Cálculo

Regras de derivação

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

$a' = 0$

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

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

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

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

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

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

$(e^x)' = e^x$

$(\ln x)' = \dfrac{1}{x}$

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

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

$\operatorname{tg}' x = \dfrac{1}{\cos^2 x}$

$\operatorname{cotg}' x = -\dfrac{1}{\operatorname{sen}^2 x}$

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

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

$\operatorname{th}' x = \dfrac{1}{\operatorname{ch}^2 x}$

$\operatorname{coth}' x = -\dfrac{1}{\operatorname{sh}^2 x}$

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

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

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

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

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

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

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

$\operatorname{argcoth}' x = \dfrac{1}{1-x^2}$

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

$(f^{-1})'(y) = \dfrac{1}{f'(f^{-1}(y))}$