Laplace Transforms

	$f(t)$	$\mathscr{L}\{f(t)\} = F(s)$
1.	1	$\dfrac{1}{s}$
2.	t	$\dfrac{1}{s^2}$
3.	t^n	$\dfrac{n!}{s^{n+1}}$
4.	e^{at}	$\dfrac{1}{s-a}$
5.	$\sin(kt)$	$\dfrac{k}{s^2 + k^2}$
6.	$\cos(kt)$	$\dfrac{s}{s^2 + k^2}$
7.	$\sinh(kt)$	$\dfrac{k}{s^2 - k^2}$
8.	$\cosh(kt)$	$\dfrac{s}{s^2 - k^2}$
9.	$e^{at} f(t)$	$F(s-a)$
10.	$f(t-a)\,\mathscr{U}(t-a)$	$e^{-as} F(s)$
10a.	$f(t)\,\mathscr{U}(t-a)$	$e^{-as}\,\mathscr{L}\{f(t+a)\}$
11.	$t^n f(t)$	$(-1)^n \dfrac{d^n}{ds^n} F(s)$
12.	$f^{(n)}(t)$	$s^n F(s) - s^{n-1} f(0) - \cdots - f^{(n-1)}(0)$
12a.	$f'(t)$	$sF(s) - f(0)$
12b.	$f''(t)$	$s^2 F(s) - s f(0) - f'(0)$
13.	$t^n e^{at}$	$\dfrac{n!}{(s-a)^{n+1}}$
14.	$e^{at} \sin(kt)$	$\dfrac{k}{(s-a)^2 + k^2}$
15.	$e^{at} \cos(kt)$	$\dfrac{s-a}{(s-a)^2 + k^2}$
16.	$\delta(t - t_0)$	e^{-st_0}
17.	$\delta(t)$	1
18.	$f(t)$ (with period T)	$\dfrac{1}{1 - e^{-sT}} \int_0^T e^{-st} f(t)\,dt$
19.	$\int_0^t f(\tau)\,d\tau$	$\dfrac{F(s)}{s}$
20.	$f * g = \int_0^t f(\tau) g(t - \tau)\,d\tau$	$F(s)G(s)$