Algumas fórmulas de derivação

$(k\,f)' = k\,f' \qquad (k \in \mathbb{R})$	$(f^\alpha)' = \alpha\, f^{\alpha-1} f' \qquad (\alpha \in \mathbb{R})$
$(a^f)' = f'\, a^f\, \ln a \qquad (a \in \mathbb{R}^+)$	$(\log_a f)' = \frac{f'}{f\,\ln a} \qquad (a \in \mathbb{R}^+ \setminus \{1\})$
$(\operatorname{sen} f)' = f'\,\cos f$	$(\cos f)' = -f'\,\operatorname{sen} f$
$(\operatorname{tg} f)' = f'\,\sec^2 f = \frac{f'}{\cos^2 f}$	$(\operatorname{cotg} f)' = -f'\,\operatorname{cosec}^2 f = -\frac{f'}{\operatorname{sen}^2 f}$
$(\operatorname{arcsen} f)' = \frac{f'}{\sqrt{1-f^2}}$	$(\arccos f)' = -\frac{f'}{\sqrt{1-f^2}}$
$(\operatorname{arctg} f)' = \frac{f'}{1+f^2}$	$(\operatorname{arccotg} f)' = -\frac{f'}{1+f^2}$

Alguns desenvolvimentos em série de MacLaurin

- $\dfrac{1}{1-x} = \displaystyle\sum_{n=0}^{\infty} x^n = 1 + x + x^2 + \cdots + x^n + \cdots, \quad x \in]-1, 1[$
- $e^x = \displaystyle\sum_{n=0}^{\infty} \frac{x^n}{n!} = 1 + x + \frac{x^2}{2!} + \cdots + \frac{x^n}{n!} + \cdots, \quad x \in \mathbb{R}$
- $\operatorname{sen} x = \displaystyle\sum_{n=0}^{\infty} (-1)^n \frac{x^{2n+1}}{(2n+1)!} = x - \frac{x^3}{3!} + \cdots + (-1)^n \frac{x^{2n+1}}{(2n+1)!} + \cdots, \quad x \in \mathbb{R}$
- $\cos x = \displaystyle\sum_{n=0}^{\infty} (-1)^n \frac{x^{2n}}{(2n)!} = 1 - \frac{x^2}{2!} + \cdots + (-1)^n \frac{x^{2n}}{(2n)!} + \cdots, \quad x \in \mathbb{R}.$

Algumas transformadas de Laplace

$$F(s) = \mathcal{L}\{f(t)\}(s), \quad s > s_f$$

função	transformada
$t^n \quad (n \in \mathbb{N}_0)$	$\frac{n!}{s^{n+1}}\,,\ s > 0$
$e^{at} \quad (a \in \mathbb{R})$	$\frac{1}{s-a}\,,\ s > a$
$\operatorname{sen}(at) \quad (a \in \mathbb{R})$	$\frac{a}{s^2+a^2}\,,\ s > 0$
$\cos(at) \quad (a \in \mathbb{R})$	$\frac{s}{s^2+a^2}\,,\ s > 0$
$\operatorname{senh}(at) \quad (a \in \mathbb{R})$	$\frac{a}{s^2-a^2}\,,\ s > \lvert a\rvert$
$\cosh(at) \quad (a \in \mathbb{R})$	$\frac{s}{s^2-a^2}\,,\ s > \lvert a\rvert$

função	transformada
$e^{\lambda t} f(t) \quad (\lambda \in \mathbb{R})$	$F(s-\lambda)$
$H_a(t) f(t-a) \quad (a > 0)$	$e^{-as} F(s)$
$f(at) \quad (a > 0)$	$\frac{1}{a}\, F\left(\frac{s}{a}\right)$
$t^n f(t) \quad (n \in \mathbb{N})$	$(-1)^n F^{(n)}(s)$
$f'(t) \quad (n \in \mathbb{N})$	$sF(s) - f(0)$
$f''(t) \quad (n \in \mathbb{N})$	$s^2 F(s) - s f(0) - f'(0)$
$f^{(n)}(t) \quad (n \in \mathbb{N})$	$s^n F(s) - \sum_{k=1}^{n} s^{n-k} f^{(k-1)}(0)$