



Cálculo

Regras de derivação

(Omitem-se os domínios das funções e considera-se a uma constante apropriada.)

$$(a)' = 0$$

$$(a^x)' = a^x \ln a$$

$$\operatorname{sen}' x = \cos x$$

$$\operatorname{tg}' x = \sec^2 x$$

$$\sec' x = \sec x \operatorname{tg} x$$

$$\operatorname{sh}' x = \operatorname{ch} x$$

$$\operatorname{th}' x = \operatorname{sech}^2 x$$

$$\operatorname{sech}' x = -\operatorname{sech} x \operatorname{th} x$$

$$\arcsen' x = \frac{1}{\sqrt{1-x^2}}$$

$$\arctg' x = \frac{1}{1+x^2}$$

$$\operatorname{arcsec}' x = \frac{1}{x\sqrt{x^2-1}}$$

$$\operatorname{argsh}' x = \frac{1}{\sqrt{1+x^2}}$$

$$\operatorname{argth}' x = \frac{1}{1-x^2}$$

$$\operatorname{argsech}' x = \frac{-1}{x\sqrt{1-x^2}}$$

$$(x^a)' = a x^{a-1}$$

$$\log_a' x = \frac{1}{x \ln a}$$

$$\cos' x = -\operatorname{sen} x$$

$$\operatorname{cotg}' x = -\operatorname{cosec}^2 x$$

$$\operatorname{cosec}' x = -\operatorname{cosec} x \operatorname{cotg} x$$

$$\operatorname{ch}' x = \operatorname{sh} x$$

$$\operatorname{coth}' x = -\operatorname{cosech}^2 x$$

$$\operatorname{cosech}' x = -\operatorname{cosech} x \operatorname{coth} x$$

$$\arccos' x = \frac{-1}{\sqrt{1-x^2}}$$

$$\operatorname{arccotg}' x = \frac{-1}{1+x^2}$$

$$\operatorname{arccosec}' x = \frac{-1}{x\sqrt{x^2-1}}$$

$$\operatorname{argch}' x = \frac{1}{\sqrt{x^2-1}}$$

$$\operatorname{argcth}' x = \frac{1}{1-x^2}$$

$$\operatorname{argcosech}' x = \frac{-1}{|x|\sqrt{1+x^2}}$$

Recorda-se ainda que

$$(f(x) \pm g(x))' = f'(x) \pm g'(x)$$

$$\left(\frac{f(x)}{g(x)}\right)' = \frac{f'(x)g(x) - f(x)g'(x)}{g^2(x)}$$

$$(f^{-1})'(x) = \frac{1}{f'(f^{-1}(x))}$$

$$(f(x)g(x))' = f'(x)g(x) + f(x)g'(x)$$

$$(g \circ u)'(x) = g'(u(x)) u'(x)$$