Tabla A-1. Parejas de la transformada de Laplace.

	$f(t)$	$F(s)$
1	Unidad de impulso $\delta(t)$	1
2	Unidad de paso $1(t)$	$\frac{1}{s}$
3	t	$\frac{1}{s^2}$
4	$\frac{t^{n-1}}{(n-1)!} \quad (n = 1, 2, 3, ...)$	$\frac{1}{s^n}$
5	$t^n \quad (n = 1, 2, 3, ...)$	$\frac{n!}{s^{n+1}}$
6	e^{-at}	$\frac{1}{s+a}$
7	te^{-at}	$\frac{1}{(s+a)^2}$
8	$\frac{1}{(n-1)!} t^{n-1}e^{-at} \quad (n = 1, 2, 3, ...)$	$\frac{1}{(s+a)^n}$
9	$t^n e^{-at} \quad (n = 1, 2, 3, ...)$	$\frac{n!}{(s+a)^{n+1}}$
10	sen ωt	$\frac{\omega}{s^2 + \omega^2}$
11	$\cos \omega t$	$\frac{s}{s^2 + \omega^2}$
12	senh ωt	$\frac{\omega}{s^2 - \omega^2}$
13	$\cosh \omega t$	$\frac{s}{s^2 - \omega 2}$
14	$\frac{1}{a}(1 - e^{-at)}$	$\frac{1}{s(s+a)}$
15	$\frac{1}{b-a}(e^{-at} - e^{-bt})$	$\frac{1}{(s+a)(s+b)}$
16	$\frac{1}{b-a}(be^{-bt} - ae^{-at})$	$\frac{s}{(s+a)(s+b)}$
17	$\frac{1}{ab}\left[1 + \frac{1}{a-b}(be^{-at} - ae^{-bt})\right]$	$\frac{1}{s(s+a)(s+b)}$

(continúa)

Tabla A-1. (*Continuación*).

	$f(t)$	$F(s)$
18	$\frac{1}{a^2}(1 - e^{-at} - ate^{-at})$	$\frac{1}{s(s+a)^2}$
19	$\frac{1}{a^2}(at - 1 + e^{-at})$	$\frac{1}{s^2(s+a)}$
20	$e^{-at}\,\text{sen}\,\omega t$	$\frac{\omega}{(s+a)^2 + \omega^2}$
21	$e^{-at}\cos\omega t$	$\frac{s+a}{(s+a)^2 + \omega^2}$
22	$\frac{\omega_n}{\sqrt{1-\zeta^2}}\,e^{-\zeta\omega_n t}\,\text{sen}\,\omega_n\sqrt{1-\zeta^2}\,t \quad (0 < \zeta < 1)$	$\frac{\omega_n^2}{s^2 + 2\zeta\omega_n s + \omega_n^2}$
23	$-\frac{1}{\sqrt{1-\zeta^2}}\,e^{-\zeta\omega_n t}\,\text{sen}\,(\omega_n\sqrt{1-\zeta^2}\,t - \phi)$ $\phi = \tan^{-1}\frac{\sqrt{1-\zeta^2}}{\zeta}$ $(0 < \zeta < 1,\ 0 < \phi < \pi/2)$	$\frac{s}{s^2 + 2\zeta\omega_n s + \omega_n^2}$
24	$-\frac{1}{\sqrt{1-\zeta^2}}\,e^{-\zeta\omega_n t}\,\text{sen}\,(\omega_n\sqrt{1-\zeta^2}\,t + \phi)$ $\phi = \tan^{-1}\frac{\sqrt{1-\zeta^2}}{\zeta}$ $(0 < \zeta < 1,\ 0 < \phi < \pi/2)$	$\frac{\omega_n^2}{s(s^2 + 2\zeta\omega_n s + \omega_n^2)}$
25	$1 - \cos\omega t$	$\frac{\omega^2}{s(s^2 + \omega^2)}$
26	$\omega t - \text{sen}\,\omega t$	$\frac{\omega^3}{s^2(s^2 + \omega^2)}$
27	$\text{sen}\,\omega t - \omega t\cos\omega t$	$\frac{2\omega^3}{(s^2 + \omega^2)^2}$
28	$\frac{1}{2\omega}\,t\,\text{sen}\,\omega t$	$\frac{s}{(s^2 + \omega^2)^2}$
29	$t\cos\omega t$	$\frac{s^2 - \omega^2}{(s^2 + \omega^2)^2}$
30	$\frac{1}{\omega_2^2 - \omega_1^2}(\cos\omega_1 t - \cos\omega_2 t) \qquad (\omega_1^2 \neq \omega_2^2)$	$\frac{s}{(s^2 + \omega_1^2)(s^2 + \omega_2^2)}$
31	$\frac{1}{2\omega}(\text{sen}\,\omega t + \omega t\cos\omega t)$	$\frac{s^2}{(s^2 + \omega^2)^2}$

Tabla A-2. Propiedades de la transformada de Laplace.

1	$\mathscr{L}[Af(t)] = AF(s)$
2	$\mathscr{L}[f_1(t) \pm f_2(t)] = F_1(s) \pm F_2(s)$
3	$\mathscr{L}_\pm\left[\dfrac{d}{dt}f(t)\right] = sF(s) - f(0\pm)$
4	$\mathscr{L}_\pm\left[\dfrac{d^2}{dt^2}f(t)\right] = s^2F(s) - sf(0\pm) - \dot{f}(0\pm)$
5	$\mathscr{L}_\pm\left[\dfrac{d^n}{dt^n}f(t)\right] = s^nF(s) - \sum_{k=1}^{n} s^{n-k}\overset{(k-1)}{f}(0\pm)$ donde $\overset{(k-1)}{f(t)} = \dfrac{d^{k-1}}{dt^{k-1}}f(t)$
6	$\mathscr{L}_\pm\left[\int f(t)\,dt\right] = \dfrac{F(s)}{s} + \dfrac{1}{s}\left[\int f(t)\,dt\right]_{t=0\pm}$
7	$\mathscr{L}_{\pm\,\pm}\left[\int\cdots\int f(t)\,(dt)^n\right] = \dfrac{F(s)}{s^n} + \sum_{k=1}^{n}\dfrac{1}{s^{n-k+1}}\left[\int\cdots\int f(t)\,(dt)^k\right]_{t=0\pm}$
8	$\mathscr{L}\left[\int_0^t f(t)\,dt\right] = \dfrac{F(s)}{s}$
9	$\int_0^\infty f(t)\,dt = \lim_{s\to 0} F(s)$ si $\int_0^\infty f(t)\,dt$ salidas
10	$\mathscr{L}[e^{-\alpha t}f(t)] = F(s+a)$
11	$\mathscr{L}[f(t-\alpha)1(t-\alpha)] = e^{-\alpha s}F(s) \quad a \geqslant 0$
12	$\mathscr{L}[tf(t)] = -\dfrac{dF(s)}{ds}$
13	$\mathscr{L}[t^2f(t)] = \dfrac{d^2}{ds^2}F(s)$
14	$\mathscr{L}[t^nf(t)] = (-1)^n\dfrac{d^n}{ds^n}F(s) \quad (n = 1, 2, 3, \ldots)$
15	$\mathscr{L}\left[\dfrac{1}{t}f(t)\right] = \int_s^\infty F(s)\,ds$ si $\lim_{t\to 0}\dfrac{1}{t}f(t)$ salidas
16	$\mathscr{L}\left[f\left(\dfrac{1}{a}\right)\right] = aF(as)$
17	$\mathscr{L}\left[\int_0^t f_1(t-\tau)f_2(\tau)\,d\tau\right] = F_1(s)F_2(s)$
18	$\mathscr{L}[f(t)g(t)] = \dfrac{1}{2\pi j}\int_{c-j\omega}^{c+j\infty} F(p)G(s-p)\,dp$

Por último se presentan dos teoremas frecuentemente utilizados junto con las transformadas de Laplace de la función pulso y de la función impulso.

Teorema de valor inicial	$f(0+) = \lim\limits_{t\to 0+} f(t) = \lim\limits_{s\to\infty} sF(s)$
Teorema de valor final	$f(\infty) = \lim\limits_{t\to\infty} f(t) = \lim\limits_{s\to 0} sF(s)$
Función pulso $f(t) = \frac{A}{t_0} 1(t) - \frac{A}{t_0} 1(t - t_0)$	$\mathscr{L}[f(t)] = \frac{A}{t_0 s} - \frac{A}{t_0 s} e^{-st_0}$
Función impulso $g(t) = \lim\limits_{t_0\to 0} \frac{A}{t_0}$, para $0 < t < t_0$; $= 0$, para $t < 0$, $t_0 < t$	$\mathscr{L}[g(t)] = \lim\limits_{t_0\to 0} \left[\frac{A}{t_0 s}(1 - e^{-st_0})\right] = \lim\limits_{t_0\to 0} \frac{\frac{d}{dt_0}[A(1 - e^{-st_0})]}{\frac{d}{dt_0}(t_0 s)} = \frac{As}{s} = A$