Universidade do Minho
Dep. de Matemática e Aplicações

Algumas regras de derivação
(estamos a omitir os domínios de definição das funções)

$C' = 0, \quad C$ constante

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

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

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

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

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

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

$\sec' x = \sec x \, \text{tg} \, x$

$\text{sh}'x = \text{ch} \, x$

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

$\text{sech}'x = -\text{sech} \, x \, \text{th} \, x$

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

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

$\text{arcsec}'x = \dfrac{1}{x\sqrt{x^2 - 1}}$

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

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

$\text{argsech}'x = \dfrac{-1}{x\sqrt{1 - x^2}}$

$(x^\alpha)' = \alpha \, x^{\alpha - 1}, \quad (\alpha \in \mathbb{R})$

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

$\left(f^{-1}\right)'(x) = \dfrac{1}{f'(f^{-1}(x))}$

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

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

$\cos' x = -\text{sen} \, x$

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

$\text{cosec}'x = -\text{cosec} \, x \, \text{cotg} \, x$

$\text{ch}'x = \text{sh} \, x$

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

$\text{cosech}'x = -\text{cosech} \, x \, \text{coth} \, x$

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

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

$\text{arccosec}'x = \dfrac{-1}{x\sqrt{x^2 - 1}}$

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

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

$\text{argcosech}'x = \dfrac{-1}{x\sqrt{1 + x^2}}$