Table 1: Table of common Laplace Transforms

$f(t), t \geq 0$	$F(s) = \mathcal{L}\{f(t)\} = \int_0^\infty f(t)e^{-st}\,dt$
1	$1/s$
t	$1/s^2$
t^n	$n!/s^{n+1}$
e^{at}	$1/(s-a)$
te^{at}	$1/(s-a)^2$
$t^n e^{at}$	$n!/(s-a)^{n+1}$
$\sin(at)$	$a/(s^2+a^2)$
$\cos(at)$	$s/(s^2+a^2)$
$\sinh(at)$	$a/(s^2-a^2)$
$\cosh(at)$	$s/(s^2-a^2)$
Heaviside unit step function	
$H(t)$	$1/s$
$H(t-a)$	e^{-as}/s
Dirac delta function	
$\delta(t)$	1
$\delta(t-a)$	e^{-as}
derivatives	
$f'(t)$	$sF(s) - f(0^-)$
$f^{(n)}(t)$	$s^n F(s) - s^{n-1} f(0^-) - \cdots - f^{(n-1)}(0^-)$
$-tf(t)$	$F'(s)$
$(-t)^n f(t)$	$F^{(n)}(s)$
anti-derivatives	
$\int_0^t f(\tau)\,d\tau$	$F(s)/s$
$1/tf(t)$	$\int_s^\infty F(\sigma)\,d\sigma$
scaling	
$f(at), a > 0$	$1/aF(s/a)$
$1/af(t/a), a > 0$	$F(as)$
1^{st} shifting theorem	
$e^{at}f(t)$	$F(s-a)$
2^{nd} shifting theorem	
$f(t-a)H(t-a), a \geq 0$	$e^{-as}F(s)$
convolution theorem	
$f(t) * g(t)$	$F(s)G(s)$
T-periodic functions	$(f(t+T) = f(t))$
$f(t)$	$1/(1-e^{-Ts}) \int_0^T e^{-st} f(t)\,dt$
initial value theorem	
$f(0^+)$	$\lim_{s\to\infty} sF(s)$
final value theorem	(poles of sF(s) must lie in left half-plane)
$f(\infty)$	$\lim_{s\to 0} sF(s)$