 0$). The table below gives $F_Z(z)$ where $Z \sim N(0,1)$ (see shaded area in the Figure).



z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998
3.5	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998