Licenciatura em Engenharia Informática

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

$$C' = 0, \quad C \text{ constante}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\cosec'x = -\cosec x\ \cotg x$$

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

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

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

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

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

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

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

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

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

$$\text{arcotg}'x = \frac{-1}{1+x^2}$$

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

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

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

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

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

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

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

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