$\mathcal{L}\{f'(t)\} = sY(s) - f(0)$ | $\mathcal{L}\{f''(t)\} = s^2Y(s) - sf(0) - f'(0)$

**Tabela de transformadas de Laplace**

| $f(t) = \mathcal{L}^{-1}\{F(s)\}$ | $F(s) = \mathcal{L}\{f(t)\}$ |
|---|---|
| $1$ | $\frac{1}{s} \quad s > 0$ |
| $e^{at}$ | $\frac{1}{s-a} \quad s > a$ |
| $t^n \quad (n\text{: inteiro positivo})$ | $\frac{n!}{s^{n+1}} \quad s > 0$ |
| $sen\ at$ | $\frac{a}{s^2+a^2} \quad s > 0$ |
| $cos\ at$ | $\frac{s}{s^2+a^2} \quad s > 0$ |
| $senh\ at$ | $\frac{a}{s^2-a^2} \quad s > \lvert a\rvert$ |
| $cosh\ at$ | $\frac{s}{s^2-a^2} \quad s > \lvert a\rvert$ |
| $e^{at} sen\ bt$ | $\frac{b}{(s-a)^2+b^2} \quad s > a$ |
| $e^{at} cos\ bt$ | $\frac{s-a}{(s-a)^2+b^2} \quad s > a$ |
| $e^{at}t^n \quad (n\text{: inteiro positivo})$ | $\frac{n!}{(s-a)^{n+1}} \quad s > a$ |
| $u_c(t)$ | $\frac{e^{-cs}}{s} \quad s > 0$ |
| $u_c(t)f(t-c)$ | $e^{-cs}F(s)$ |
| $e^{ct}f(t)$ | $F(s-c)$ |
| $\delta(t-c)$ | $e^{-cs}$ |
| $h(t) = f(t) * g(t) = \int_0^t g(t-\tau)f(\tau)d\tau$ | $H(s) = F(s)G(s)$ |