# DERIVADAS

**1.** $\dfrac{dau}{dx} = a\dfrac{du}{dx}$

**2.** $\dfrac{d(u+v)}{dx} = \dfrac{du}{dx} + \dfrac{dv}{dx}$

**3.** $\dfrac{d(uv)}{dx} = u\dfrac{dv}{dx} + v\dfrac{du}{dx}$

**4.** $\dfrac{d(u/v)}{dx} = \dfrac{v(du/dx) - u(dv/dx)}{v^2}$

**5.** $\dfrac{d(u^n)}{dx} = nu^{n-1}\dfrac{du}{dx}$

**6.** $\dfrac{d(u^v)}{dx} = vu^{v-1}\dfrac{du}{dx} + u^v(\log u)\dfrac{dv}{dx}$

**7.** $\dfrac{d(e^u)}{dx} = e^u\dfrac{du}{dx}$

**8.** $\dfrac{d(e^{au})}{dx} = ae^{au}\dfrac{du}{dx}$

**9.** $\dfrac{da^u}{dx} = a^u(\log a)\dfrac{du}{dx}$

**10.** $\dfrac{d(\log u)}{dx} = \dfrac{1}{u}\dfrac{du}{dx}$

**11.** $\dfrac{d(\log_a u)}{dx} = \dfrac{1}{u(\log a)}\dfrac{du}{dx}$

**12.** $\dfrac{d\sin u}{dx} = \cos u\dfrac{du}{dx}$

**13.** $\dfrac{d\cos u}{dx} = -\operatorname{sen} u\dfrac{du}{dx}$

**14.** $\dfrac{d\tan u}{dx} = \sec^2 u\dfrac{du}{dx}$

**15.** $\dfrac{d\cot u}{dx} = -\csc^2 u\dfrac{du}{dx}$

**16.** $\dfrac{d\sec u}{dx} = \tan u \sec u\dfrac{du}{dx}$

**17.** $\dfrac{d\csc u}{dx} = -(\cot u)(\csc u)\dfrac{du}{dx}$

**18.** $\dfrac{d\arcsin u}{dx} = \dfrac{1}{\sqrt{1-u^2}}\dfrac{du}{dx}$

**19.** $\dfrac{d\arccos u}{dx} = \dfrac{-1}{\sqrt{1-u^2}}\dfrac{du}{dx}$

**20.** $\dfrac{d\arctan u}{dx} = \dfrac{1}{1+u^2}\dfrac{du}{dx}$

**21.** $\dfrac{d\operatorname{arccot} u}{dx} = \dfrac{-1}{1+u^2}\dfrac{du}{dx}$

**22.** $\dfrac{d\operatorname{arcsec} u}{dx} = \dfrac{1}{u\sqrt{u^2-1}}\dfrac{du}{dx}$

**23.** $\dfrac{d\operatorname{arccsc} u}{dx} = \dfrac{-1}{\sqrt{u^2-1}}\dfrac{du}{dx}$

**24.** $\dfrac{d\operatorname{senh} u}{dx} = \cosh u\dfrac{du}{dx}$

**25.** $\dfrac{d\cosh u}{dx} = \operatorname{senh} u\dfrac{du}{dx}$

**26.** $\dfrac{d\tanh u}{dx} = \operatorname{sech}^2 u\dfrac{du}{dx}$

**27.** $\dfrac{d\coth u}{dx} = -(\operatorname{csch}^2 u)\dfrac{du}{dx}$

**28.** $\dfrac{d\operatorname{sech} u}{dx} = -(\operatorname{sech} u)(\tanh u)\dfrac{du}{dx}$

**29.** $\dfrac{d\operatorname{csch} u}{dx} = -(\operatorname{csch} u)(\coth u)\dfrac{du}{dx}$

**30.** $\dfrac{d\operatorname{senh}^{-1} u}{dx} = \dfrac{1}{\sqrt{1+u^2}}\dfrac{du}{dx}$

**31.** $\dfrac{d\cosh^{-1}u}{dx} = \dfrac{1}{\sqrt{u^2-1}}\dfrac{du}{dx}$

**32.** $\dfrac{d\tanh^{-1}u}{dx} = \dfrac{1}{1-u^2}\dfrac{du}{dx}$

**33.** $\dfrac{d\coth^{-1}u}{dx} = \dfrac{1}{u^2-1}\dfrac{du}{dx}$

**34.** $\dfrac{d\operatorname{sech}^{-1}u}{dx} = \dfrac{-1}{u\sqrt{1-u^2}}\dfrac{du}{dx}$

**35.** $\dfrac{d\operatorname{csch}^{-1}u}{dx} = \dfrac{-1}{|u|\sqrt{1+u^2}}\dfrac{du}{dx}$