

TABLA DE DERIVADAS

Función	Derivada	Ejemplos	
Constante			
$y=k$	$y'=0$	$y=8$	$y'=0$
Identidad			
$y=x$	$y'=1$	$y=x$	$y'=1$
Funciones potenciales		COMPOSICIÓN (Regla de la cadena)	$(f \circ u)'(x) = f'[u(x)] \cdot u'(x)$
$y = u^m$	$y' = mu^{m-1}u'$	$y = (2x^2 + 1)^3$	$y' = 3(2x^2 + 1)^2 \cdot 4x$
$y = \frac{1}{u^m}$	$y' = -\frac{mu'}{u^{m+1}}$	$y = \frac{1}{(2x+1)^3}$	$y' = -\frac{6}{(2x+1)^4}$
$y = \sqrt{u}$	$y' = \frac{u'}{2\sqrt{u}}$	$y = \sqrt{5x}$	$y' = \frac{5}{2\sqrt{5x}}$
$y = \sqrt[m]{u}$	$y' = \frac{u'}{m\sqrt[m]{u^{m-1}}}$	$y = \sqrt[5]{3x^2}$	$y' = \frac{6x}{5\sqrt[5]{(3x^2)^4}}$
Funciones exponenciales			
$y = e^u$	$y' = u'e^u$	$y = e^{3x^2+1}$	$y' = 6xe^{3x^2+1}$
$y = a^u$	$y' = u'a^u \ln a$	$y = 5^{3x-4}$	$y' = 3 \cdot 5^{3x-4} \ln 5$
Funciones logarítmicas			
$y = \ln u$	$y' = \frac{u'}{u}$	$y = \ln(x^2 + 7x)$	$y' = \frac{2x+7}{x^2+7x}$
$y = \log_a u$	$y' = \frac{u'}{u} \log_a e$	$y = \log_2(5x+7)$	$y' = \frac{5}{5x+7} \log_2 e$
Funciones trigonométricas			
$y = \operatorname{sen} u$	$y' = u' \operatorname{cos} u$	$y = \operatorname{sen} 5x$	$y' = 5 \operatorname{cos} 5x$
$y = \operatorname{cos} u$	$y' = -u' \operatorname{sen} u$	$y = \operatorname{cos} 3x^2$	$y' = -6x \operatorname{sen} 3x^2$

Función	Derivada	Ejemplos	
$y = \operatorname{tg} u$	$y' = u' \sec^2 u$	$y = \operatorname{tg} 7x$	$y' = 7 \sec^2 7x$
$y = \operatorname{cot} gu$	$y' = -u' \operatorname{cosec}^2 u$	$y = \operatorname{cot} g(4x + 5)$	$y' = -4 \operatorname{cosec}^2(4x + 5)$
$y = \operatorname{sec} u$	$y' = u' \operatorname{sec} u \cdot \operatorname{tg} u$	$y = \operatorname{sec} x^3$	$y' = 3x^2 \operatorname{sec} x^3 \operatorname{tg} x^3$
$y = \operatorname{cosec} u$	$y' = -u' \operatorname{cosec} u \operatorname{cot} gu$	$y = \operatorname{cosec} x^2$	$y' = -2x \operatorname{cosec} x^2 \operatorname{cot} gx^2$
$y = \operatorname{arcsen} u$	$y' = \frac{u'}{\sqrt{1-u^2}}$	$y = \operatorname{arcsen} x^2$	$y' = \frac{2x}{\sqrt{1-x^4}}$
$y = \operatorname{arccos} u$	$y' = \frac{-u'}{\sqrt{1-u^2}}$	$y = \operatorname{arccos} 3x$	$y' = \frac{-3}{\sqrt{1-9x^2}}$
$y = \operatorname{arctg} u$	$y' = \frac{u'}{1+u^2}$	$y = \operatorname{arctg} 3x$	$y' = \frac{3}{1+9x^2}$
Derivadas de sumas, restas, productos y cocientes de funciones			
$y = ku$	$y' = ku'$	$y = 3x^5$	$y' = 3 \cdot 5x^4 = 15x^4$
$y = u + v - w$	$y' = u' + v' - w'$	$y = 3x^2 - 2x + 5$	$y' = 6x - 2$
$y = uv$	$y' = u'v + uv'$	$y = x^2 \cos x$	$y' = 2x \cos x + x^2(-\operatorname{sen} x)$
$y = \frac{u}{v}$	$y' = \frac{u'v - uv'}{v^2}$	$y = \frac{2x^2}{x^3 - 1}$	$y' = \frac{4x(x^3 - 1) - 2x^2(3x^2)}{(x^3 - 1)^2}$
f y u son dos funciones reales de variable real. Continuas			