

Tabela de Derivadas

Considere: $u = u(x)$, $v = v(x)$, $y' = \frac{dy}{dx}$ e $u' = \frac{du}{dx}$

“k” , “a” e “ α ” como constantes.

Propriedade: Linearidade $\frac{d}{dx}(ku + v) = k \frac{d}{dx}(u) + \frac{d}{dx}(v)$

Fórmulas:

1) $y = k$	$y' = 0$	11) $y = \text{senu}$	$y' = u' \cos u$
2) $y = ku$	$y' = ku'$	12) $y = \cos u$	$y' = -u' \text{sen } u$
3) $y = u^\alpha$	$y' = \alpha u^{\alpha-1} u'$	13) $y = \text{tg } u$	$y' = u' \text{sec}^2 u$
4) $y = a^u$, $a \neq 1$ e $a > 0$	$y' = \ln a a^u u'$	14) $y = \text{cotg } u$	$y' = -u' \text{cosec}^2 u$
5) $y = e^u$	$y' = e^u u'$	15) $y = \text{sec } u$	$y' = u' \text{tg } u \text{sec } u$
6) $y = \log_a u$	$y' = \frac{1}{\ln a} \frac{u'}{u}$	16) $y = \text{cosec } u$	$y' = -u' \text{cotg } u \text{cosec } u$
7) $y = \ln u$	$y' = \frac{u'}{u}$	17) $y = \text{arcsenu}$	$y' = \frac{1}{\sqrt{1-u^2}} u'$
8) $y = u \cdot v$	$y' = u \cdot v' + v \cdot u'$	18) $y = \text{arctg } u$	$y' = \frac{1}{1+u^2} u'$
9) $y = \frac{u}{v}$	$y' = \frac{v \cdot u' - u \cdot v'}{v^2}$	19) $y = \text{senh } u$	$y' = u' \text{cosh } u$
10) $y = u^v$	$y' = v u^{v-1} u' + u^v \ln u v'$	20) $y = \text{cosh } u$	$y' = u' \text{senh } u$

Regra da Cadeia: $u = u(x)$ e $x = x(t)$ então: $\frac{du}{dt} = \frac{du}{dx} \cdot \frac{dx}{dt}$ (função composta)

Paramétrica: $y = y(t)$ e $x = x(t)$ então: $\frac{dy}{dx} = \frac{\frac{dy}{dt}}{\frac{dx}{dt}}$