Table of Laplace Transforms

$f(t)$	$F(s)$	Notes
1. 1	$\dfrac{1}{s}$ $\quad s > 0$	Sect 6.1
2. e^{at}	$\dfrac{1}{s-a}$ $\quad s > a$	Sect 6.1
3. t^n, n pos int	$\dfrac{n!}{s^{n+1}}$, $\quad s > 0$	Sect 6.1
4. t^p, $p > -1$	$\dfrac{\Gamma(p+1)}{s^{p+1}}$, $\quad s > 0$	Sect 6.1
5. $\sin(at)$	$\dfrac{a}{s^2 + a^2}$, $\quad s > 0$	Sect 6.1
6. $\cos(at)$	$\dfrac{s}{s^2 + a^2}$, $\quad s > 0$	Sect 6.1
7. $\sinh(at)$	$\dfrac{a}{s^2 - a^2}$, $\quad s > |a|$	Sect 6.1
8. $\cosh(at)$	$\dfrac{s}{s^2 - a^2}$, $\quad s > |a|$	Sect 6.1
9. $e^{at}\sin(bt)$	$\dfrac{b}{(s-a)^2 + b^2}$, $\quad s > a$	Sect 6.1
10. $e^{at}\cos(bt)$	$\dfrac{s-a}{(s-a)^2 + b^2}$, $\quad s > a$	Sect 6.1
11. $t^n e^{at}$, n pos int	$\dfrac{n!}{(s-a)^{n+1}}$, $\quad s > a$	Sect 6.1
12. $u_c(t)$ or $u(t-c)$	$\dfrac{e^{-cs}}{s}$	Sect 6.3
13. $u_c(t)f(t-c)$	$e^{-cs}F(s)$	Sect 6.3
14. $e^{ct}f(t)$	$F(s-c)$	Sect 6.3
15. $f(ct)$	$\dfrac{1}{c}F\left(\dfrac{s}{c}\right)$, $\quad c > 0$	Sect 6.3
16. $f(t) * g(t)$	$F(s)G(s)$	Sect 6.6
17. $\delta(t-c)$	e^{-cs}	Sect 6.5
18. $f^{(n)}(t)$	$s^n F(s) - s^{n-1}f(0) - \ldots - f^{n-1}(0)$	Sect 6.2
19. $(-t)^n f(t)$	$F^{(n)}(s)$	Sect 6.2

Notes:

$\sinh(t) = \frac{1}{2}(e^t - e^{-t})$ and $\cosh(t) = \frac{1}{2}(e^t + e^{-t})$, $u_c(t)$ is the Heaviside function, and $\Gamma(p+1)$ is the Gamma function. The asterisk ($*$) denotes convolution.