

# Tabla de integrales y derivadas

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## Reglas de derivadas

$$(f(x) \pm g(x))' = f'(x) \pm g'(x)$$

$$(k \cdot f(x))' = k \cdot f'(x)$$

$$(f(x) \cdot g(x))' = f'(x) \cdot g(x) + f(x) \cdot g'(x)$$

$$\left(\frac{f(x)}{g(x)}\right)' = \frac{f'(x) \cdot g(x) - f(x) \cdot g'(x)}{(g(x))^2}$$

## Tabla de derivadas

x = incógnita ; k = constante ; u,v,w = expresión mas compleja / funciones

$$k' = 0$$

$$x' = 1$$

$$k \cdot x' = k$$

$$(u^n)' = n \cdot u^{n-1} \cdot u'$$

$$x^n' = n x^{n-1}$$

$$e^x' = e^x$$

$$k^x' = k^x \cdot \ln k$$

$$\ln x' = \frac{1}{x}$$

$$\log_a x' = \frac{1}{x \cdot \ln a}$$

$$e^u' = e^u \cdot u'$$

$$\sqrt{x}' = \frac{1}{2\sqrt{x}}$$

$$\operatorname{sen} x' = \cos x$$

$$\cos x' = -\operatorname{sen} x$$

$$(k \cdot u)' = k \cdot u'$$

$$\ln u' = \frac{1}{u} \cdot u'$$

$$\tan x' = \frac{1}{\cos^2 x} = \sec^2 x$$

$$\operatorname{arcsen} x' = \frac{1}{\sqrt{1-x^2}}$$

$$\arccos x' = \frac{-1}{\sqrt{1-x^2}}$$

$$\arctan x' = \frac{1}{x^2 + 1}$$

$$u \cdot v \cdot w' = u'vw + uv'w + uvw'$$

$$\frac{1}{u} = \frac{-1}{u^2} \cdot u'$$

$$\frac{u}{v} = \frac{u'v - uv'}{v^2}$$

## Tabla de Integrales

$$\int x^a dx = \frac{x^{a+1}}{a+1} \quad a \neq -1$$

$$\int k dx = k x \quad (\text{las constantes "salen"})$$

$$\int k f(x) dx = k \int f(x) dx \quad (\text{constantes "salen"})$$

$$\int a^x dx = \frac{a^x}{\ln a}$$

$$\int x^{-1} dx = \ln|x|$$

$$\int \ln x dx = x \ln x - x$$

$$\int \cos x dx = \sin x$$

$$\int \cot x dx = -\ln|\csc x| = \ln|\sin x|$$

$$\int \csc x dx = -\ln|\csc x + \cot x| = \ln|\csc x - \cot x|$$

$$\int \frac{dx}{\sin^2 x} = -\cotg x$$

$$\int \frac{-1}{\sqrt{1-x^2}} dx = \arccos x$$

$$\int dx = x$$

$$\int \frac{1}{x} dx = \ln|x| \quad (\text{ídem } x^{-1})$$

$$\int e^{kx} dx = \frac{e^{kx}}{k} + c$$

$$\int [f(x) \pm g(x)] dx = \int f(x) dx \pm \int g(x) dx$$

$$\int e^x dx = e^x$$

$$\int \sin x dx = -\cos x$$

$$\int \tan x dx = \ln|\sec x|$$

$$\int \sec x dx = \ln|\sec x + \tan x|$$

$$\int \frac{dx}{\cos^2 x} = \tg x$$

$$\int \frac{1}{\sqrt{1-x^2}} dx = \arcsen x$$

$$\int \frac{1}{1+x^2} dx = \arctg x$$