

Laplace Transformation of some elementary functions:

	$F(t)$	$L\{F(t)\} = f(s)$
1.	1	$\frac{1}{s}, s > 0$
2.	t	$\frac{1}{s^2}, s > 0$
3.	t^n $n = 0, 1, 2, \dots$	$\frac{n!}{s^{n+1}}, s > 0$
4.	e^{at}	$\frac{1}{s-a}, s > a$
5.	$\sin at$	$\frac{a}{s^2 + a^2}, s > 0$
6.	$\cos at$	$\frac{s}{s^2 + a^2}, s > 0$
7.	$\sinh at$	$\frac{a}{s^2 - a^2}, s > a $
8.	$\cosh at$	$\frac{s}{s^2 - a^2}, s > a $
9.	$\frac{t^n}{(n+1)!}, n > -1$	$\frac{1}{s^{n+1}}, n > -1$

Inverse Laplace Transformation

	$f(s)$	$L^{-1}\{f(s)\} = F(t)$
1.	$\frac{1}{s}$	1
2.	$\frac{1}{s^2}$	t
3.	$\frac{1}{s^{n+1}}, \quad n = 0,1,2, \dots$	$\frac{t^n}{n!}$
4.	$\frac{1}{s-a}$	e^{at}
5.	$\frac{1}{s^2+a^2}$	$\frac{\sin at}{a}$
6.	$\frac{s}{s^2+a^2}$	$\cos at$
7.	$\frac{1}{s^2-a^2}$	$\frac{\sinh at}{a}$
8.	$\frac{s}{s^2-a^2}$	$\cosh at$
9.	$\frac{1}{s^{n+1}}, n > -1$	$\frac{t^n}{(n+1)!}, \quad n > -1$