



# TRIGONOMETRY

Chapter 7,8 and 9

**2nd**  
SECONDARY

REVIEW

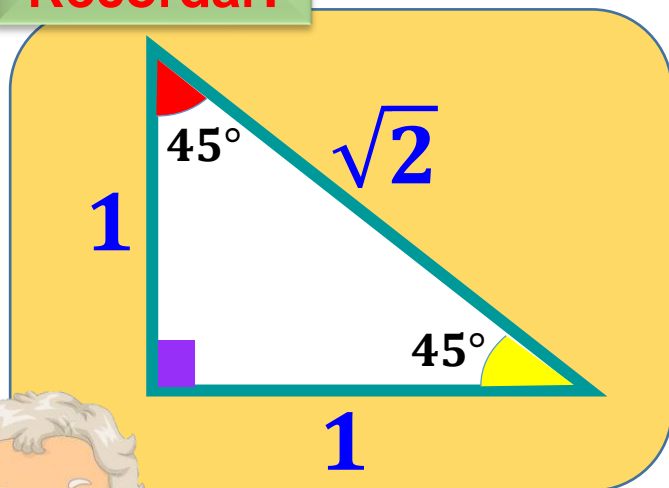


# HELICOPRACTICE 1

Efectúe:

$$A = (5 \cos 45^\circ + 6 \operatorname{sen} 45^\circ) \sec 45^\circ$$

Recordar:



Resolución:

$$A = \left[ 5 \times \left( \frac{1}{\sqrt{2}} \right) + 6 \times \left( \frac{1}{\sqrt{2}} \right) \right] \times (\sqrt{2})$$

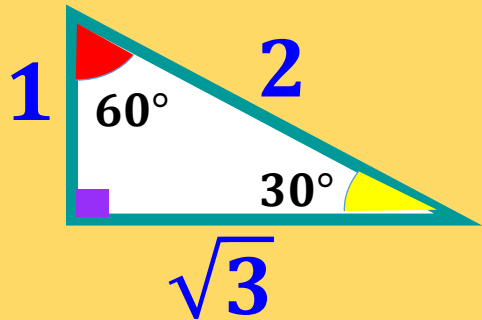
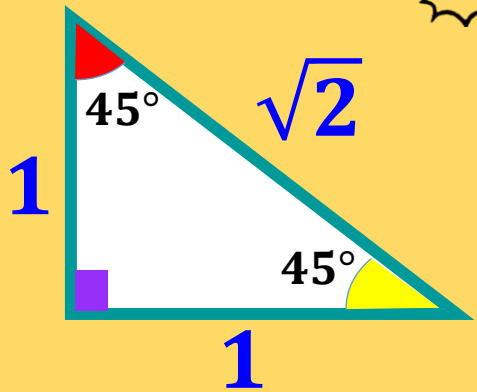
$$A = \left[ \frac{11}{\cancel{\sqrt{2}}} \right] \times (\cancel{\sqrt{2}})$$

$$\therefore A = 11$$

# HELICOPRACTICE 2

Halle el valor de:  $A = (6 \cot 45^\circ)^{\csc 30^\circ} + (12\sqrt{3} \tan 60^\circ)^{\sec 30^\circ}$

Recordar:



Resolución:

$$A = [6 \times (1)]^2 + [12\sqrt{3} \times (\sqrt{3})]^{\frac{1}{2}}$$

$$A = 36 + [36]^{\frac{1}{2}}$$

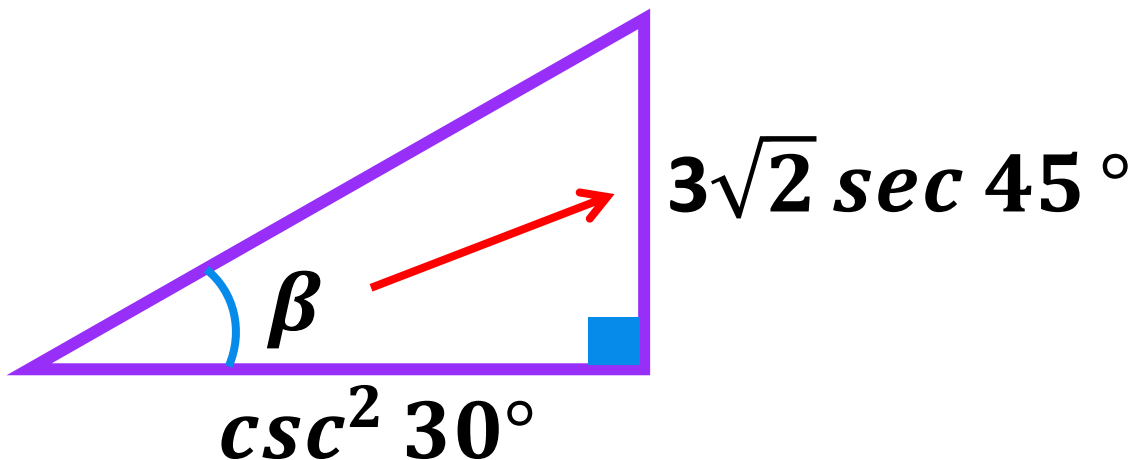
$$A = 36 + \sqrt{36}$$

$$A = 36 + 6$$

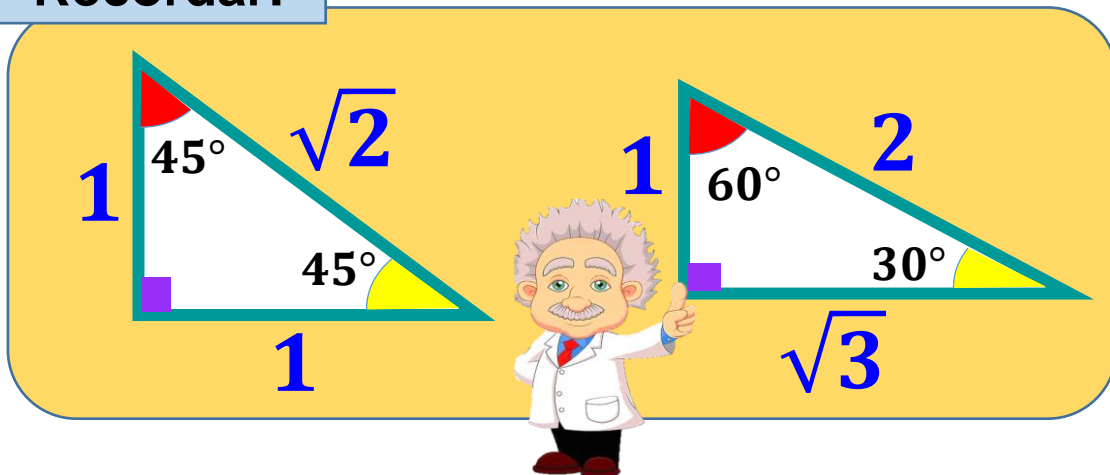
$$\therefore A = 42$$

# HELICOPRACTICE 3

Del gráfico, calcule  $\tan \beta$ .



Recordar:



Resolución:

$$\tan \beta = \frac{3\sqrt{2} \sec 45^\circ}{\csc^2 30^\circ}$$

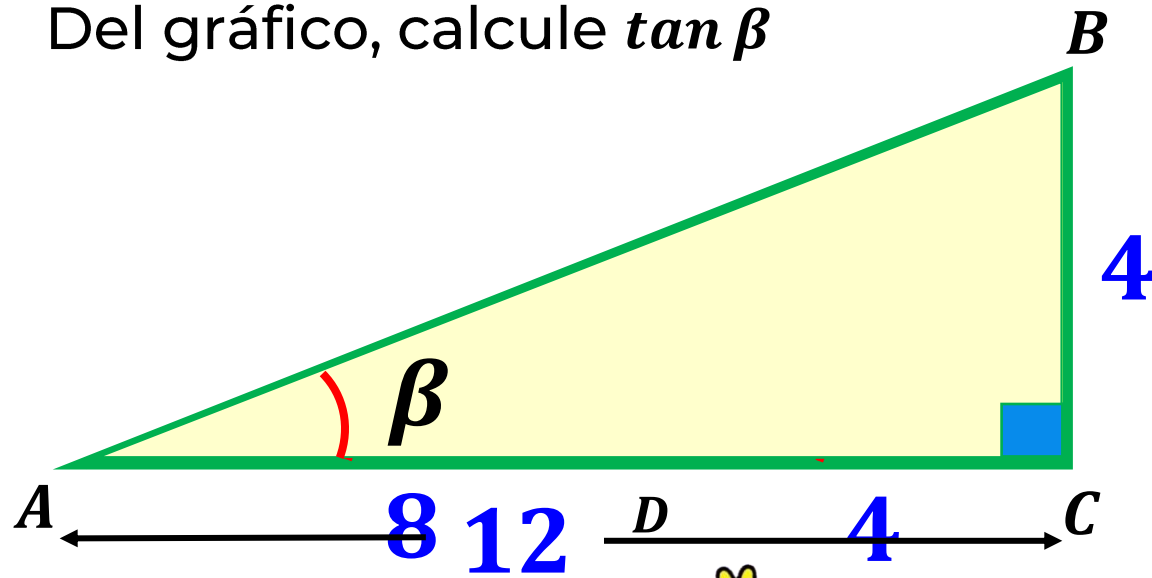
$$\tan \beta = \frac{3\sqrt{2} \times (\sqrt{2})}{(2)^2}$$

$$\tan \beta = \frac{6}{4}$$

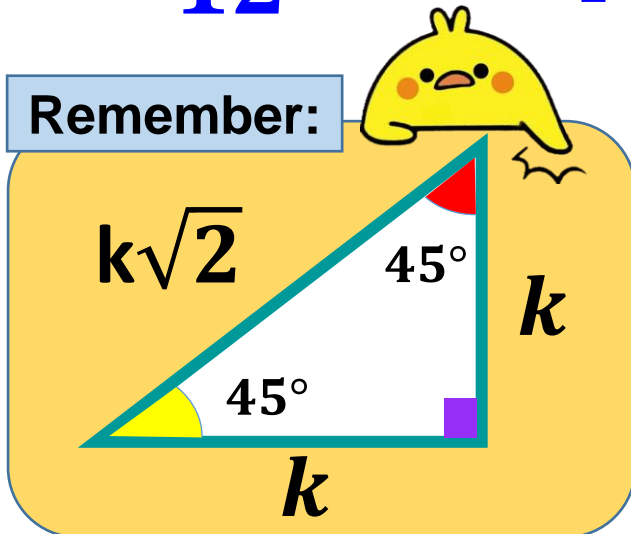
$$\therefore \tan \beta = \frac{3}{2}$$

# HELICOPRACTICE 4

Del gráfico, calcule  $\tan \beta$



Remember:



Resolución:

En el  $\triangle BCD$  (Notable de  $45^\circ$ )

Se observa:

$$DC = 4$$

$$\Rightarrow BC = 4$$

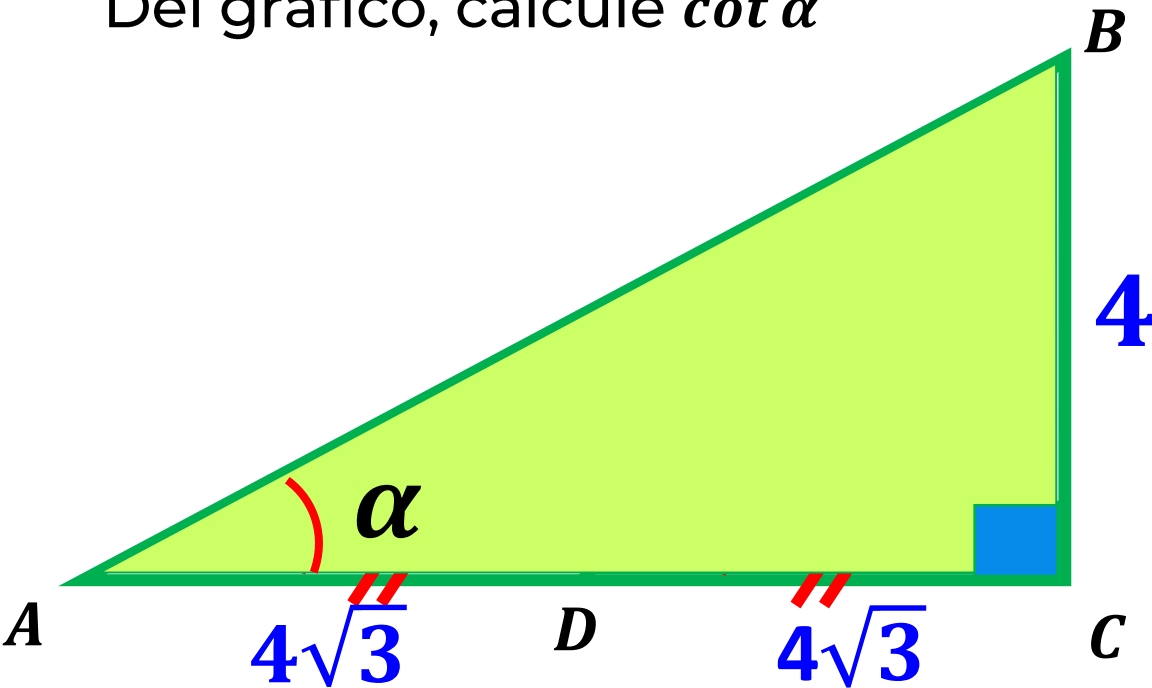
Piden:

$$\tan \beta = \frac{4}{12}$$

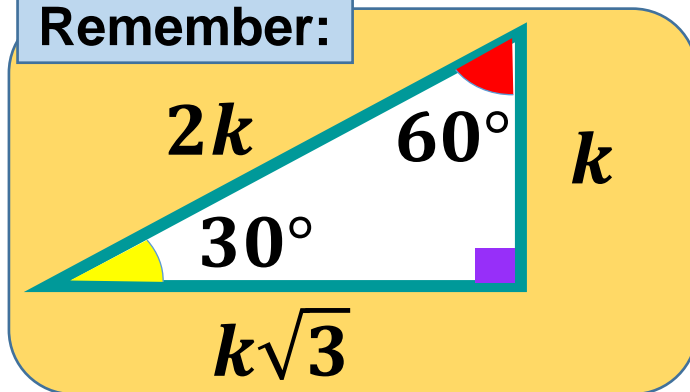
$$\therefore \tan \beta = \frac{1}{3}$$

# HELICOPRACTICE 5

Del gráfico, calcule  $\cot \alpha$



Remember:



Resolución:

En el  $\triangle BCD$  (Notable de  $30^\circ$  y  $60^\circ$ )

$$\underline{BC} = 4$$

$$k = 4$$

Luego:  $DC = 4\sqrt{3}$

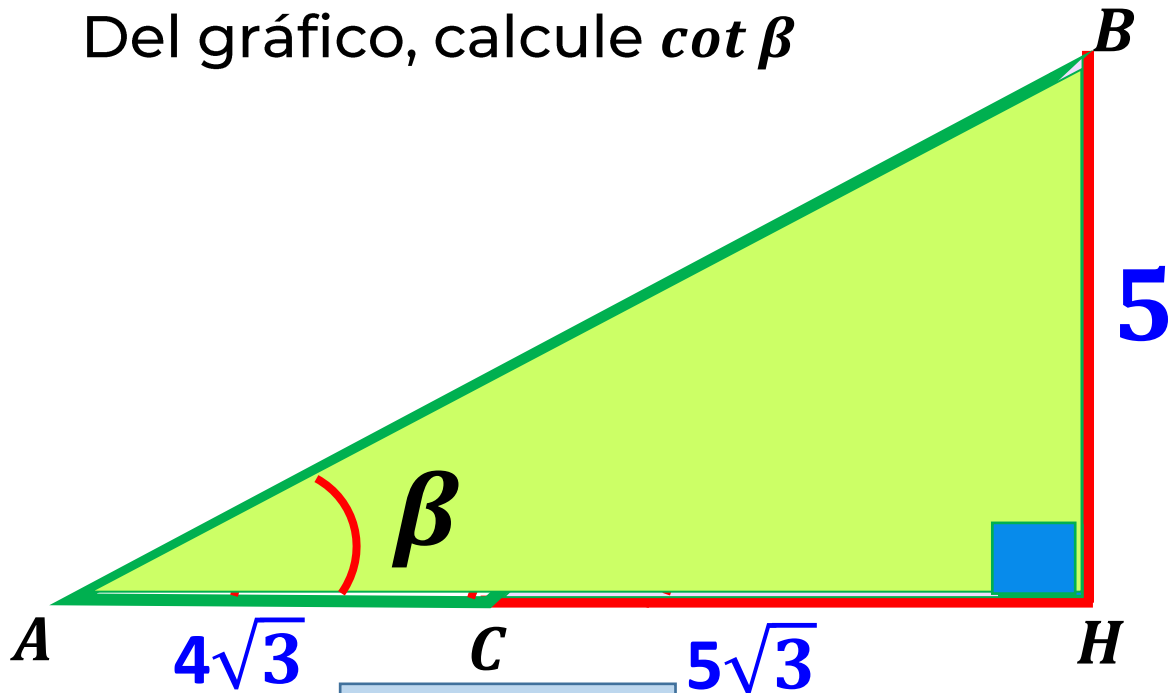
Piden:

$$\cot \alpha = \frac{8\sqrt{3}}{4}$$

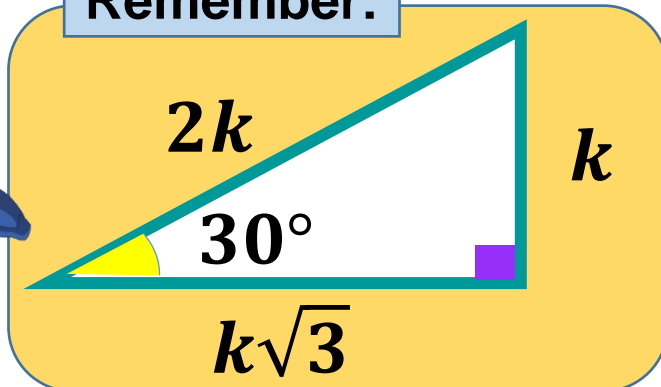
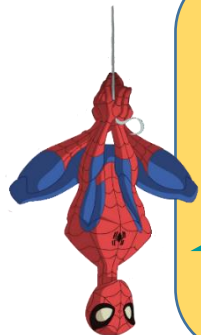
$$\therefore \cot \alpha = 2\sqrt{3}$$

# HELICOPRACTICE 6

Del gráfico, calcule  $\cot \beta$



Remember:



Resolución:

En el  $\triangle BHC$  (Notable de  $30^\circ$  y  $60^\circ$ )

Se observa

$$\underline{BC} = 10$$

$$2k = 10 \Rightarrow k = 5$$

Luego:

$$BH = 1(5) = 5$$

$$CH = \sqrt{3}(5) = 5\sqrt{3}$$

$$\therefore \cot \beta = \frac{9\sqrt{3}}{5}$$

## HELICOPRACTICE 7

Efectúe:  $E = \frac{b}{a}$

, Si  $\text{sen } 24^\circ \cdot \text{csc } a = 1$   
 $\text{tan } 36^\circ \cdot \text{cot } b = 1$

Resolución:

Del dato:

$$\text{sen } 24^\circ \cdot \text{csc } a = 1$$

$$\Rightarrow a = 24^\circ$$

$$\text{tan } 36^\circ \cdot \text{cot } b = 1$$

$$\Rightarrow b = 36^\circ$$

Remember:

$$\text{sen } \alpha \cdot \text{csc } \alpha = 1$$

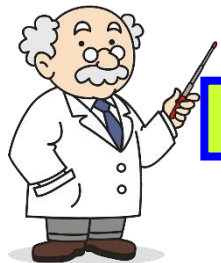
Piden:  $E = \frac{b}{a}$

$$E = \frac{36}{24}$$

Remember:

$$\text{tan } \beta \cdot \text{cot } \beta = 1$$

$$\therefore E = \frac{3}{2}$$





# HELICOPRACTICE 8

Halle el valor de  $x$ ,  $\tan 8x \cdot \cot(2x + 66^\circ) = 1$

Resolución:

Del dato:

$$\tan 8x \cdot \cot(2x + 66^\circ) = 1$$

$$\Rightarrow 8x = 2x + 66^\circ$$

$$6x = 66^\circ$$

$$\therefore x = 11^\circ$$

Remember:

$$\tan \alpha \cdot \cot \alpha = 1$$



# HELICOPRACTICE 9

Sabiendo que:  $\text{sen } 12x \cdot \text{csc}(4x + 40^\circ) - 1 = 0$

Determine:  $P = \text{sen } 6x \cdot \text{csc}(8x - 10^\circ)$

**Resolución:**

**Del dato:**

$$\text{sen } 12x \cdot \text{csc}(4x + 40^\circ) - 1 = 0$$

$$\underline{\text{sen } 12x} \cdot \underline{\text{csc}(4x + 40^\circ)} = 1$$

$$\Rightarrow 12x = 4x + 40^\circ$$

$$8x = 40^\circ$$

$$x = 5^\circ$$

**Piden:**

$$P = \text{sen } 6x \cdot \text{csc}(8x - 10^\circ)$$

$$P = \text{sen } 6(5^\circ) \cdot \text{csc}(8(5^\circ) - 10^\circ)$$

$$P = \underline{\text{sen } 30^\circ} \cdot \underline{\text{csc}(30^\circ)}$$

$$\therefore P = 1$$

**Remember:**

$$\text{sen } \alpha \cdot \text{csc } \alpha = 1$$



# HELICOPRACTICE 10

Rodrigo es un niño al que le gusta cuidar su salud, diariamente sale a correr 50 min alrededor del parque que esta cerca a su casa (el parque tiene forma rectangular, ver figura). Determine cuantos metros recorre en una 3 vueltas al parque.



## Resolución:

$$40 \tan 45^\circ m = 40 \times (1)$$

$$\Rightarrow 40 \tan 45^\circ m = 40m$$

$$120 \cos 60^\circ m = \overset{60}{\cancel{120}} \times \left( \frac{1}{\cancel{2}} \right) \underset{1}{}$$

$$\Rightarrow 120 \cos 60^\circ m = 60m$$

En una vuelta recorrerá:

$$1V = 40m + 60m + 40m + 60m$$

$$\therefore 1V = 200 m$$