TABLA DE DERIVADAS E INTEGRALES

Función	Derivada
C	0
χ^n	nx^{n-1}
senx	cos x
cos x	- senx
tan x	$sec^2 x$
secx	sec x • tan x
cscx	$-\csc x \bullet \cot x$
$\cot x$	$-\csc^2 x$
arctan x	$\frac{1}{1+x^2}$
arcsen x	$\frac{1}{\sqrt{1-x^2}}$
arcsec x	$\frac{1}{x\sqrt{x^2-1}}$
e^x	e^x
a^x	$\ln(a) a^x$
ln x	$\frac{1}{x}$
$\log_a x$	$\frac{1}{\ln(a) x}$
$f(x) \bullet g(x)$	$f^l \bullet g + f \bullet g^l$
$\frac{f(x)}{g(x)}$	$\frac{f' \bullet g + g' \bullet f}{\left[g(x)\right]^2}$
\sqrt{x}	$\frac{1}{2\sqrt{x}}$
$\sqrt[n]{x}$	$\frac{1}{n \sqrt[n]{x^{n-1}}}$
$\frac{1}{x}$	$\frac{-1}{x^2}$

Función C x^n $\frac{x^{n+1}}{n+1} + C$ $sen x$ $-cos x + C$ $tan x$ $-ln cos x + C$ $tan x$ $ln sen x + C$ $tan x$ $ln sec x + tan x + C$ $tan x + C$
$\frac{1}{n+1} + C$ $sen x$ $-\cos x + C$ $tan x$ $-\ln \cos x + C$ $tan x$ $\ln sen x + C$ $sec x$ $\ln sec x + tan x + C$ $csc x$ $\ln csc x - cot x + C$ $sec^2 x$ $tan x + C$ $csc^2 x$ $-\cot x + C$ $sec x + C$ $csc x + C$ $csc x + C$ $\frac{1}{-}$ $\ln x + C$
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$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
$cot x ln sen x + C$ $sec x ln sec x + tan x + C$ $csc x ln csc x - cot x + C$ $sec^2 x tan x + C$ $csc^2 x -cot x + C$ $sec x \cdot tan x sec x + C$ $csc x \cdot cot x -csc x + C$ $ln x + C$
$\frac{\ln \sec x + c}{\sec x}$ $\frac{\ln \sec x + \tan x + C}{\cosh x}$ $\frac{\ln \csc x - \cot x + C}{\cot x + C}$ $\frac{\csc^2 x}{\sec x \cdot \tan x}$ $\frac{\sec x + C}{\csc x \cdot \cot x}$ $\frac{1}{\ln x + C}$
$\frac{\ln \sec x + \tan x + C}{ \sec x + \cos x + C}$ $\frac{\sec^2 x}{\sec^2 x} = \frac{\tan x + C}{-\cot x + C}$ $\frac{\sec x \cdot \tan x}{\sec x + C}$ $\frac{\csc x \cdot \cot x}{-\csc x \cdot \cot x} = \frac{-\csc x + C}{-\csc x + C}$ $\frac{1}{-\cos x \cdot \cot x} = \frac{\ln x + C}{-\csc x \cdot \cot x}$
$\frac{ \operatorname{resc} x - \cot x + C}{\sec^2 x}$ $\frac{ \operatorname{csc}^2 x }{\cot x + C}$ $\frac{ \operatorname{csc} x - \cot x + C}{\cot x + C}$ $\frac{ \operatorname{csc} x - \cot x }{\cot x}$ $\frac{ \operatorname{csc} x - \cot x }{\cot x + C}$ $\frac{ \operatorname{csc} x - \cot x }{\cot x + C}$ $\frac{ \operatorname{csc} x - \cot x }{\cot x + C}$
$\frac{\csc^2 x}{\sec x \cdot \tan x} = -\cot x + C$ $\sec x \cdot \cot x = \sec x + C$ $\frac{1}{2} = \ln x + C$
$ \begin{array}{ccc} \sec x & \sec x + C \\ \csc x \cdot \cot x & -\csc x + C \\ \underline{1} & \ln x + C \end{array} $
$ \begin{array}{ccc} \csc x \bullet \cot x & -\csc x + C \\ \underline{1} & \ln x + C \end{array} $
$\frac{1}{ x } = \ln x + C$
· · ·
X
$e^x \qquad \qquad e^x + C$
$\frac{1}{\ln(a)} \cdot a^x + C$
$\frac{1(derivada)}{1+x^2} \qquad \arctan x + C$
$\frac{1(derivada)}{\sqrt{1-x^2}} \qquad arcsen \ x + C$
$\frac{1(derivada)}{x\sqrt{x^2 - 1}} \qquad arc\sec x + C$
$\frac{1}{2}x - \frac{1}{4 \cdot a}sen 2x + C$
$\frac{1}{2}x - \frac{1}{2 \cdot a}Senx \ Cos x$
$\frac{1}{2}x + \frac{1}{4 \cdot a}sen 2x + C$
$\frac{1}{2}x + \frac{1}{2 \cdot a} Senx \ Cos x$

Función	Integrales
$\log_a x$	$\frac{1}{\ln a} (x \ln x - x) + c$
ln x	x ln x – x
$\int (a\lg o)^n (a\lg o)^{'}$	$\frac{(a\lg o)^{n+1}}{n+1}$
tan ² x	$\tan x - x + C$
$\frac{1}{ax^2 + bx + c}$	$\frac{2}{\sqrt{-\Delta}}\arctan\left(\frac{2ax+b}{\sqrt{-\Delta}}\right)+c$
	Solo si $\Delta < 0$
$\int Csc^3x$	$\frac{-1}{2} Cscx Cot x + \frac{1}{2} \ln Ccsx - Cot x + C$
$\int Sec^3x$	$\frac{1}{2} SecxTan x + \frac{1}{2} \ln \left Secx + Tan x \right + C$

IDENTIDADES

Recomendable para exponentes impa res

$$Sen^2x + Cos^2x = 1 \implies Cos^2x = 1 - sen^2x \quad Sen^2x = 1 - Cos^2x$$

$$1 + \tan^2 x = \sec^2 x \implies Tan^2 x = Sec^2 x - 1$$

$$1 + \cot^2 x = \csc^2 x \Rightarrow \cot^2 x = \csc^2 x - 1$$

Recomendable para exponentes pares

$$Sen^2x = \frac{1}{2} - \frac{1}{2} \cdot \cos 2x$$

$$\cos^2 x = \frac{1}{2} + \frac{1}{2} \cdot \cos 2x$$

Más identidades

$$senx \cdot \cos x = \frac{1}{2} sen 2x$$

$$\cos^2 x - sen^2 x = \cos 2x$$

$$senx \cdot cos y = \frac{1}{2} sen(x + y) + \frac{1}{2} sen(x - y)$$

$$senx \cdot seny = \frac{1}{2}\cos(x - y) - \frac{1}{2}\cos(x + y)$$

$$\cos x \cdot \cos y = \frac{1}{2}\cos(x - y) + \frac{1}{2}\cos(x + y)$$

$$sen(x + y) = senx \square cos y + sen y \square cos x$$
 $Cos(x - y) = cos x cos y + sen x sen y$

$$Cos(x - y) = cos x cos y + sen x sen y$$

$$sen(x - y) = senx\Box cos y - sen y\Box cos x$$

$$Cos(x + y) = cos x cos y - sen x sen y$$

$$Sec x = \frac{1}{\cos x}$$

$$Cot x = \frac{1}{\tan x} = \frac{\cos x}{senx}$$

$$Cot x = \frac{1}{\tan x} = \frac{\cos x}{senx}$$
 $sen \theta = \frac{cateto opuesto}{hipotenusa}$

$$Csc\ x = \frac{1}{sen\ x}$$

$$\tan x = \frac{sen x}{\cos x}$$

$$\cos\theta = \frac{cateto\,adyacente}{hipotenusa}$$

$$Tan\,\theta = \frac{opuesto}{adyancente}$$