Tabela de Transformadas de Laplace

	$f(t)$	$F(s)=\mathscr{L}\{f(t)\}=\int_0^{+\infty} e^{-st} f(t)dt$
1	1	$\frac{1}{s}$
2	t^n ($n=1,2,...$)	$\frac{n!}{s^{n+1}}$
3	t^p ($p>-1$)	$\frac{\Gamma(p+1)}{s^{p+1}}$
4	e^{at}	$\frac{1}{s-a}$
5	$e^{at}t^n$ ($n=1,2,...$)	$\frac{n!}{(s-a)^{n+1}}$
6	$\sin bt$	$\frac{b}{s^2+b^2}$
7	$\cos bt$	$\frac{s}{s^2+b^2}$
8	$\sinh bt$	$\frac{b}{s^2-b^2}$
9	$\cosh bt$	$\frac{s}{s^2-b^2}$
10	$e^{at}\sin bt$	$\frac{b}{(s-a)^2+b^2}$
11	$e^{at}\cos bt$	$\frac{s-a}{(s-a)^2+b^2}$
12	$u(t-c)$	$\frac{e^{-cs}}{s}$
13	$u(t-c)f(t-c)$	$e^{-cs}F(s)$
14	$t \sin at$	$\frac{2as}{(s^2+a^2)^2}$
15	$t \cos at$	$\frac{s^2-a^2}{(s^2+a^2)^2}$
16	$\sin at - at \cos at$	$\frac{2a^3}{(s^2+a^2)^2}$
17	$\sin at + at \cos at$	$\frac{2as^2}{(s^2+a^2)^2}$
18	$\int_0^t f(t-\tau)g(\tau)d\tau$	$F(s)G(s)$
19	$\delta(t-c)$	e^{-cs}
20	$f^{(n)}(t)$	$s^nF(s)-s^{n-1}f(0)-...-f^{(n-1)}(0)$
21	$t^nf(t)$	$(-1)^nF^{(n)}(s)$
22	$f(t+T)=f(t)$	$\frac{\int_0^T e^{-st}dt}{1-e^{-sT}}$

PROPRIEDADES	
Transformada de Laplace	***Transformada Inversa de Laplace***
$\mathcal{L}\{f+g\}=\mathcal{L}\{f\} + \mathcal{L}\{g\}$	$\mathcal{L}^{-1}\{F+G\}=\mathcal{L}^{-1}\{F\} + \mathcal{L}^{-1}\{G\}$
$\mathcal{L}\{cf\} = c\mathcal{L}\{f\}$	$\mathcal{L}^{-1}\{cF\}= c\mathcal{L}^{-1}\{F\}$
$\mathcal{L}\{f'\}= s\mathcal{L}\{f\}- f(0)$	$\mathcal{L}^{-1}\{F(s)\}=\frac{(-1)^n}{t^n}\mathcal{L}^{-1}\left(\frac{d^nF(s)}{ds^n}\right)$
$\mathcal{L}\{f''\}= s^2\mathcal{L}\{f\}- sf(0) - f'(0)$	$\mathcal{L}^{-1}\left\{\frac{F(s)}{s}\right\}=\int_0^t f(\tau)d\tau$
$\mathcal{L}\{f^{(n)}\}= s^n\mathcal{L}\{f\} - s^{n-1}f(0) - s^{n-2}f'(0) - \dots - f^{(n-1)}(0)$	$\mathcal{L}^{-1}(F(s-a)) = e^{at}f(t)$
$\mathcal{L}\{e^{at}f(t)\}=F(s-a)$	
$\mathcal{L}\left\{t^n f(t)\right\}=(-1)^n\frac{d^n}{ds^n}F(s)$	
$\mathcal{L}\left\{f(at)\right\}=\frac{1}{a}F\left(\frac{s}{a}\right)$	
$\mathcal{L}\left\{f * g\right\}= \mathcal{L}\{f\}\mathcal{L}\{g\}$	
$\mathcal{L}\left\{\int_0^t f(\tau)\, d\tau\right\}=\frac{1}{s}F(s)$	
$\mathcal{L}\left\{\frac{f(t)}{t}\right\}=\int_s^\infty F(\varepsilon)\, d\varepsilon$	
$\lim_{s\to\infty} sF(s) = f(0)$	
$\lim_{s\to 0} sF(s) = f(\infty)$	

Fonte: Stanley Farlow ,"*An Introdution to Differential Equations and their Applications", Mc Graw-Hill*