Identidades de Trigonometría

Apuntes

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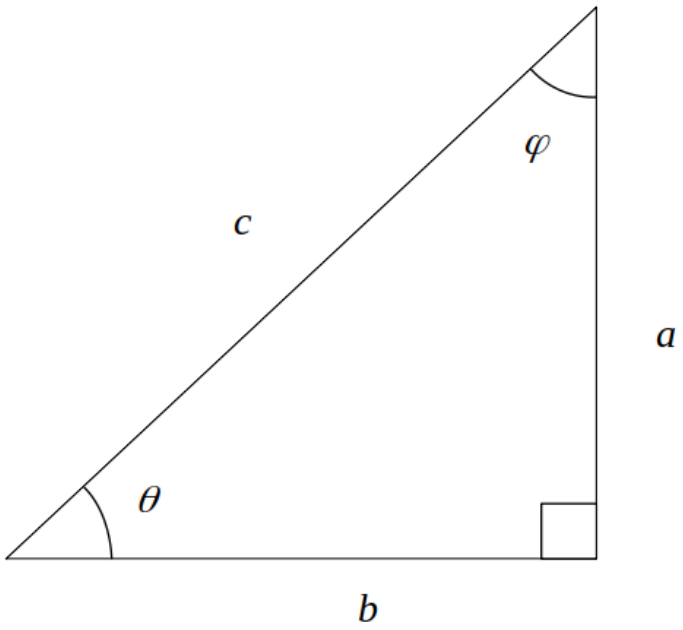
1 Identidades



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

$$\text{sen}(-\text{x}) = -\text{sen}(\text{x})$$

$$\csc(-x) = -\csc(x)$$
$$\cos(-x) = \cos(x)$$
$$\sec(-x) = \sec(x)$$
$$\tan(-x) = -\tan(x)$$
$$\cot(-x) = -\cot(x)$$

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

$$\tan(x \pm y) = (\tan(x) \pm \tan(y)) \,/\, (1 \pm \tan(x)\tan(y))$$
$$\text{sen}(2x) = 2\,\text{sen}(x)\cos(x)$$
$$\cos(2x) = \cos^2(x) - \text{sen}^2(x) = 2\cos^2(x) - 1 = 1 - 2\,\text{sen}^2(x)$$
$$\tan(2x) = 2\tan(x) \,/\, (1 - \tan^2(x))$$
$$\text{sen}^2(x) = 1/2 - 1/2\cos(2x)$$
$$\cos^2(x) = 1/2 + 1/2\cos(2x)$$
$$\text{sen } x - \text{sen } y = 2\,\text{sen}(\,(x - y)/2\,)\cos(\,(x + y)/2\,)$$
$$\cos x - \cos y = -2\,\text{sen}(\,(x-y)/2\,)\,\text{sen}(\,(x + y)/2\,)$$

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

$a/\text{sen}(A) = b/\text{sen}(B) = c/\text{sen}(C)$

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