Laplace Transform Table: Results

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

$f(t) = \mathscr{L}^{-1}\{F(s)\}$	$F(s) = \mathscr{L}\{f(t)\}$	$f(t) = \mathscr{L}^{-1}\{F(s)\}$	$F(s) = \mathscr{L}\{f(t)\}$
1	$\frac{1}{s}$	$\delta_c(t) = \delta(t-c)$	e^{-cs}
$t^n,\ n \in \mathbb{N}$	$\frac{n!}{s^{n+1}}$	$U_c(t) = U(t-c)$	$\frac{e^{-cs}}{s}$
$t^a,\ a > -1$	$\frac{\Gamma(a+1)}{s^{a+1}}$	$\frac{\sin(\omega t)}{t}$	$\arctan(\omega/s)$
e^{at}	$\frac{1}{s-a}$	$e^{-t^2/4}$	$\sqrt{\pi}\, \text{erfc}(s)\, e^{s^2}$
$t^n e^{at},\ n \in \mathbb{N}$	$\frac{n!}{(s-a)^{n+1}}$	$\text{erfc}(a/\sqrt{t})$	$\frac{e^{-2a\sqrt{s}}}{s}$
$\sin(\omega t)$	$\frac{\omega}{s^2+\omega^2}$	$\sinh(\omega t)$	$\frac{\omega}{s^2-\omega^2}$
$\cos(\omega t)$	$\frac{s}{s^2+\omega^2}$	$\cosh(\omega t)$	$\frac{s}{s^2-\omega^2}$
$t\sin(\omega t)$	$\frac{2\omega s}{(s^2+\omega^2)^2}$	$t\cos(\omega t)$	$\frac{s^2-\omega^2}{(s^2+\omega^2)^2}$

Laplace Transform Table: Reductions[1]

$f(t) = \mathscr{L}^{-1}\{F(s)\}$	$F(s) = \mathscr{L}\{f(t)\}$
$a\,f(t) + b\,g(t)$	$a\,F(s) + b\,G(s)$
$f(\omega t)$	$\frac{1}{\omega} F\left(\frac{s}{\omega}\right)$
$\delta(t-c)\cdot f(t-c)$	$f(0)e^{-cs}$
$U(t-c)\cdot f(t-c)$	$e^{-cs}F(s)$
$t^n f(t)$	$(-1)^n F^{(n)}(s)$
$e^{at} f(t)$	$F(s-a)$
$f'(t)$	$sF(s) - f(0)$
$f^{(n)}(t)$	$s^n F(s) - s^{n-1} f(0) - s^{n-2} f'(0) - \cdots - f^{(n-1)}(0)$
$\int_0^t f(z)\, dz$	$\frac{F(s)}{s}$
$f * g(t) = \int_0^t f(z) g(t-z)\, dz$ *(convolution of f and g)*	$F(s)\cdot G(s)$

[1] See, e.g., NIST's *Digital Library of Mathematical Functions* or Rapid Tables