

## REGLAS DE DERIVACIÓN

Donde  $u(x)$  y  $v(x)$  son funciones reales de variable real,  $n \in \mathbb{N}$  y  $a \in \mathbb{R}$  son números

<b>Polinomios</b>	$a' = 0$	
	$x' = 1$	
	$(ax)' = a$	
	$(x^n)' = nx^{n-1}$	
<b>Suma</b>	$(u + v)' = u' + v'$	
<b>Resta</b>	$(u - v)' = u' - v'$	
<b>Producto</b>	$(u \cdot v)' = u' \cdot v + u \cdot v'$	
<b>Cociente</b>	$\left(\frac{u}{v}\right)' = \frac{u' \cdot v - u \cdot v'}{v^2}$	$\left(\frac{1}{x}\right)' = -\frac{1}{x^2}$
	$\left(\frac{1}{u}\right)' = -\frac{u'}{u^2}$	
<b>Potencia</b>	$(u^n)' = n \cdot u^{n-1} \cdot u'$	
<b>Raíces</b>	$(\sqrt{u})' = \frac{u'}{2\sqrt{u}}$	$(\sqrt{x})' = \frac{1}{2\sqrt{x}}$
<b>Logaritmos</b>	$(\ln u)' = \frac{u'}{u}$	$(\log_a u)' = \frac{u'}{u} \cdot \log_a(e)$
<b>Exponenciales</b>	$(e^u)' = e^u \cdot u'$	$(a^u)' = a^u \cdot u' \cdot \ln a$
<b>Potencias con exponenciales</b>	$(u^v)' = v \cdot u^{v-1} \cdot u' + u^v \cdot v' \cdot \ln u$	
<b>Trigonómicas</b>	$(\operatorname{sen} u)' = u' \cdot \cos u$	$(\operatorname{arc} \operatorname{sen} u)' = \frac{u'}{\sqrt{1-u^2}}$
	$(\operatorname{cos} u)' = -u' \cdot \operatorname{sen} u$	$(\operatorname{arc} \operatorname{cos} u)' = \frac{-u'}{\sqrt{1-u^2}}$
	$(\operatorname{tg} u)' = \frac{u'}{\cos^2 u} = u' \cdot (1 + \operatorname{tg}^2 u)$	$(\operatorname{arc} \operatorname{tg} u)' = \frac{u'}{1+u^2}$