

Table of Laplace Transforms	
$f(t)$	$\mathcal{L}[f(t)] = F(s) = \int_0^\infty e^{-st} f(t) dt$
1	$\frac{1}{s}$
e^{at}	$\frac{1}{s-a}$
$\sin bt$	$\frac{b}{s^2+b^2}$
$\cos bt$	$\frac{s}{s^2+b^2}$
t^n	$\frac{n!}{s^{n+1}}$
$f(t-a)u(t-a)$	$e^{-as}f(s) \quad c > 0$
$e^{ct}f(t)$	$F(s-c)$
$\frac{df}{dt} = f'(t)$	$sF(s) - f(0)$
$\frac{d^2f}{dt^2} = f''(t)$	$s^2F(s) - sf(0) - f'(0)$
$tf(t)$	$-F'(s)$
$\int_0^t f(\tau) d\tau$	$\frac{1}{s}F(s)$
$\int_0^t f(\tau)g(t-\tau) d\tau$	$F(s)G(s)$