Table of Laplace Transforms

$f(t)$ for $t \geq 0$	$\widehat{f} = \mathcal{L}(f) = \int_0^\infty e^{-st} f(t)\, dt$
1	$\frac{1}{s}$
e^{at}	$\frac{1}{s-a}$
t^n	$\frac{n!}{s^{n+1}}$ $(n = 0, 1, \ldots)$
$\sin(bt)$	$\frac{b}{s^2+b^2}$
$\cos(bt)$	$\frac{s}{s^2+b^2}$
$\sinh(bt)$	$\frac{b}{s^2-b^2}$
$\cosh(bt)$	$\frac{s}{s^2-b^2}$
$f'(t)$	$s\mathcal{L}(f) - f(0)$
$f''(t)$	$s^2\mathcal{L}(f) - sf(0) - f'(0)$
$t^n f(t)$	$(-1)^n \frac{d^n F}{ds^n}(s)$
$e^{at} f(t)$	$\mathcal{L}(f)(s-a)$
$u(t-a) = \begin{cases} 0 & t \leq a \\ 1 & t > a \end{cases}$	$\frac{e^{-as}}{s}$
$u(t-a)f(t-a)$	$e^{-as}\mathcal{L}(f)(s)$
$\delta(t-a)$	e^{-as}
$(f * g)(t) = \int_0^t f(t-\tau)g(\tau)\, d\tau$	$\mathcal{L}(f * g) = \mathcal{L}(f)\mathcal{L}(g)$
If $f(t+T) = f(t)$ for all t	i.e., f is T-periodic
then	$\mathcal{L}(f) = \frac{\left(\int_0^T f(\tau)\, d\tau\right)}{\left(1 - e^{-Ts}\right)}$