Short Table of Laplace Transforms

$\mathbf{f(t)}$	$\hat{\mathbf{f}}(\mathbf{s}) = \mathcal{L}[\mathbf{f}](\mathbf{s})$
1	$\dfrac{1}{s}$
t	$\dfrac{1}{s^2}$
t^n	$\dfrac{n!}{s^{n+1}}$
$\dfrac{1}{\sqrt{t}}$	$\sqrt{\dfrac{\pi}{s}}$
e^{at}	$\dfrac{1}{s-a}$
$t^n e^{at}$	$\dfrac{n!}{(s-a)^{n+1}}$
$\sin(at)$	$\dfrac{a}{s^2+a^2}$
$\cos(at)$	$\dfrac{s}{s^2+a^2}$
$t\sin(at)$	$\dfrac{2as}{(s^2+a^2)^2}$
$t\cos(at)$	$\dfrac{s^2-a^2}{(s^2+a^2)^2}$
$\sinh(at)$	$\dfrac{a}{s^2-a^2}$
$\cosh(at)$	$\dfrac{s}{s^2-a^2}$

$\mathbf{f(t)}$	$\hat{\mathbf{f}}(\mathbf{s}) = \mathcal{L}[\mathbf{f}](\mathbf{s})$
$af(t) + bg(t)$	$a\hat{f}(s) + b\hat{g}(s)$
$f'(t)$	$s\hat{f}(s) - f(0+)$
$f^{(n)}(t)$	$s^n\hat{f}(s) - s^{n-1}f(0) - \cdots - f^{(n-1)}(0)$
$\displaystyle\int_0^t f(\tau)\,d\tau$	$\dfrac{1}{s}\hat{f}(s)$
$tf(t)$	$-\hat{f}'(s)$
$t^n f(t)$	$(-1)^n\hat{f}^{(n)}(s)$
$\dfrac{1}{t}f(t)$	$\displaystyle\int_s^\infty \hat{f}^{(n)}(\sigma)\,d\sigma$
$e^{at}f(t)$	$\hat{f}(s-a)$
$f(t-a)H(t-a)$	$e^{-as}\hat{f}(s)$
$(f*g)(t)$	$\hat{f}(s)\hat{g}(s)$

Note: $\sinh(x) = \dfrac{e^x - e^{-x}}{2}$, $\cosh(x) = \dfrac{e^x + e^{-x}}{2}$