Identidades de Trigonometría

Apuntes

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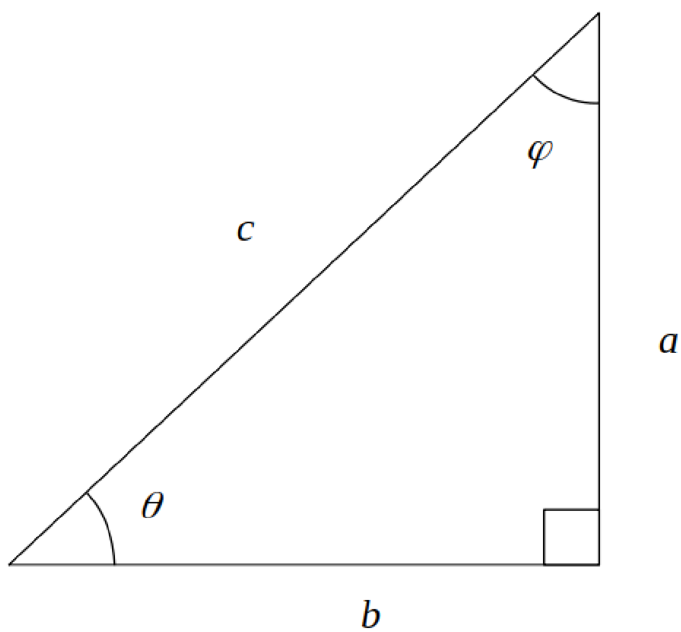
1 Identidades



$\text{sen}(\theta) = \text{a/c}$
$\csc(\theta) = 1/\text{sen}(\theta) = \text{c/a}$
$\cos(\theta) = \text{b/c}$
$\sec(\theta) = 1/\cos(\theta) = \text{c/b}$
$\tan(\theta) = \text{sen}(\theta)/\cos(\theta) = \text{a/b}$
$\cot(\theta) = 1/\tan(\theta) = \text{b/a}$

sen(-x) = -sen(x)
csc(-x) = -csc(x)
cos(-x) = cos(x)
sec(-x) = sec(x)
tan(-x) = -tan(x)
cot(-x) = -cot(x)

$\text{sen}^2(x) + \cos^2(x) = 1$
$\tan^2(x) + 1 = \sec^2(x)$
$\cot^2(x) + 1 = \csc^2(x)$
sen(x ± y) = sen(x)cos(y) ± cos(x)sen(y)
cos(x ± y) = cos(x)cos(y) ± sen(x)sin(y)

tan(x ± y) = [tan(x) ± tan(y)]/[1 ± tan(x)tan(y)]
sen(2x) = 2[sen(x)cos(x)]
$\cos(2x) = \cos^2(x) - \text{sen}^2(x) = 2*\cos^2(x) - 1 = 1 - 2*\text{sen}^2(x)$
$\tan(2x) = 2\tan(x)/[1 - \tan^2(x)]$
$\text{sen}^2(x) = 1/2 - 1/2*\cos(2x)$
$\cos^2(x) = 1/2 + 1/2*\cos(2x)$
sen(x) - sen(y) = 2*sen[(x - y)/2]cos[(x + y)/2]
cos(x) - cos(y) = -2*sen[(x - y)/2]sen[(x + y)/2]

2 Tabla Trig de Ángulos Ordinarios

ángulo	0	30	45	60	90
$\text{sen}^2(a)$	0/4	1/4	2/4	3/4	4/4
$\cos^2(a)$	4/4	3/4	2/4	1/4	0/4
$\tan^2(a)$	0/4	1/3	2/2	3/1	4/0

3 Leyes trigonométricas

Dado un triángulo abc, con ángulos A,B,C; a está opuesto a A; b opuesto a B; c opuesto a C,

3.1 La Ley del Seno

a/sen(A) = b/sen(B) = c/sen(C)

3.2 La Ley del Coseno

$c^2 = a^2 + b^2 - 2ab \cos(C)$
$b^2 = a^2 + c^2 - 2ac \cos(B)$
$a^2 = b^2 + c^2 - 2bc \cos(A)$

3.3 La Ley de la Tangente

$(a - b)/(a + b) = \tan 1/2(A-B) / \tan 1/2(A+B)$

Origen