

FUNCIONES SIMPLES			FUNCIONES COMPUESTAS		
Función		Derivada	Función		Derivada
1	$y = x^n$	$y' = n \cdot x^{n-1}$	16	$y = f(x)^n$	$y' = n \cdot f(x)^{n-1} \cdot f'(x)$
2	Producto $y = a \cdot b$	$y' = a' \cdot b + a \cdot b'$	17	Cociente $y = \frac{a}{b}$	$y' = \frac{a' \cdot b - a \cdot b'}{b^2}$
3	$y = \text{sen } x$	$y' = \text{cos } x$	18	$y = \text{sen } f(x)$	$y' = \text{cos } f(x) \cdot f'(x)$
4	$y = \text{cos } x$	$y' = -\text{sen } x$	19	$y = \text{cos } f(x)$	$y' = -\text{sen } f(x) \cdot f'(x)$
5	$y = \text{tg } x$	$y' = \frac{1}{\cos^2 x}$ o $y' = 1 + \text{tg}^2 x$	20	$y = \text{tg } f(x)$	$y' = \frac{1}{\cos^2 f(x)} \cdot f'(x)$
6	$y = \text{cotg } x$	$y' = \frac{-1}{\text{sen}^2 x}$ o $y' = -1 - \text{cotg}^2 x$	21	$y = \text{cotg } f(x)$	$y' = \frac{-1}{\text{sen}^2 f(x)} \cdot f'(x)$
7	$y = \sqrt{x}$	$y' = \frac{1}{2 \cdot \sqrt{x}}$	22	$y = \sqrt{f(x)}$	$y' = \frac{1}{2 \cdot \sqrt{f(x)}} \cdot f'(x)$
8	$y = \sqrt[n]{x}$	$y' = \frac{1}{n \cdot \sqrt[n]{x^{n-1}}}$	23	$y = \sqrt[n]{f(x)}$	$y' = \frac{1}{n \cdot \sqrt[n]{f(x)^{n-1}}} \cdot f'(x)$
9	$y = e^x$	$y' = e^x$	24	$y = e^{f(x)}$	$y' = e^{f(x)} \cdot f'(x)$
10	$y = a^x$	$y' = a^x \cdot \text{Lna}$	25	$y = a^{f(x)}$	$y' = a^{f(x)} \cdot f'(x) \cdot \text{Lna}$
11	$y = \text{Ln } x$	$y' = \frac{1}{x}$	26	$y = \text{Ln } f(x)$	$y' = \frac{1}{f(x)} \cdot f'(x)$
12	$y = \log_a x$	$y' = \frac{1}{x \cdot \text{Lna}}$	27	$y = \log_a f(x)$	$y' = \frac{f'(x)}{f(x) \cdot \text{Lna}}$ o $y' = \frac{f'(x)}{f(x)} \cdot \text{Log}_a e$
13	$y = \text{arc sen } x$	$y' = \frac{1}{\sqrt{1-x^2}}$	28	$y = \text{arc sen } f(x)$	$y' = \frac{1}{\sqrt{1-[f(x)]^2}} \cdot f'(x)$
14	$y = \text{arc cos } x$	$y' = \frac{-1}{\sqrt{1-x^2}}$	29	$y = \text{arc cos } f(x)$	$y' = \frac{-1}{\sqrt{1-[f(x)]^2}} \cdot f'(x)$
15	$y = \text{arc tg } x$	$y' = \frac{1}{1+x^2}$	30	$y = \text{arc tg } f(x)$	$y' = \frac{1}{1+[f(x)]^2} \cdot f'(x)$

La derivada de una función elevada a otra función $y = f(x)^{g(x)}$ se resuelve siguiendo estos cuatro pasos:

- 1.- Colocar "**Ln**" a ambos lados de la igualdad.
- 2.- Expresarlo como **$g(x) \cdot \text{Ln } f(x)$** .
- 3.- **Derivar** a ambos lados de la igualdad
- 4.- Despejar **y'** sustituyendo el valor inicial de **y**