Transformadas de Laplace

F(t)	$\mathcal{L}\{F(t)\}=f(s)$
1	$\frac{1}{s}$, $s>0$
t	$\frac{1}{s^2}$, $s>0$
$t^n \quad n=1,2,3...$	$\frac{n!}{s^{n+1}}$, $s>0$
$t^n \quad n>-1$	$\frac{\Gamma(n+1)}{s^{n+1}}$, $s>0$
$\sqrt{t}$	$\frac{\sqrt{\pi}}{2}s^{\frac{-3}{2}}$
$\frac{1}{\sqrt{t}}$	$\sqrt{\pi}\,s^{\frac{-1}{2}}$
e^{at}	$\frac{1}{s-a}$, $s>a$
$sen\,at$	$\frac{a}{s^2+a^2}$, $s>0$
$\cos at$	$\frac{s}{s^2+a^2}$, $s>0$
$sen\,h(at)$	$\frac{a}{s^2-a^2}$, $s>\lvert a\rvert$
$\cos h(at)$	$\frac{s}{s^2-a^2}$, $s>\lvert a\rvert$
$e^{at}sen(wt)$	$\frac{w}{(s-a)^2+w^2}$, $s>a$

F(t)	$\mathcal{L}\{F(t)\} = f(s)$
$e^{at}\cos(wt)$	$\dfrac{s-a}{(s-a)^2+w^2}$, $s > a$
$t\,sen(wt)$	$\dfrac{2ws}{(s^2+w^2)^2}$, $s > 0$
$t\cos(wt)$	$\dfrac{s^2-w^2}{(s^2+w^2)^2}$, $s > 0$
$[F'(t)]$	$s\mathcal{L}[F(t)] - F(0)$
$[F''(t)]$	$s^2\mathcal{L}[F(t)] - sF(0) - F'(0)$
$[F^n(t)]$	$s^n[F(t)] - s^{n-1}F(0) - s^{n-2}F'(0) - \ldots\ldots\ldots - F^{n-1}(0)$

$$\mathcal{L}(\mathrm{F(t)}) = f(s) \Rightarrow \frac{-d}{ds}F(s) = \mathcal{L}(\mathrm{t\ F(t)})$$

$$f * g = \int_0^t f(u)\,g(t-u)\,du$$

$$\mathcal{L}\left(\int_0^t F(u)\,G(t-u)\,du\right) = f(s)\bullet g(s)$$

$$\mathcal{L}^{-1}[f(s)\bullet g(s)] = \int_0^t F(u)\,G(t-u)\,du = F * G$$

$$\mathcal{L}^{-1}\left[\frac{f(s)}{s}\right] = \int_0^t f(\theta)\,d\theta$$

Escalón

$$\mathcal{L}[U_a(t)] = \frac{e^{-as}}{s}$$

Segundo teorema de traslación

$$\mathcal{L}[f(t-a)\,\mu_a(t)] = e^{-as}F(s)$$

$$\mathcal{L}^{-1}\left[e^{-as}F(s)\right] = f(t-a)\,\mu_a(t)$$