

Funciones Compuestas

TABLA DE DERIVADAS

FUNCIÓN	FUNCIÓN DERIVADA	FUNCIÓN	FUNCIÓN DERIVADA
$Y = k$	$Y' = 0$	$Y = x$	$Y' = 1$
$Y = u + v + w$	$Y' = u' + v' + w'$	$Y = u \cdot v$	$Y' = u \cdot v' + u' \cdot v$
$Y = \frac{u}{v}$	$Y' = \frac{v \cdot u' - v' \cdot u}{v^2}$	$Y = \text{Log}_b u$	$Y' = \frac{u'}{u} \cdot \text{Log}_b e^{(*)}$
$Y = u^n$	$Y' = u' \cdot n \cdot u^{n-1}$	$Y = L_n u$	$Y' = \frac{u'}{u}$
$Y = k^u$	$Y' = u' \cdot k^u \cdot L_n k^{(**)}$	$Y = e^u$	$Y' = u' \cdot e^u$
$Y = \sqrt{u}$	$Y' = \frac{u'}{2\sqrt{u}}$	$Y = \sqrt[m]{u}$	$Y' = \frac{u'}{m \sqrt[m]{u^{m-1}}}$
$Y = \text{sen } u$	$Y' = u' \cdot \text{cos } u$	$Y = \text{cosec } u$	$Y' = -u' \cdot \text{cosec } u \cdot \text{cotg } u$
$Y = \text{cos } u$	$Y' = -u' \cdot \text{sen } u$	$Y = \text{sec } u$	$Y' = u' \cdot \text{sec } u \cdot \text{tg } u$
$Y = \text{tg } u$	$Y' = u' \cdot (1 + \text{tg}^2 u)^{(**)}$	$Y = \text{cotg } u$	$Y' = -u' \cdot \text{cosec}^2 u$
$Y = \text{arsen } u$	$Y' = \frac{u'}{\sqrt{1-u^2}}$	$Y = \text{arccosec } u$	$Y' = \frac{-u'}{ u \sqrt{u^2-1}}$
$Y = \text{arcos } u$	$Y' = \frac{-u'}{\sqrt{1-u^2}}$	$Y = \text{arsec } u$	$Y' = \frac{u'}{ u \sqrt{u^2-1}}$
$Y = \text{arctg } u$	$Y' = \frac{u'}{1+u^2}$	$Y = \text{arccotg } u$	$Y' = \frac{-u'}{1+u^2}$
$Y = ku$	$Y' = ku'$	$Y = \text{arccotg } u$	$Y' = -\frac{u'}{1+u^2}$
$Y = u^v$	$Y' = v \cdot u^{v-1} \cdot u' + u^v \cdot L_n u^{v-1} \cdot u'$	$Y = 1/u^m$	$Y' = -m u^{m-1} / u^{m+1}$

$Y = f(x) \Rightarrow L_n Y = L_n f(x) \Rightarrow (Y'/Y) = (L_n f(x))' \Rightarrow Y' = Y \cdot (L_n f(x))'$

$(*) L_n k = 1/(\text{Log}_k e)$; $(**) = u' / (\text{cos}^2 u) = u' \cdot \text{sec}^2 u$

u, v, w son funciones de x ; u' es la derivada de u respecto de x ; k es una cte ; L_n es Log base e ; n y b son números racionales ; $|u|$ es valor absoluto de u .