

**Fórmulas de Derivação:**

$$f'(x) = \lim_{\Delta x \rightarrow 0} \frac{f(x + \Delta x) - f(x)}{\Delta x} \quad f'(x_0) = \lim_{x \rightarrow x_0} \frac{f(x) - f(x_0)}{x - x_0}$$

- 1)  $y = C(cte)$  →  $y' = 0$
- 2)  $y = t$  →  $y' = 1$
- 3)  $y = C.v$  →  $y' = C.v'$
- 4)  $y = u.v$  →  $y' = u'.v + u.v'$
- 5)  $y = u.v.w$  →  $y' = u'.v.w + v'.u.w + w'.u.v$
- 6)  $y = \frac{u}{v}$  →  $y' = \frac{u'.v - u.v'}{v^2}$
- 7)  $y = u^m$  →  $y' = m.u^{(m-1)}.u'$
- 8)  $y = e^u$  →  $y' = e^u . u'$
- 9)  $y = \log_a(u)$  →  $y' = \frac{u'}{u \cdot \ln(a)}$
- 10)  $y = \ln(u)$  →  $y' = \frac{u'}{u}$
- 11)  $y = \text{sen}(u)$  →  $y' = \cos(u) \cdot u'$
- 12)  $y = \cos(u)$  →  $y' = -\text{sen}(u) \cdot u'$
- 13)  $y = \text{tg}(u)$  →  $y' = \sec^2(u) \cdot u'$
- 14)  $y = u + v + w$  →  $y' = u' + v' + w'$
- 15)  $y = a^u$  →  $y' = a^u \cdot \ln a \cdot u'$
- 16)  $y = u^v$  →  $y' = v.u^{v-1}.u' + u^v \cdot \ln u \cdot v'$
- 17)  $y = \cot g(u)$  →  $y' = -u' \cdot \cos \sec^2(u)$
- 18)  $y = \sec(u)$  →  $y' = u' \cdot \sec(u) \cdot \text{tg}(u)$
- 19)  $y = \cos \sec(u)$  →  $y' = -u' \cdot \cos \sec(u) \cdot \cot g(u)$
- 20)  $y = \text{arcsen}(u)$  →  $y' = \frac{u'}{\sqrt{1-u^2}}$
- 21)  $y = \text{arccos}(u)$  →  $y' = -\frac{u'}{\sqrt{1-u^2}}$
- 22)  $y = \text{arc t g}(u)$  →  $y' = \frac{u'}{1+u^2}$