Table of Laplace Transforms and Inverse Transforms

$f(t) = \mathcal{L}^{-1}\{F(s)\}(t)$	$F(s) = \mathcal{L}\{f(t)\}(s)$
$t^n e^{at}$	$\dfrac{n!}{(s-a)^{n+1}}\ , \quad s > a$
$e^{at} \sin bt$	$\dfrac{b}{(s-a)^2 + b^2}\ , \quad s > a$
$e^{at} \cos bt$	$\dfrac{s-a}{(s-a)^2 + b^2}\ , \quad s > a$
$e^{at} f(t)$	$F(s)\big\rvert_{s \to s-a}$
$u(t-a) f(t)$	$e^{-as}\mathcal{L}\{f(t+a)\}(s),$ alternatively,
$u(t-a)\left[f(t)\big\rvert_{t \to t-a}\right]$	$e^{-as} F(s)$
$\delta(t-a) f(t)$	$f(a) e^{-as}$
$f^{(n)}(t)$	$s^n F(s) - s^{n-1} f(0) - \cdots - f^{(n-1)}(0)$
$t^n f(t)$	$(-1)^n \dfrac{d^n}{ds^n} F(s)$, with special case
	$\mathcal{L}^{-1}\{F(s)\}(t) = -\dfrac{1}{t}\mathcal{L}^{-1}\{F'(s)\}(t)$
$\dfrac{f(t)}{t}$	$\displaystyle\int_s^\infty F(\sigma)\ d\sigma$, with special case
	$\mathcal{L}^{-1}\{F(s)\}(t) = t\mathcal{L}^{-1}\left\{\displaystyle\int_s^\infty F(\sigma)\ d\sigma\right\}(t)$
$\displaystyle\int_0^t f(\tau)\ d\tau$	$\dfrac{F(s)}{s}$
$f(t) * g(t)$	$F(s)G(s)$