

DERIVADAS

Sejam $u \equiv u(x)$ e $v \equiv v(x)$ funções reais de variáveis reais.

1. $c' = 0, \quad c = \text{constante}$	2. $x' = 1$
3. $(u \pm v)' = u' \pm v'$	4. $(cu)' = cu', \quad c = \text{constante}$
5. $(uv)' = u'v + uv'$	6. $\left(\frac{u}{v}\right)' = \frac{u'v - uv'}{v^2}$
7. $(u^r)' = r u^{r-1}u', \quad r \in \mathbb{R}$	8. $(\sqrt[n]{u})' = \frac{u'}{n\sqrt[n]{u^{n-1}}}, \quad n \in \mathbb{N}$
9. $(e^u)' = u'e^u$	10. $(a^u)' = a^u u' \ln a, \quad a \in \mathbb{R}^+$
11. $(\ln(u))' = \frac{u'}{u}$	12. $(\log_a(u))' = \frac{1}{\ln a} \frac{u'}{u}$
13. $(u^v)' = u^v v' \ln(u) + v u^{v-1}u'$	
14. $(\text{sen}(u))' = u' \cos(u)$	15. $(\cos(u))' = -u' \text{sen}(u)$
16. $(\text{tg}(u))' = \frac{u'}{\cos^2(u)} = u' \sec^2(u)$	17. $(\text{cotg}(u))' = -\frac{u'}{\text{sen}^2(u)} = -u' \text{cosec}^2(u)$
18. $(\sec(u))' = u' \sec(u) \text{tg}(u)$	19. $(\text{cosec}(u))' = -u' \text{cosec}(u) \text{cotg}(u)$
20. $(\arcsen(u))' = \frac{u'}{\sqrt{1-u^2}}$	21. $(\arccos(u))' = -\frac{u'}{\sqrt{1-u^2}}$
22. $(\text{arctg}(u))' = \frac{u'}{1+u^2}$	23. $(\text{arccotg}(u))' = -\frac{u'}{1+u^2}$
24. $(\text{arcsec}(u))' = \frac{u'}{u\sqrt{1+u^2}}$	25. $(\text{arccosec}(u))' = -\frac{u'}{u\sqrt{1-u^2}}$
26. $(\text{senh}(u))' = u' \cosh(u)$	27. $(\cosh(u))' = u' \text{senh}(u)$
28. $(\text{tgh}(u))' = \frac{u'}{\cosh^2(u)} = u' \text{sech}^2(u)$	29. $(\text{cotgh}(u))' = -\frac{u'}{\text{senh}^2(u)} = -u' \text{cosech}^2(u)$
30. $(\text{sech}(u))' = -u' \text{tgh}(u) \text{sech}(u)$	31. $(\text{cosech}(u))' = -u' \text{cotgh}(u) \text{cosech}(u)$
32. $(\text{argsh}(u))' = \frac{u'}{\sqrt{u^2+1}}$	33. $(\text{argch}(u))' = \frac{u'}{\sqrt{u^2-1}}$
34. $(\text{argtgh}(u))' = \frac{u'}{1-u^2}$	35. $(\text{argcotgh}(u))' = \frac{u'}{1-u^2}$
36. $(\text{argsech}(u))' = -\frac{u'}{u\sqrt{1-u^2}}$	37. $(\text{argcosech}(u))' = -\frac{u'}{u\sqrt{1+u^2}}$