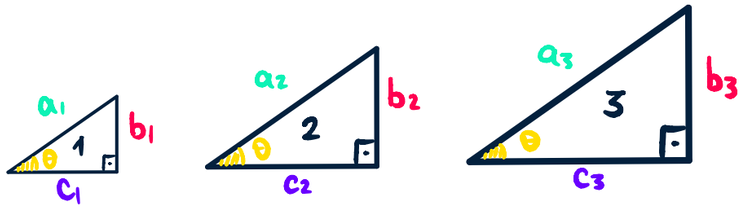
SENO e COSSENO

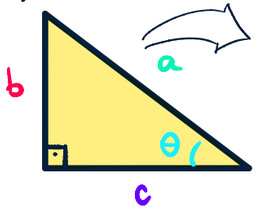


$$\sin\theta = \frac{b_1}{a_1} = \frac{b_2}{a_2} = \frac{b_3}{a_3}$$

$$\cos\theta = \frac{c_1}{a_1} = \frac{c_2}{a_2} = \frac{c_3}{a_3}$$

$$\tan\theta = \frac{b_1}{c_1} = \frac{b_2}{c_2} = \frac{b_3}{c_3}$$

$$\frac{\sin\theta}{\cos\theta} = \frac{b}{a} \cdot \frac{a}{c} = \frac{b}{c} = \tan\theta$$



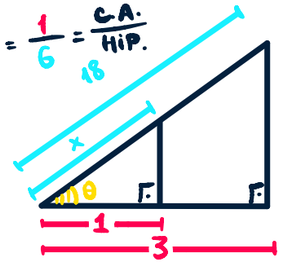
$$\sin\theta = \frac{b}{a}$$

$$\cos\theta = \frac{c}{a}$$

$$\tan\theta = \frac{b}{c}$$

EXEMPLO

$$\cos\theta = \frac{3}{18} = \frac{1}{6} = \frac{\text{C.A.}}{\text{HIP.}}$$



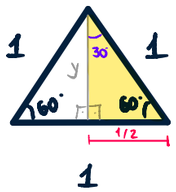
$$\cos\theta = \frac{1}{x} = \frac{1}{6} \therefore x = 6$$

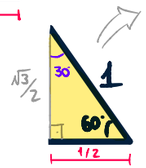
$$\frac{x}{18} = \frac{1}{3} \therefore 3x = 18 \therefore x = 6$$

////	30°	45°	60°
sen	$1/2$	$\sqrt{2}/2$	$\sqrt{3}/2$
cos	$\sqrt{3}/2$	$\sqrt{2}/2$	$1/2$
tan	$\sqrt{3}/3$	1	$\sqrt{3}$

PITÁGORAS: $1^2 = \left(\frac{1}{2}\right)^2 + y^2$

$$y^2 = \frac{3}{4} \therefore y = \frac{\sqrt{3}}{2}$$

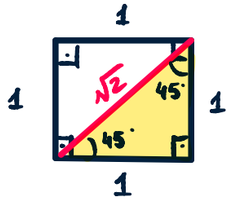




$$\sin 30 = \frac{1/2}{1} = \frac{1}{2}$$

$$\cos 30 = \frac{\sqrt{3}/2}{1} = \frac{\sqrt{3}}{2}$$

$$\tan 30 = \frac{1/2}{\sqrt{3}/2} = \frac{\sqrt{3}}{3}$$



$$\sin 45 = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2} = \cos 45$$

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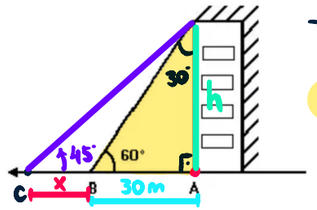
Uma pessoa está localizada no ponto A, na base de um prédio, como mostra a figura.

Quando ela começa a caminhar para a esquerda, ela anda 30 metros até chegar no ponto B, ponto em que ela visualiza o topo do prédio sob um ângulo de 60 graus.



$$\tan 60 = \sqrt{3} = \frac{h}{30}$$

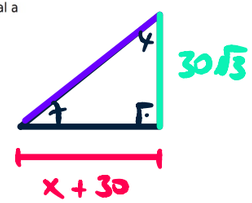
$$h = 30\sqrt{3}$$

Após isso, ela caminha até o ponto C, ponto em que ela visualiza o topo do prédio sob um ângulo de 45 graus.

A distância entre os pontos B e C é aproximadamente igual a

a) 51 m
b) 37 m
c) 28 m
d) 21 m
e) 17 m

$x = ?$



$$30\sqrt{3} = x + 30$$

$$x = 30(\sqrt{3} - 1)$$

$$\simeq 30 \cdot 0{,}7$$

$$\simeq 21$$

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