# Regras básicas de derivação

| Função | Derivada |
| --- | --- |
| $C,\ C \in \mathbb{R}$ | $0$ |
| $x$ | $1$ |
| $x^{\alpha}$ | $\alpha\, x^{\alpha-1}$ |
| $[u(x)]^{\alpha}$ | $\alpha\, [u(x)]^{\alpha-1}\, u'(x)$ |
| $\sqrt{u(x)}$ | $\dfrac{u'(x)}{2\sqrt{u(x)}}$ |
| $\operatorname{sen}(u(x))$ | $\cos(u(x))\, u'(x)$ |
| $\cos(u(x))$ | $-\operatorname{sen}(u(x))\, u'(x)$ |
| $\operatorname{tg}(u(x))$ | $\sec^2(u(x))\, u'(x)$ |
| $\operatorname{cotg}(u(x))$ | $-\operatorname{cosec}^2(u(x))\, u'(x)$ |
| $\operatorname{arcsen}(u(x))$ | $\dfrac{u'(x)}{\sqrt{1-(u(x))^2}}$ |
| $\operatorname{arccos}(u(x))$ | $-\dfrac{u'(x)}{\sqrt{1-(u(x))^2}}$ |
| $\operatorname{arctg}(u(x))$ | $\dfrac{u'(x)}{1+(u(x))^2}$ |
| $\operatorname{arccotg}(u(x))$ | $-\dfrac{u'(x)}{1+(u(x))^2}$ |
| $a^{u(x)}$ | $\ln(a)\, a^{u(x)}\, u'(x)$ |
| $e^{u(x)}$ | $e^{u(x)}\, u'(x)$ |
| $\log_a(u(x))$ | $\dfrac{u'(x)}{\ln(a)\, u(x)}$ |
| $\ln(u(x))$ | $\dfrac{u'(x)}{u(x)}$ |

| Função | Derivada |
| --- | --- |
| $C\, u(x),\ C \in \mathbb{R}$ | $C\, u'(x)$ |
| $u(x) + v(x)$ | $u'(x) + v'(x)$ |
| $u(x) - v(x)$ | $u'(x) - v'(x)$ |
| $u(x)v(x)$ | $u'(x)v(x) + u(x)v'(x)$ |
| $\dfrac{u(x)}{v(x)}$ | $\dfrac{u'(x)v(x) - u(x)v'(x)}{(v(x))^2}$ |
| $u\,(v(x))$ | $u'\,(v(x))\ v'(x)$ |