

ÁLGEBRA DE DERIVADAS

$\frac{d}{dx}(f(x) \pm g(x)) = \frac{d}{dx}f(x) \pm \frac{d}{dx}g(x)$	$\frac{d}{dx}kf(x) = k \frac{d}{dx}f(x);$ <i>k: Constante</i>
$\frac{d}{dx}(f(x)g(x)) = f(x)\left(\frac{d}{dx}g(x)\right) + \left(\frac{d}{dx}f(x)\right)g(x)$	$\frac{d}{dx}\left(\frac{f(x)}{g(x)}\right) = \frac{g(x)\left(\frac{d}{dx}f(x)\right) - f(x)\left(\frac{d}{dx}g(x)\right)}{[g(x)]^2}$
$\frac{d}{dx}(f(x)^{g(x)}) = f(x)^{g(x)} \left[\frac{g(x)}{f(x)}\left(\frac{d}{dx}f(x)\right) + \ln(f(x))\left(\frac{d}{dx}g(x)\right) \right]$	

TABLA DE DERIVADAS

Nº	FUNCIÓN	DERIVADA	DERIVADA COMPUESTA
1	$y = k;$ <i>k: Constante</i>	$\frac{dk}{dx} = 0$	
2	$y = x$	$\frac{dx}{dx} = 1$	
3	$y = x^n$	$\frac{d}{dx}x^n = nx^{n-1} \frac{dx}{dx}$	$\frac{d}{dx}(f(x))^n = nf(x)^{n-1} \frac{d}{dx}f(x)$
4	$y = \log_a(x)$	$\frac{d}{dx}\log_a(x) = \frac{1}{x} \log_a(e) \frac{dx}{dx}$	$\frac{d}{dx}\log_a(f(x)) = \frac{1}{f(x)} \log_a(e) \frac{d}{dx}f(x)$
5	$y = \text{Ln}(x)$	$\frac{d}{dx}\text{Ln}(x) = \frac{1}{x} \frac{dx}{dx}$	$\frac{d}{dx}\text{Ln}(f(x)) = \frac{1}{f(x)} \frac{d}{dx}f(x)$
6	$y = a^x$	$\frac{d}{dx}a^x = a^x \text{Ln}(a) \frac{dx}{dx}$	$\frac{d}{dx}a^{f(x)} = a^{f(x)} \text{Ln}(a) \frac{d}{dx}f(x)$
7	$y = e^x$	$\frac{d}{dx}e^x = e^x \frac{dx}{dx}$	$\frac{d}{dx}e^{f(x)} = e^{f(x)} \frac{d}{dx}f(x)$
8	$y = \text{sen}(x)$	$\frac{d}{dx}\text{sen}(x) = \cos(x) \frac{dx}{dx}$	$\frac{d}{dx}\text{sen}(f(x)) = \cos(f(x)) \frac{d}{dx}f(x)$
9	$y = \text{cos}(x)$	$\frac{d}{dx}\text{cos}(x) = -\text{sen}(x) \frac{dx}{dx}$	$\frac{d}{dx}\text{cos}(f(x)) = -\text{sen}(f(x)) \frac{d}{dx}f(x)$
10	$y = \text{tan}(x)$	$\frac{d}{dx}\text{tan}(x) = \frac{1}{\cos^2 x} \frac{dx}{dx}$	$\frac{d}{dx}\text{tan}(f(x)) = \frac{1}{\cos^2(f(x))} \frac{d}{dx}f(x)$
11	$y = \text{cot}(x)$	$\frac{d}{dx}\text{cot}(x) = -\text{csc}^2(x) \frac{dx}{dx}$	$\frac{d}{dx}\text{cot}(f(x)) = -\text{csc}^2(f(x)) \frac{d}{dx}f(x)$
12	$y = \text{sec}(x)$	$\frac{d}{dx}\text{sec}(x) = \text{sec}(x) \text{tan}(x) \frac{dx}{dx}$	$\frac{d}{dx}\text{sec}(f(x)) = \text{sec}(f(x)) \text{tan}(f(x)) \frac{d}{dx}f(x)$
13	$y = \text{csc}(x)$	$\frac{d}{dx}\text{csc}(x) = -\text{csc}(x) \text{cot}(x) \frac{dx}{dx}$	$\frac{d}{dx}\text{csc}(f(x)) = -\text{csc}(f(x)) \text{cot}(f(x)) \frac{d}{dx}f(x)$
14	$y = \text{arcsen}(x)$	$\frac{d}{dx}\text{arcsen}(x) = \frac{1}{\sqrt{1-x^2}} \frac{dx}{dx}$	$\frac{d}{dx}\text{arcsen}(f(x)) = \frac{1}{\sqrt{1-(f(x))^2}} \frac{d}{dx}f(x)$
15	$y = \text{arccos}(x)$	$\frac{d}{dx}\text{arccos}(x) = \frac{-1}{\sqrt{1-x^2}} \frac{dx}{dx}$	$\frac{d}{dx}\text{arccos}(f(x)) = \frac{-1}{\sqrt{1-(f(x))^2}} \frac{d}{dx}f(x)$
16	$y = \text{arctan}(x)$	$\frac{d}{dx}\text{arctan}(x) = \frac{1}{1+x^2} \frac{dx}{dx}$	$\frac{d}{dx}\text{arctan}(f(x)) = \frac{1}{1+(f(x))^2} \frac{d}{dx}f(x)$
17	$y = \text{senh}(x)$	$\frac{d}{dx}\text{senh}(x) = \text{cosh}(x) \frac{dx}{dx}$	$\frac{d}{dx}\text{senh}(f(x)) = \text{cosh}(f(x)) \frac{d}{dx}f(x)$
18	$y = \text{cosh}(x)$	$\frac{d}{dx}\text{cosh}(x) = \text{senh}(x) \frac{dx}{dx}$	$\frac{d}{dx}\text{cosh}(f(x)) = \text{senh}(f(x)) \frac{d}{dx}f(x)$
19	$y = \text{tanh}(x)$	$\frac{d}{dx}\text{tanh}(x) = \frac{1}{\text{cosh}^2(x)} \frac{dx}{dx}$	$\frac{d}{dx}\text{tanh}(f(x)) = \frac{1}{\text{cosh}^2(f(x))} \frac{d}{dx}f(x)$
20	$y = \text{arcsenh}(x)$	$\frac{d}{dx}\text{arcsenh}(x) = \frac{1}{\sqrt{x^2+1}} \frac{dx}{dx}$	$\frac{d}{dx}\text{arcsenh}(f(x)) = \frac{1}{\sqrt{(f(x))^2+1}} \frac{d}{dx}f(x)$
21	$y = \text{arccosh}(x)$	$\frac{d}{dx}\text{arccosh}(x) = \frac{1}{\sqrt{x^2-1}} \frac{dx}{dx}$	$\frac{d}{dx}\text{arccosh}(f(x)) = \frac{1}{\sqrt{(f(x))^2-1}} \frac{d}{dx}f(x)$
22	$y = \text{arctanh}(x)$	$\frac{d}{dx}\text{arctanh}(x) = \frac{1}{1-x^2} \frac{dx}{dx}$	$\frac{d}{dx}\text{arctanh}(f(x)) = \frac{1}{1-(f(x))^2} \frac{d}{dx}f(x)$