	f(t)	**F(s)**		**f(t)**	**F(s)**
1	$\delta(t)$	1	**2**	$u(t)$	$\frac{1}{s}$
3	t	$\frac{1}{s^2}$	**4**	$\frac{t^{n-1}}{(n-1)!} \quad (n=1,2,3,\ldots)$	$\frac{1}{s^n}$
5	$t^n \quad (n=1,2,3,\ldots)$	$\frac{n!}{s^{n+1}}$	**6**	e^{-at}	$\frac{1}{s+a}$
7	$t\cdot e^{-at}$	$\frac{1}{(s+a)^2}$	**8**	$\frac{1}{(n-1)!}t^{n-1}e^{-at} \quad (n=1,2,3,\ldots)$	$\frac{1}{(s+a)^n}$
9	$t^n\cdot e^{-at} \quad (n=1,2,3,\ldots)$	$\frac{n!}{(s+a)^{n+1}}$	**10**	$\sin\omega t$	$\frac{\omega}{s^2+\omega^2}$
11	$\cos\omega t$	$\frac{s}{s^2+\omega^2}$	**12**	$\sinh\omega t$	$\frac{\omega}{s^2-\omega^2}$
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	$\frac{1}{ab}\left[1+\frac{1}{a-b}(be^{-at}-ae^{-bt})\right]$	$\frac{1}{s(s+a)(s+b)}$	**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**	$e^{-at}\sin\omega t$	$\frac{\omega}{(s+a)^2+\omega^2}$
21	$e^{-at}\cos\omega t$	$\frac{s+a}{(s+a)^2+\omega^2}$	**22**	$\frac{\omega_n}{\sqrt{1-\zeta^2}}e^{-\zeta\omega_n t}\sin\omega_n\sqrt{1-\zeta^2}\,t$	$\frac{\omega_n^2}{s^2+2\zeta\omega_n s+\omega_n^2}$
23	$-\frac{1}{\sqrt{1-\zeta^2}}e^{-\zeta\omega_n t}\sin(\omega_n\sqrt{1-\zeta^2}\,t-\phi)\,,\ \phi=\tan^{-1}\frac{\sqrt{1-\zeta^2}}{\zeta}$				$\frac{s}{s^2+2\zeta\omega_n s+\omega_n^2}$
24	$1-\frac{1}{\sqrt{1-\zeta^2}}e^{-\zeta\omega_n t}\sin(\omega_n\sqrt{1-\zeta^2}\,t+\phi)\,,\ \phi=\tan^{-1}\frac{\sqrt{1-\zeta^2}}{\zeta}$				$\frac{\omega_n^2}{s(s^2+2\zeta\omega_n s+\omega_n^2)}$
25	$1-\cos\omega t$	$\frac{\omega^2}{s(s^2+\omega^2)}$	**26**	$\omega t-\sin\omega t$	$\frac{\omega^3}{s^2(s^2+\omega^2)}$
27	$\sin\omega t - \omega t\cos\omega t$	$\frac{2\omega^3}{(s^2+\omega^2)^2}$	**28**	$\frac{1}{2\omega}t\sin\omega t$	$\frac{s}{(s^2+\omega^2)^2}$
29	$t\cos\omega t$	$\frac{s^2-\omega^2}{(s^2+\omega^2)^2}$	**30**	$\frac{1}{2\omega}(\sin\omega t+\omega t\cos\omega t)$	$\frac{s^2}{(s^2+\omega^2)^2}$
31	$\frac{1}{\omega_2^2-\omega_1^2}(\cos\omega_1 t-\cos\omega_2 t) \quad (\omega_1^2\neq\omega_2^2)$				$\frac{s}{(s^2+\omega_1^2)(s^2+\omega_2^2)}$
32	$\frac{1}{\omega}\sqrt{(\alpha-a)+\omega}\cdot e^{-at}\sin(\omega t+\phi), \quad \phi=\tan^{-1}\frac{\omega}{\alpha-a}$				$\frac{s+\alpha}{(s+a)^2+\omega^2}$

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	$\mathscr{L}_{\pm}\left[\frac{d}{dt} f(t)\right] = sF(s) - f(0\pm)$	**4**	$\mathscr{L}_{\pm}\left[\frac{d^2}{dt^2} f(t)\right] = s^2F(s) - sf(0\pm) - \dot{f}(0\pm)$
5	$\mathscr{L}_{\pm}\left[\frac{d^n}{dt^n} f(t)\right] = s^nF(s) - \sum_{k=1}^{n} s^{n-k} \overset{(k-1)}{f}(0\pm) \quad , \overset{(k-1)}{f}(t) = \frac{d^{k-1}}{dt^{k-1}} f(t)$		
6	$\mathscr{L}_{\pm}\left[\int f(t)dt\right] = \frac{F(s)}{s} + \frac{\left[\int f(t)dt\right]_{t=0\pm}}{s}$	**7**	$\mathscr{L}_{\pm}\left[\int_0^t f(t)dt\right] = \frac{F(s)}{s}$
8	$\mathscr{L}_{\pm}\left[\iint f(t)\, dt\, dt\right] = \frac{F(s)}{s^2} + \frac{\left[\int f(t)dt\right]_{t=0\pm}}{s^2} + \frac{\left[\iint f(t)\, dt\, dt\right]_{t=0\pm}}{s}$		
9	$\mathscr{L}_{\pm}\left[\int \ldots \int f(t)\,(dt)^n\right] = \frac{F(s)}{s^n} + \sum_{k=1}^{n} \frac{1}{s^{n-k+1}}\left[\int \ldots \int f(t)\,(dt)^k\right]_{t=0\pm}$		
10	$\int_0^{\infty} f(t)dt = \lim_{s \to 0} \mathrm{F(s)} \quad , \int_0^{\infty} f(t)dt \quad \text{varsa}$	**11**	$\mathscr{L}\left[e^{-at} f(t)\right] = F(s+a)$
12	$\mathscr{L}\left[f(t-\alpha)1(t-\alpha)\right] = e^{-as}F(s) \quad \alpha \geq 0$	**13**	$\mathscr{L}\left[tf(t)\right] = -\frac{dF(s)}{ds}$
14	$\mathscr{L}\left[t^2 f(t)\right] = \frac{d^2}{ds^2} F(s)$	**15**	$\mathscr{L}\left[t^n f(t)\right] = (-1)^n \frac{d^n}{ds^n} F(s) \qquad n = 1,2,3,\ldots$
16	$\mathscr{L}\left[\frac{1}{t} f(t)\right] = \int_s^{\infty} F(s)ds$	**17**	$\mathscr{L}\left[f\left(\frac{t}{a}\right)\right] = aF(as)$