

TABLA DE DERIVADAS

FUNCIONES SIMPLES		FUNCIONES COMPUESTAS (Regla de la cadena)	
$y = x^n$	$y' = n \cdot x^{n-1}$	$y = f^n(x)$	$y' = n \cdot f^{n-1}(x) \cdot f'(x)$
$y = \sqrt{x}$	$y' = \frac{1}{2\sqrt{x}}$	$y = \sqrt{f(x)}$	$y' = \frac{f'(x)}{2\sqrt{f(x)}}$
$y = \sqrt[n]{x}$	$y' = \frac{1}{n\sqrt[n]{x^{n-1}}}$	$y = \sqrt[n]{f(x)}$	$y' = \frac{f'(x)}{n\sqrt[n]{f(x)^{n-1}}}$
$y = a^x$	$y' = a^x \cdot \ln(a)$	$y = a^{f(x)}$	$y' = a^{f(x)} \cdot f'(x) \cdot \ln(a)$
$y = e^x$	$y' = e^x$	$y = e^{f(x)}$	$y' = e^{f(x)} \cdot f'(x)$
$y = \log_a x$	$y' = \frac{1}{x \cdot \ln(a)}$	$y = \log_a f(x)$	$y' = \frac{f'(x)}{f(x) \cdot \ln(a)}$
$y = \ln(x)$	$y' = \frac{1}{x}$	$y = \ln(f(x))$	$y' = \frac{f'(x)}{f(x)}$
$y = \operatorname{sen}(x)$	$y' = \cos(x)$	$y = \operatorname{sen}(f(x))$	$y' = f'(x) \cdot \cos(f(x))$
$y = \cos(x)$	$y' = -\operatorname{sen}(x)$	$y = \cos(f(x))$	$y' = -f'(x) \cdot \operatorname{sen}(f(x))$
$y = \operatorname{tg}(x)$	$y' = 1 + \operatorname{tg}^2(x)$ $= \frac{1}{\cos^2(x)}$	$y = \operatorname{tg}(f(x))$	$y' = f'(x) \cdot (1 + \operatorname{tg}^2(f(x)))$ $= \frac{f'(x)}{\cos^2(f(x))}$
$y = \operatorname{arcsen}(x)$	$y' = \frac{1}{\sqrt{1-x^2}}$	$y = \operatorname{arcsen} f(x)$	$y' = \frac{f'(x)}{\sqrt{1-f^2(x)}}$
$y = \arccos(x)$	$y' = -\frac{1}{\sqrt{1-x^2}}$	$y = \arccos f(x)$	$y' = -\frac{f'(x)}{\sqrt{1-f^2(x)}}$
$y = \operatorname{arctg}(x)$	$y' = \frac{1}{1+x^2}$	$y = \operatorname{arctg} f(x)$	$y' = \frac{f'(x)}{1+f^2(x)}$

REGLAS DE DERIVACIÓN

- Constante

$$y = k \Rightarrow y' = 0$$

- Producto por un número

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

- Suma o resta

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

- Producto

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

- División

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

- Regla de la cadena

$$y = f(g(x)) \Rightarrow y' = f'(g(x)) \cdot g'(x)$$