

\oplus LEY DE SIGNOS \ominus

SUMA Y RESTA

$$(A) \text{ +/− } (B) = \frac{\text{+}}{\text{−}} C$$

Los signos iguales se suman y los signos diferentes se restan, y se pone el signo del número mayor

MULTIPLICACIÓN Y DIVISIÓN

$$(+) \times / \div (+) = +$$

$$(+) \times / \div (-) = -$$

$$(-) \times / \div (+) = -$$

$$(-) \times / \div (-) = +$$

$\frac{a^n}{a^m} = a^{n-m}$ LEY DE LOS EXPONENTES

$$x^1 = x$$

$$x^0 = 1$$

$$x^{-1} = \frac{1}{x}$$

$$x^m * x^n = x^{m+n}$$

$$\frac{x^m}{x^n} = x^{m-n}$$

$$(x^m)^n = x^{m*n}$$

$$(xy)^n = x^n y^n$$

$$\left(\frac{x}{y}\right)^n = \frac{x^n}{y^n}$$

$$x^{-n} = \frac{1}{x^n}$$

$$x^{\frac{m}{n}} = \sqrt[n]{x^m} = (\sqrt[n]{x})^m$$

IDENTIDADES TRIGONOMETRICAS $\tan A = \frac{\sin A}{\cos A}$

$$\text{sen}^2(x) + \text{cos}^2(x) = 1$$

$$\text{sec}^2(x) = 1 + \text{tan}^2(x)$$

$$\text{sen}^2(x) = 1 - \text{cos}^2(x)$$

$$\text{tan}^2(x) = \text{sec}^2(x) - 1$$

$$\text{cos}^2(x) = 1 - \text{sen}^2$$

$$\text{tan}(x) = \frac{\text{sen}(x)}{\text{cos}(x)}$$

$$\text{sen}^2(x) = \frac{1}{2} - \frac{1}{2} \text{cos}(2x)$$

$$\text{cot}(x) = \frac{\text{cos}(x)}{\text{sen}(x)}$$

$$\text{cos}^2(x) = \frac{1}{2} + \frac{1}{2} \text{cos}(2x)$$

$$\text{sen}(2x) = 2\text{sen}(x)\text{cos}(x)$$

$$\text{cos}(2x) = \text{cos}^2(x) - \text{sen}^2(x)$$



RAZONES TRIGONOMETRICAS

	0°	30°	45°	60°	90°
Sen	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
Cos	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
Tan	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	∞

FORMULARIO DE DERIVADAS

$$\frac{d}{dx}(5x) = 5$$

$$\frac{d}{dx} x^n = nx^{n-1} ; n \neq 1$$

$$\frac{d}{dx} \tan u = u' \sec^2 u$$

$$\frac{d}{dx} e^u = u' e^u$$

$$\frac{d}{dx} \cot u = -u' \csc^2 u$$

$$\frac{d}{dx} a^u = u' a^u \ln(a)$$

$$\frac{d}{dx} \sec u = u' \sec u \tan u$$

$$\frac{d}{dx} \ln u = \frac{u'}{u}$$

$$\frac{d}{dx} \csc u = -u' \csc u \cot u$$

$$\frac{d}{dx} \log_a u = \frac{u'}{u \ln(a)}$$

$$\frac{d}{dx} \arcsen(u) = \frac{u'}{\sqrt{1-u^2}}$$

$$\frac{d}{dx} u^n = u' n u^{n-1}$$

$$\frac{d}{dx} \arccos(u) = -\frac{u'}{\sqrt{1-u^2}}$$

$$\frac{d}{dx} uv = vu' + uv'$$

$$\frac{d}{dx} \arctan(u) = \frac{u'}{1+u^2}$$

$$\frac{d}{dx} \frac{u}{v} = \frac{vu' - uv'}{v^2}$$

$$\frac{d}{dx} \operatorname{arccot}(u) = -\frac{u'}{1+u^2}$$

$$\frac{d}{dx} \sin u = u' \cos u$$

$$\frac{d}{dx} \operatorname{arcssec}(u) = \frac{u'}{u\sqrt{u^2-1}}$$

$$\frac{d}{dx} \cos u = -u' \sin u$$

$$\frac{d}{dx} \operatorname{arccsc}(u) = -\frac{u'}{u\sqrt{u^2-1}}$$

FORMULARIO DE INTEGRALES

$\int f(x) dx$

$$\int a dx = ax + C$$

$$\int \cot u du = \ln(\operatorname{sen} u) + C$$

$$\int u^n du = \frac{u^{n+1}}{n+1} + C ; n \neq -1$$

$$\int \sec^2 u du = \tan u + C$$

$$\int \frac{du}{u} = \ln(u) + C$$

$$\int \csc^2 u du = -\cot u + C$$

$$\int e^u du = e^u + C$$

$$\int \tan u \sec u du = \sec u + C$$

$$\int u dv = uv - \int v du$$

$$\int \cot u \csc u du = -\csc u + C$$

$$\int \operatorname{sen} u du = -\operatorname{cos} u + C$$

$$\int \frac{du}{\sqrt{a^2 - u^2}} = \operatorname{arcsen} \frac{u}{a} + C$$

$$\int \operatorname{cos} u du = \operatorname{sen} u + C$$

$$\int \frac{du}{u \sqrt{u^2 - a^2}} = \frac{1}{a} \operatorname{arcsec} \frac{u}{a} + C$$

$$\int \tan u du = \ln(\operatorname{sec} u) + C$$

$$\int \frac{du}{\sqrt{a^2 - u^2}} = \frac{1}{a} \operatorname{arctan} \frac{u}{a} + C$$

$$\int \csc u du = \ln(\csc u - \cot u) + C$$

$$\int \sec u du = \ln(\sec u + \tan u) + C$$