

## 3.6 Tabela de Transformadas de Laplace

Transformadas de Laplace Elementares			
$f(t) = \mathcal{L}^{-1}(F)(t)$	$F(s) = \mathcal{L}(f)(s)$	$f(t) = \mathcal{L}^{-1}(F)(t)$	$F(s) = \mathcal{L}(f)(s)$
1	$\frac{1}{s}$ , para $s > 0$	$e^{at}$	$\frac{1}{s-a}$ , para $s > a$
$\cos at$	$\frac{s}{s^2 + a^2}$ , para $s > 0$	$\text{sen } at$	$\frac{a}{s^2 + a^2}$ , para $s > 0$
$t^n$ , para $n = 0, 1, 2, \dots$	$\frac{n!}{s^{n+1}}$ , para $s > 0$	$e^{at}f(t)$	$F(s-a)$
$f'(t)$	$sF(s) - f(0)$	$f''(t)$	$s^2F(s) - sf(0) - f'(0)$
$t \cos at$	$\frac{s^2 - a^2}{(s^2 + a^2)^2}$ , $s > 0$	$t \text{ sen } at$	$\frac{2as}{(s^2 + a^2)^2}$ , $s > 0$
$\text{sen } at - at \cos at$	$\frac{2a^3}{(s^2 + a^2)^2}$ , $s > 0$	$\delta(t - t_0)$	$e^{-t_0s}$ , $s > 0$
$u_a(t) = \begin{cases} 0, & 0 \leq t < a \\ 1, & t \geq a \end{cases}$	$\frac{e^{-as}}{s}$ , para $s > 0$	$u_a(t)f(t-a)$	$e^{-as}F(s)$
$f(t)\delta(t - t_0)$	$e^{-t_0s}f(t_0)$ , $s > 0$	$\int_0^t f(t-\tau)g(\tau)d\tau$	$F(s)G(s)$