

TRIGONOMETRY

VOLUME III

1st

SECONDARY

FEEDBACK

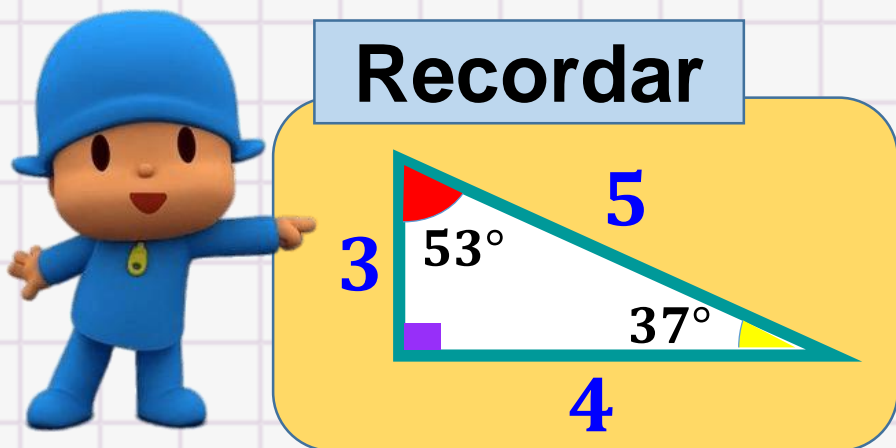


1) Escriba verdadero (V) o falso (F) según corresponda.

a. $5 \operatorname{sen} 37^\circ = 3$ (V)

b. $8 \operatorname{sec} 37^\circ = 25$ (F)

c. $18 \tan 53^\circ = 24$ (V)



RESOLUCIÓN

a. $5 \operatorname{sen} 37^\circ = \cancel{5} \left(\frac{3}{\cancel{5}} \right) = 3$

b. $8 \operatorname{sec} 37^\circ = \cancel{8} \left(\frac{5}{\frac{4}{\cancel{1}}}} \right) = 10$

c. $18 \tan 53^\circ = \cancel{18} \left(\frac{4}{\frac{3}{\cancel{1}}}} \right) = 24$

∴ **V; F; V**

2) Calcule el valor de y si $y - \tan 53^\circ = \csc 37^\circ + \cot 37^\circ$.

RESOLUCIÓN

$$\rightarrow y - \tan 53^\circ = \csc 37^\circ + \cot 37^\circ$$

$$y - \frac{4}{3} = \frac{5}{3} + \frac{4}{3}$$

$$y - \frac{4}{3} = \frac{9}{3}$$

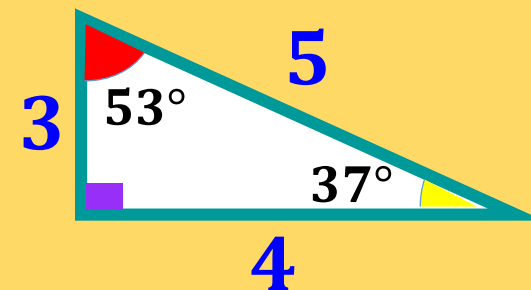
$$y = \frac{9}{3} + \frac{4}{3}$$

\therefore

$$y = \frac{13}{3}$$



Recordar

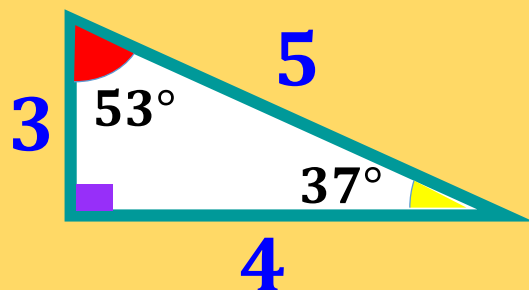


3) Efectúe

$$P = \frac{\cos 53^\circ + \cot 37^\circ}{\tan 53^\circ - \sec 53^\circ}$$



Recordar



RESOLUCIÓN

$$P = \frac{\frac{3}{5} + \frac{4}{3}}{\frac{4}{3} - \frac{4}{5}} = \frac{\frac{9 + 20}{15}}{\frac{20 - 12}{15}} = \frac{29}{8}$$

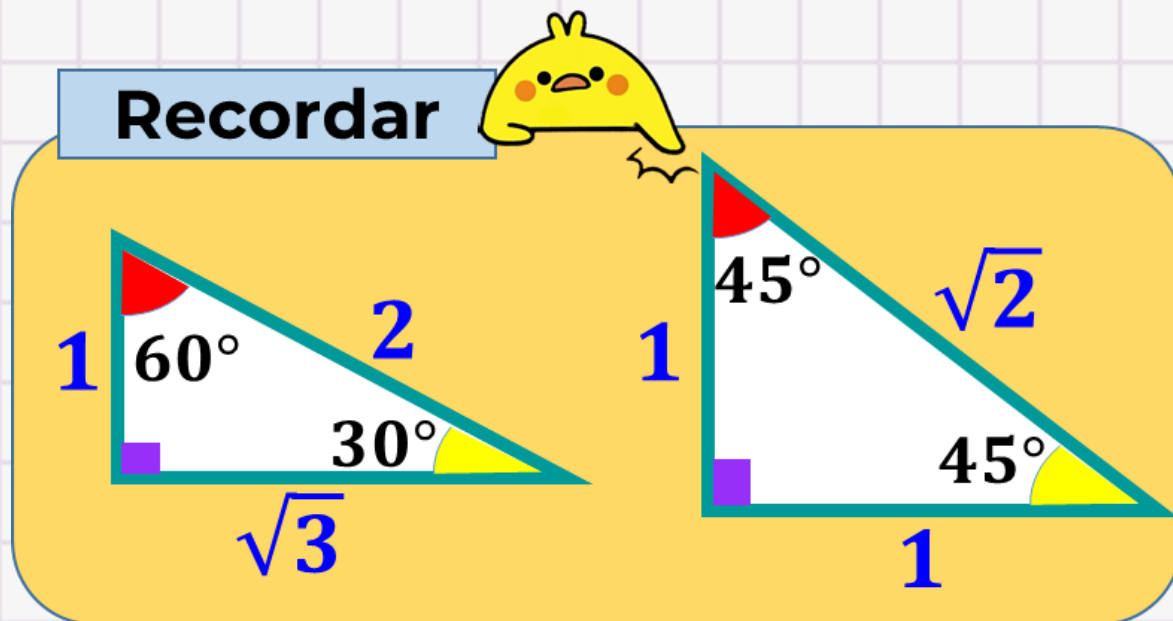
$$= \frac{29 \times 15}{15 \times 8}$$

∴

$$P = \frac{29}{8}$$

4) Calcule

$$M = \frac{16 \cot 45^\circ + 8 \cos 60^\circ}{\sec^2 45^\circ}$$



RESOLUCIÓN

$$M = \frac{16(1) + 8 \left(\frac{1}{2} \right)}{(\sqrt{2})^2}$$

$$M = \frac{16 + 4}{2} = \frac{20}{2}$$

$$\therefore M = 10$$

5) Determine el valor de x si

$$x \cdot \cot^2 30^\circ - 4 \sec 60^\circ = 7 \cot 45^\circ$$

RESOLUCIÓN

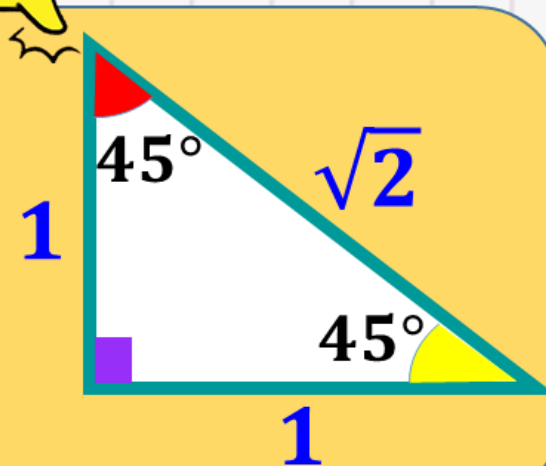
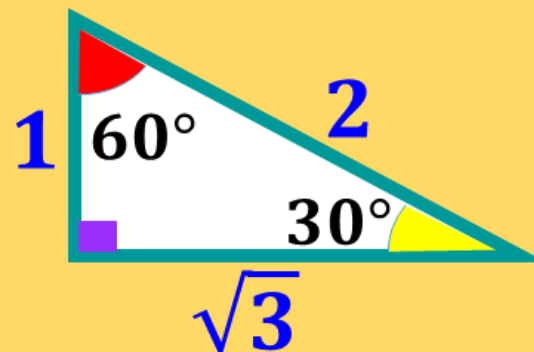
$$\rightarrow x \cdot \cancel{\sqrt{3}}^2 - 4(2) = 7(1)$$

$$3x - 8 = 7$$

$$3x = 15$$

$$\therefore \boxed{x = 5}$$

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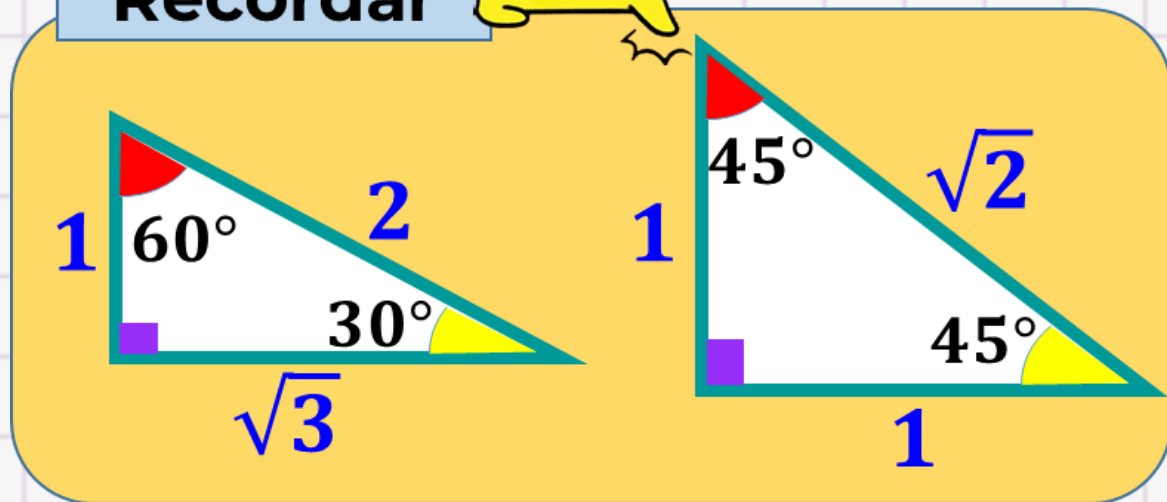


6) Calcule $A \cdot B$, si

$$A = 3 \sec^2 30^\circ + 2 \operatorname{sen}^2 45^\circ$$

$$B = \tan^2 60^\circ + \operatorname{csc}^2 30^\circ$$

Recordar



RESOLUCIÓN

$$\rightarrow A = 3 \left(\frac{2}{\sqrt{3}} \right)^2 + 2 \left(\frac{1}{\sqrt{2}} \right)^2$$

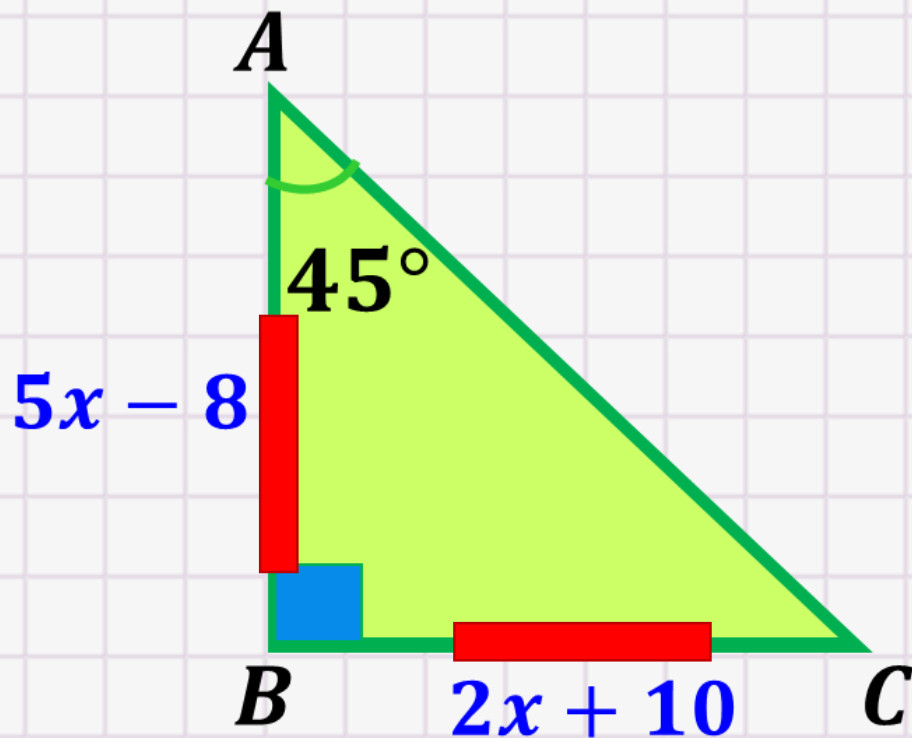
$$A = \cancel{3} \left(\frac{\cancel{4}}{\cancel{3}} \right) + \cancel{2} \left(\frac{\cancel{1}}{\cancel{2}} \right) = 5$$

$$\rightarrow B = \sqrt{\cancel{3}}^2 + \cancel{2}^2$$

$$B = 3 + 4 = 7$$

$$\rightarrow A \cdot B = 5 \cdot 7 \therefore \mathbf{A \cdot B = 35}$$

7) Del gráfico, calcule el valor de x .



RESOLUCIÓN

El $\triangle ABC$ es notable de $45^\circ - 45^\circ$.

$$\rightarrow AB = BC$$

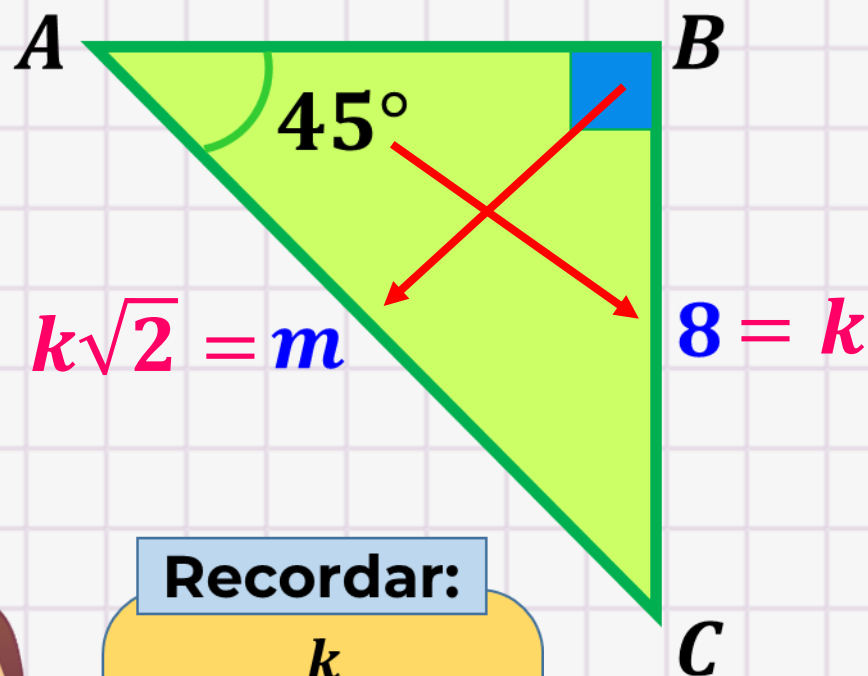
$$5x - 8 = 2x + 10$$

$$5x - 2x = 10 + 8$$

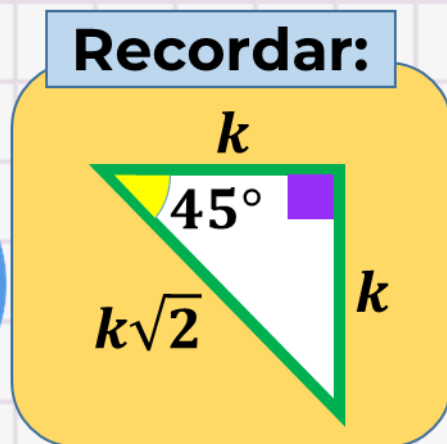
$$3x = 18$$

$$\therefore x = 6$$

8) Del gráfico, calcule m^2 .



Recordar:



RESOLUCIÓN

El ΔABC es notable de $45^\circ - 45^\circ$.

Se observa: $k = 8$

Luego: $m = k\sqrt{2} \Rightarrow m = 8\sqrt{2}$

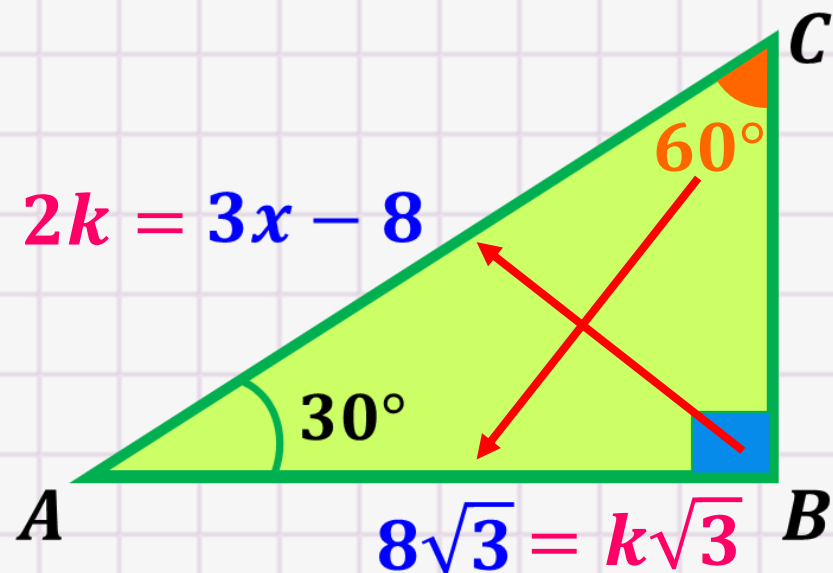
Calculamos: $m^2 = (8\sqrt{2})^2$

$$m^2 = 8^2 \times (\sqrt{2})^2$$

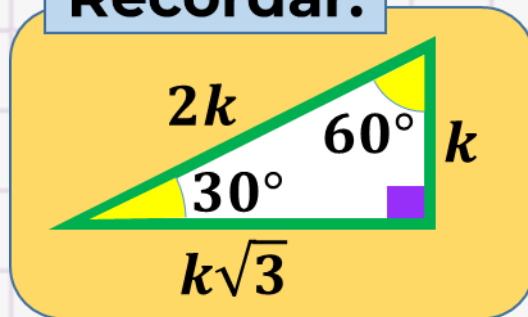
$$m^2 = 64 \times 2$$

$$\therefore m^2 = 128$$

9) Del gráfico, calcule el valor de x .



Recordar:



RESOLUCIÓN

El ΔABC es notable de $30^\circ - 60^\circ$.

Se observa: $k\sqrt{3} = 8\sqrt{3} \Rightarrow k = 8$

Luego: $3x - 8 = 2k$

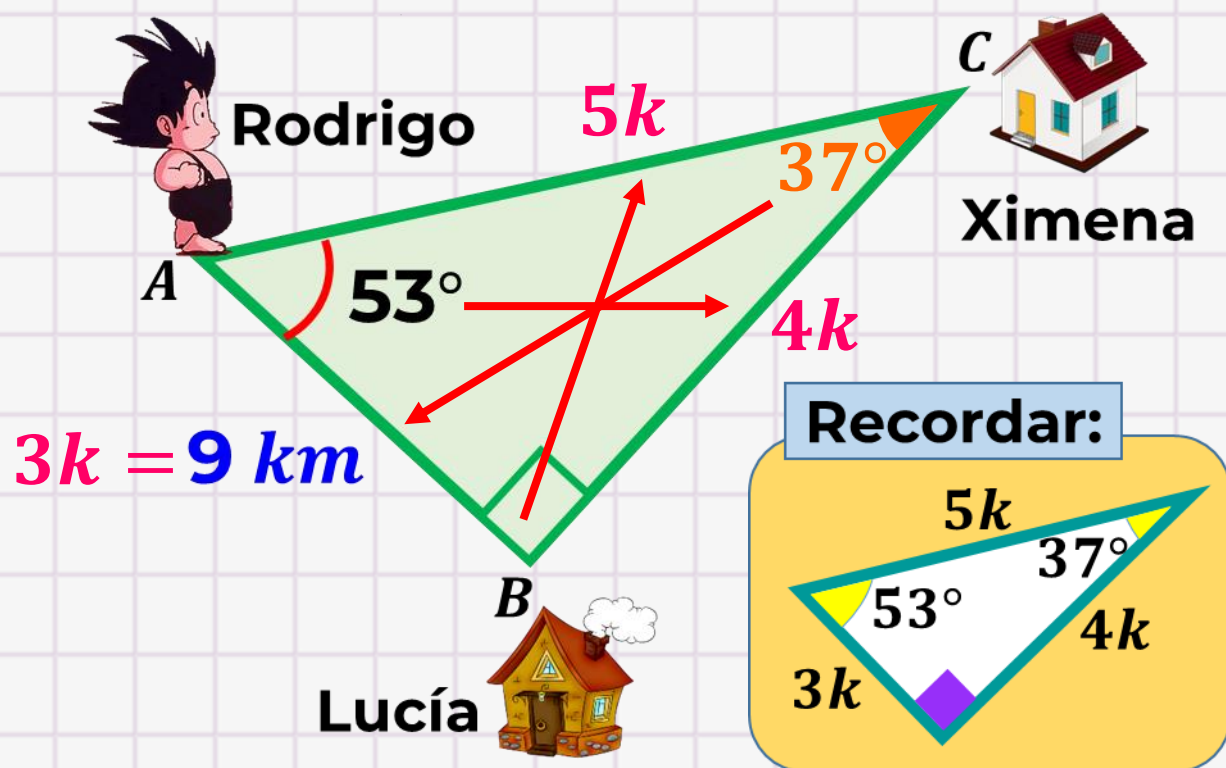
$$\Rightarrow 3x - 8 = 2(8)$$

$$3x - 8 = 16$$

$$3x = 24$$

$$\therefore x = 8$$

- 10)** La imagen muestra la ruta que debe tomar Rodrigo para visitar a sus compañeras Ximena y Lucía. Si inicia su recorrido visitando a Ximena y termina en casa de Lucía ¿Cuántos kilómetros recorre Rodrigo en total?



RESOLUCIÓN

El $\triangle ABC$ es notable de $37^\circ - 53^\circ$.

Se observa: $3k = 9 \rightarrow k = 3$

Luego: $AC = 5k$

$$AC = 5(3)$$

$$AC = 15 \text{ km}$$

$$BC = 4k$$

$$BC = 4(3)$$

$$BC = 12 \text{ km}$$

→ Recorrido = $15 \text{ km} + 12 \text{ km} = 27 \text{ km}$



SACO
OLIVEROS