TABLE 4.1   A Short Table of (Unilateral) Laplace Transforms

No.	$x(t)$	$X(s)$
1	$\delta(t)$	1
2	$u(t)$	$\dfrac{1}{s}$
3	$tu(t)$	$\dfrac{1}{s^2}$
4	$t^n u(t)$	$\dfrac{n!}{s^{n+1}}$
5	$e^{\lambda t} u(t)$	$\dfrac{1}{s - \lambda}$
6	$te^{\lambda t} u(t)$	$\dfrac{1}{(s - \lambda)^2}$
7	$t^n e^{\lambda t} u(t)$	$\dfrac{n!}{(s - \lambda)^{n+1}}$
8a	$\cos bt \, u(t)$	$\dfrac{s}{s^2 + b^2}$
8b	$\sin bt \, u(t)$	$\dfrac{b}{s^2 + b^2}$
9a	$e^{-at} \cos bt \, u(t)$	$\dfrac{s + a}{(s + a)^2 + b^2}$
9b	$e^{-at} \sin bt \, u(t)$	$\dfrac{b}{(s + a)^2 + b^2}$
10a	$re^{-at} \cos (bt + \theta) \, u(t)$	$\dfrac{(r \cos \theta)s + (ar \cos \theta - br \sin \theta)}{s^2 + 2as + (a^2 + b^2)}$
10b	$re^{-at} \cos (bt + \theta) \, u(t)$	$\dfrac{0.5re^{j\theta}}{s + a - jb} + \dfrac{0.5re^{-j\theta}}{s + a + jb}$
10c	$re^{-at} \cos (bt + \theta) \, u(t)$	$\dfrac{As + B}{s^2 + 2as + c}$
	$r = \sqrt{\dfrac{A^2 c + B^2 - 2ABa}{c - a^2}}$	
	$\theta = \tan^{-1}\left(\dfrac{Aa - B}{A\sqrt{c - a^2}}\right)$	
	$b = \sqrt{c - a^2}$	
10d	$e^{-at}\left[A \cos bt + \dfrac{B - Aa}{b} \sin bt\right] u(t)$	$\dfrac{As + B}{s^2 + 2as + c}$
	$b = \sqrt{c - a^2}$	