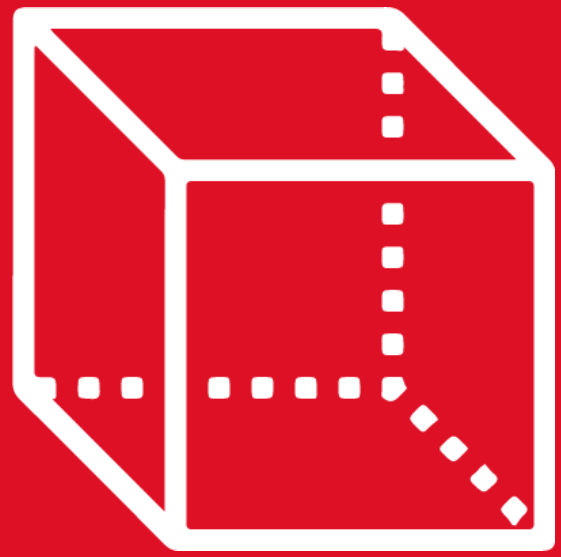
GEOMETRÍA

TOMO 7



1rd
SECONDARY

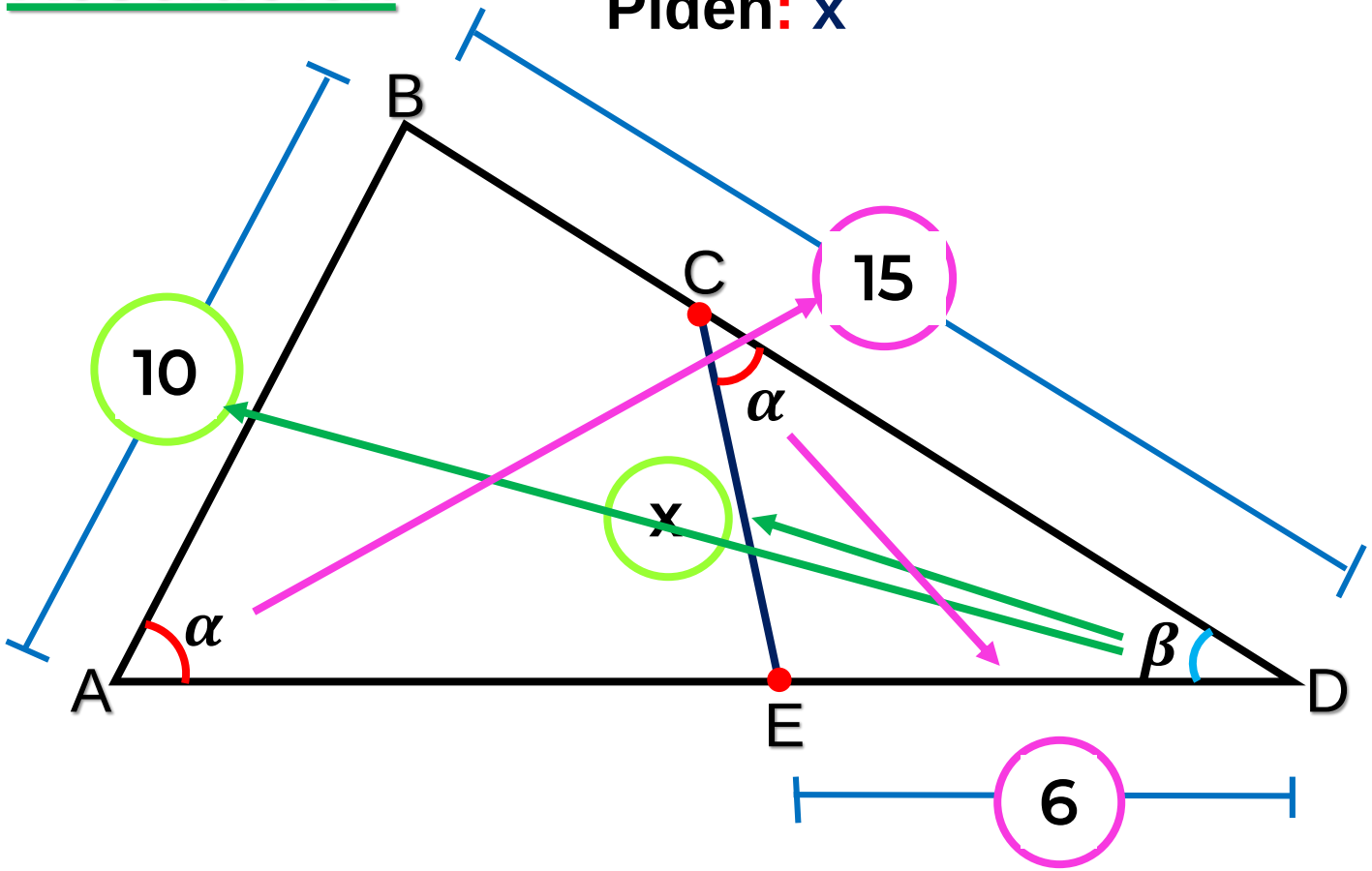
RETROALIMENTACIÓN

SACO OLIVEROS

1. Se tiene un triángulo ABD, donde C ∈ $\overline{BD}$, E ∈ $\overline{AD}$ y m<BAD = m<ECD. Si AB = 10, BD = 15 y ED = 6; halle CE.

Resolución

Piden: x



$\Delta CDE \sim \Delta ADB$

$$\frac{x}{10} = \frac{6}{15}$$

$$(15).(x) = (10).(6)$$

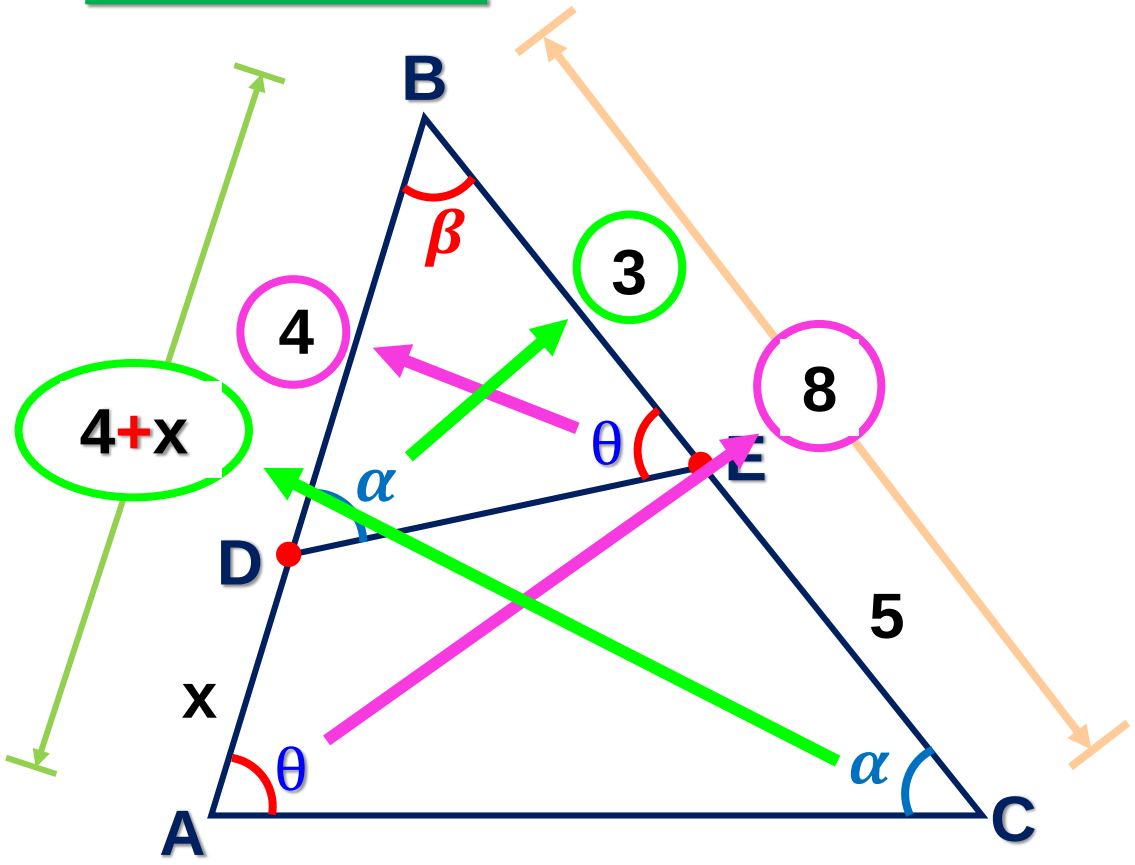
$$15x = 60$$

$$x = 4$$

2. En un triángulo ABC se ubican los puntos tal que, $D \in \overline{AB}$, $E \in \overline{BC}$, $m\sphericalangle BDE = m\sphericalangle BCA$ y BD = 4, BE = 3 y EC = 5. Halle DA.

Resolución

Piden: x



$\Delta EBD \sim \Delta ABC$

$$\frac{3}{4+x} = \frac{\cancel{4}^{1}}{\cancel{8}_{2}}$$

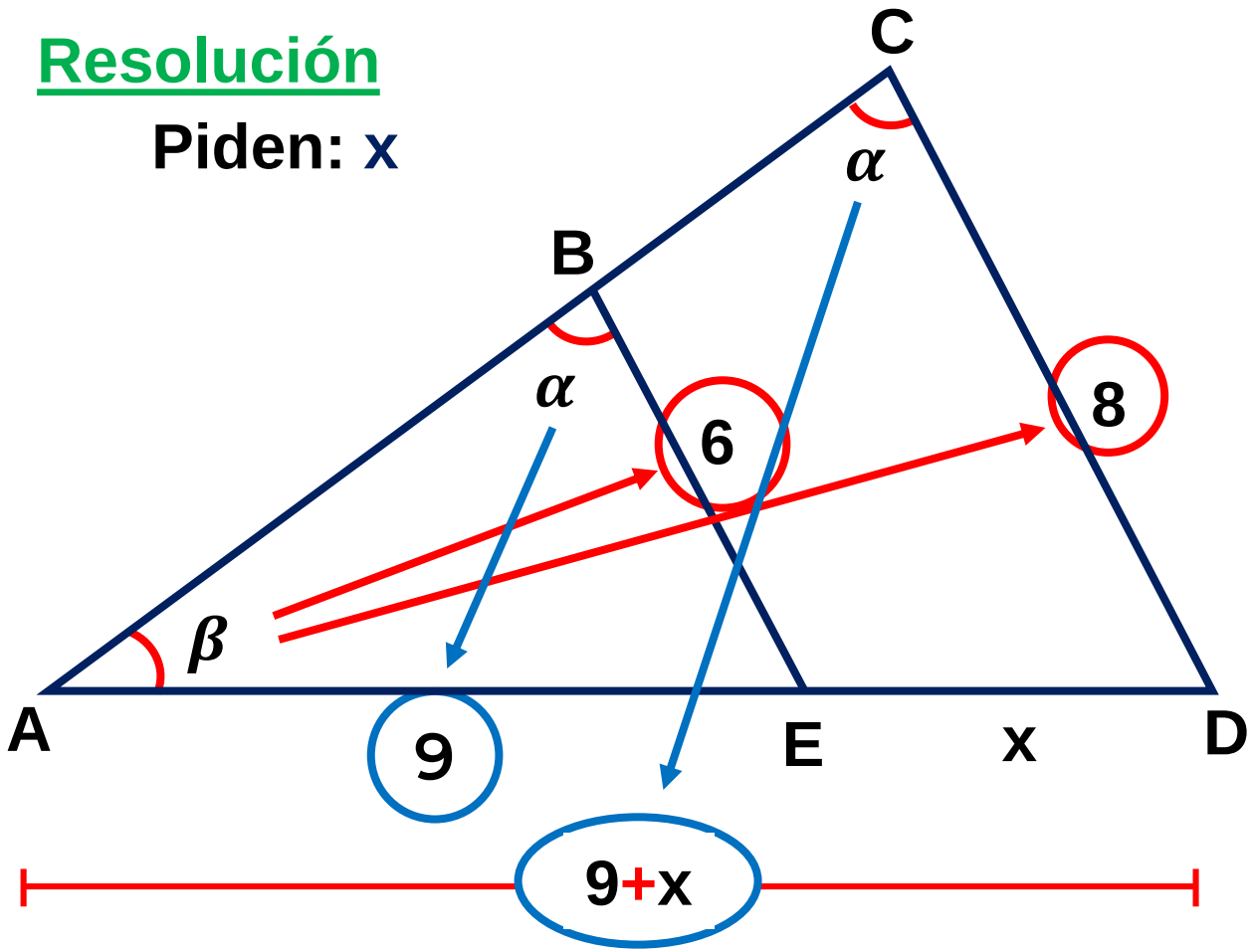
$$6 = 4 + x$$

$$x = 2$$

3. Halle el valor de x.

Resolución

Piden: x



$\Delta ABE \sim \Delta ACD$

$$\frac{\cancel{6}^{3}}{\cancel{8}_{4}} = \frac{9}{9+x}$$

$$3(9 + x) = 4(9)$$

$$27 + 3x = 36$$

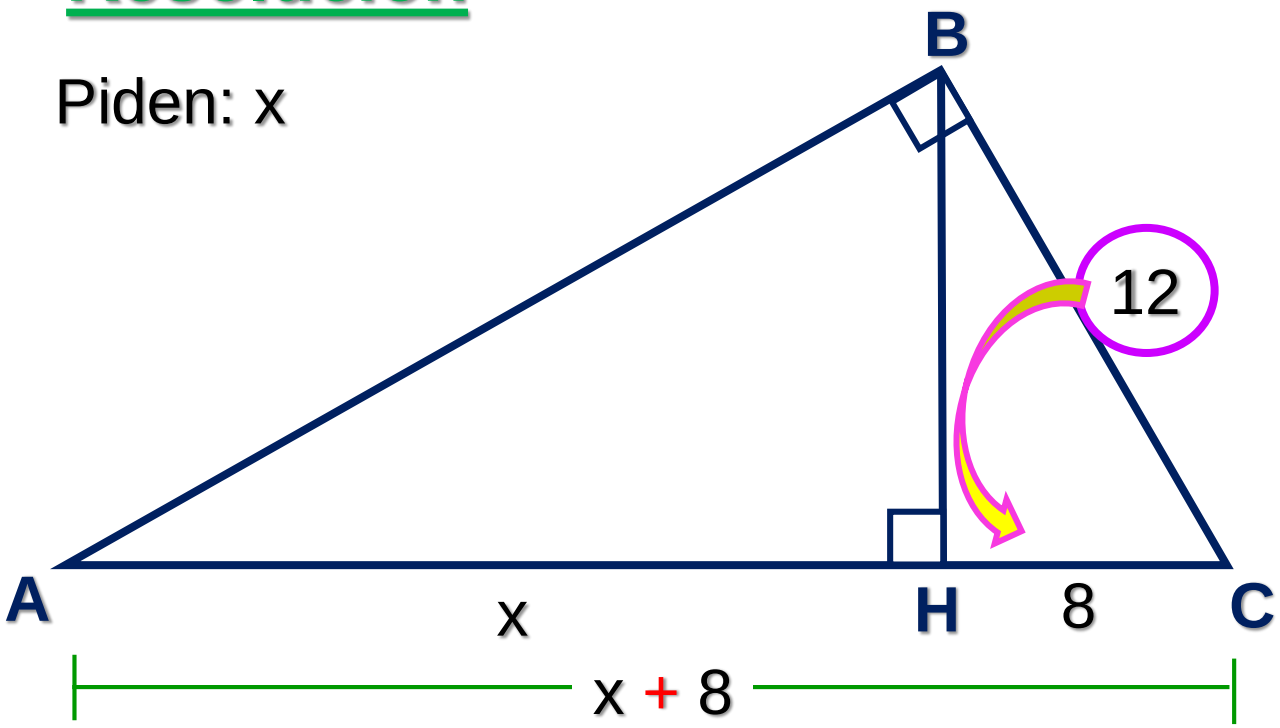
$$3x = 9$$

$$x = 3$$

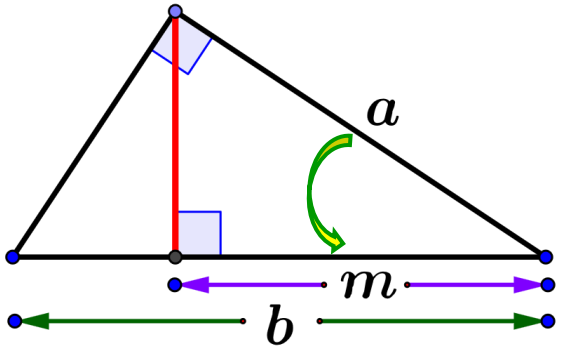
4. En un triángulo ABC, recto en B de traza la altura $\overline{BH}$. Si HC = 8, BC = 12, halle el valor de AH.

Resolución

Piden: x



Teorema del cateto



$a^2 = bm$

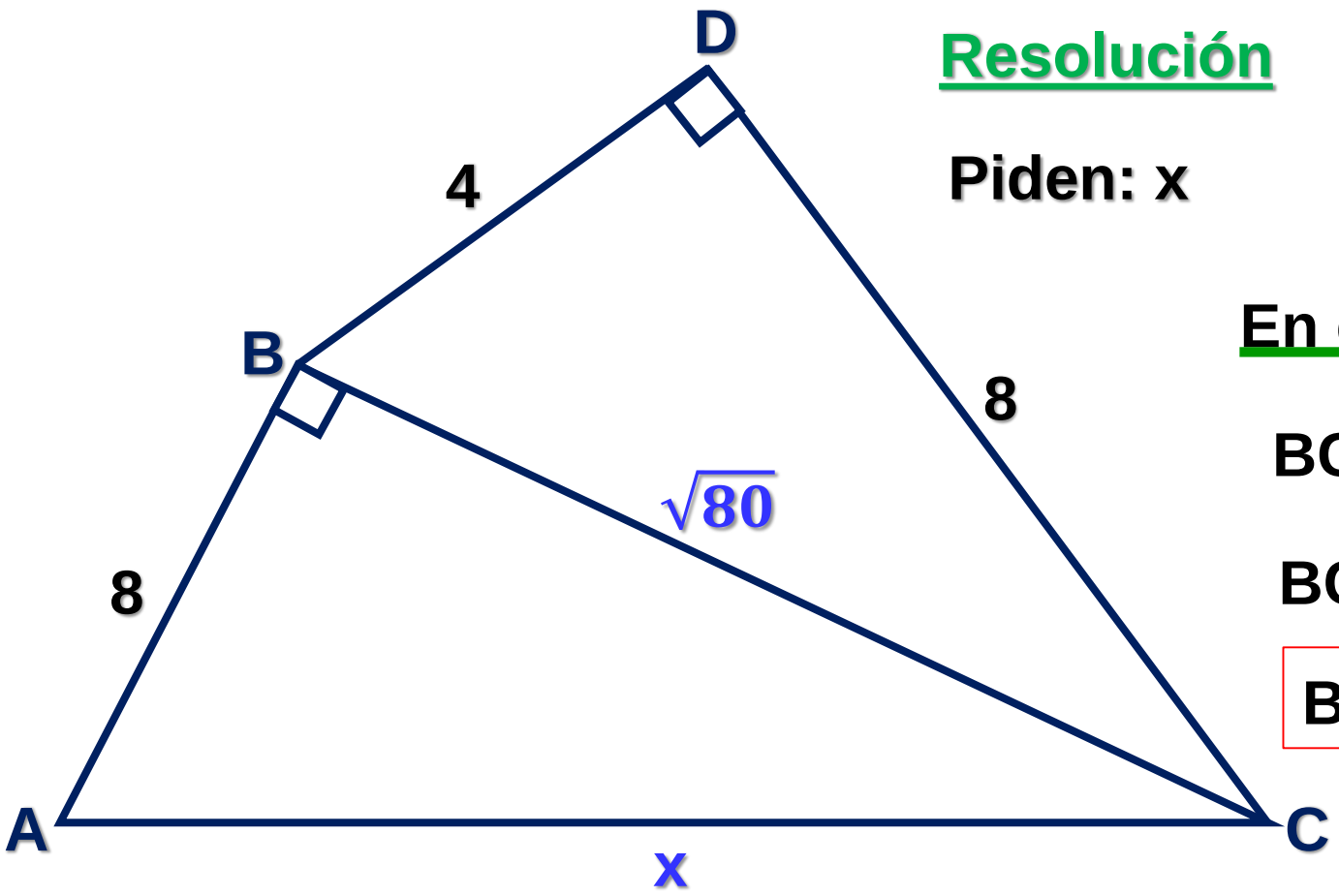
$12^2 = (x + 8)8$

$144 = (x + 8)8$

$18 = x + 8$

x = 10

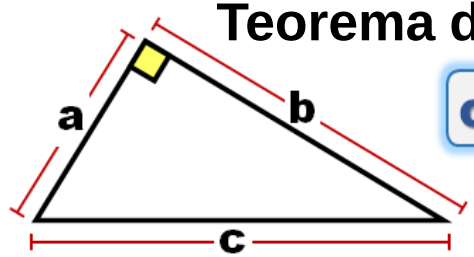
5. En el gráfico, halle el valor de AC.



Resolución

Piden: x

Teorema de Pitágoras



$c^2 = a^2 + b^2$

En el $\triangle$ BDC

$BC^2 = 4^2 + 8^2$

$BC^2 = 16 + 64$

$BC = \sqrt{80}$

En el $\triangle$ ABC

$x^2 = 8^2 + \sqrt{80}^2$

$x^2 = 64 + 80$

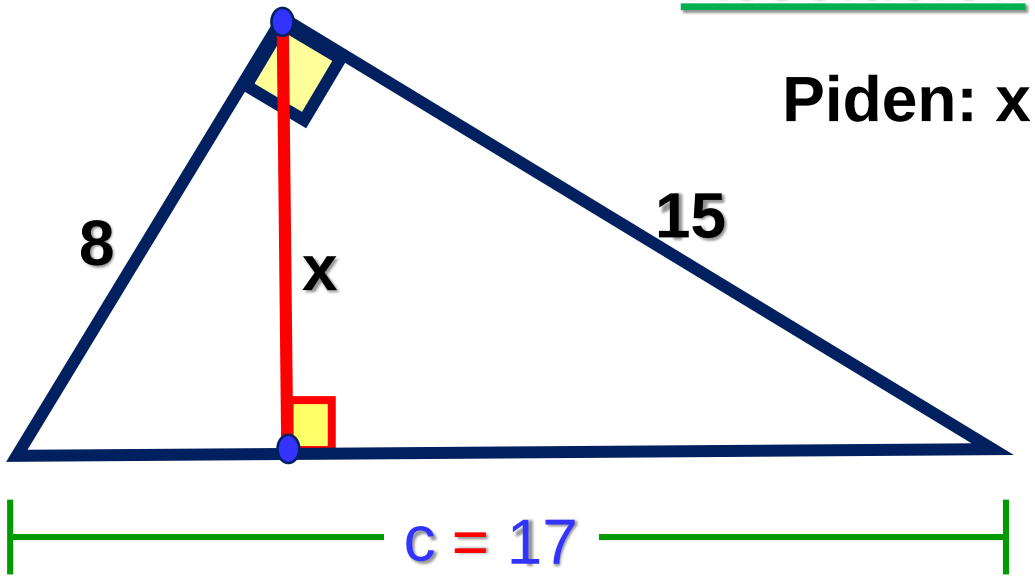
$x^2 = 144$

$x = 12$

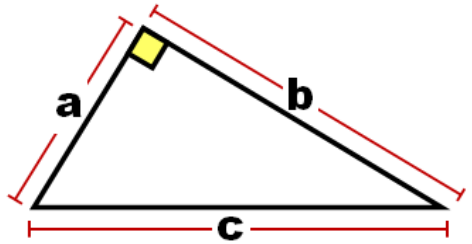
6. En el gráfico , halle el valor de x.

Resolución

Piden: x



T. de Pitágoras



$$c^2 = a^2 + b^2$$

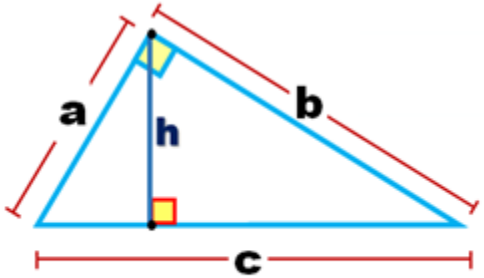
$$c^2 = 8^2 + 15^2$$

$$c^2 = 64 + 225$$

$$c^2 = 289$$

$$c = 17$$

T. del productos de los catetos



$$a.b = c.h$$

$$8 \times 15 = 17x$$

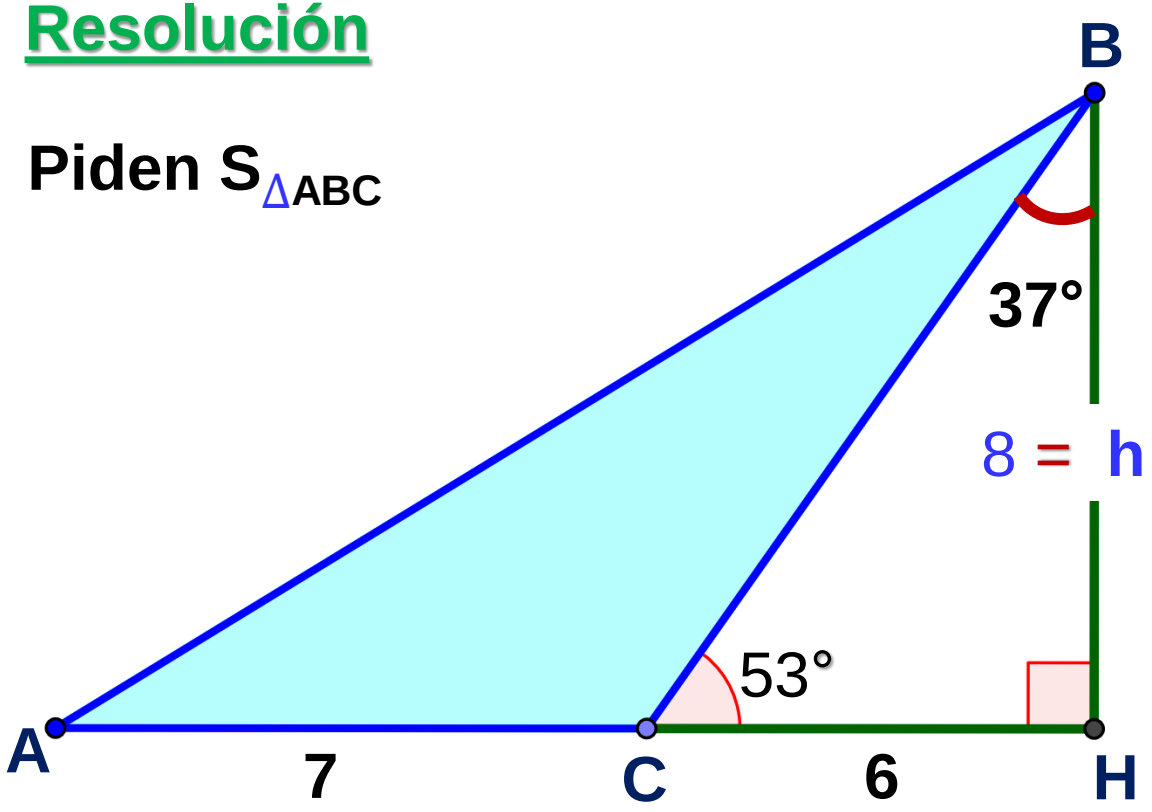
$$120 = 17x$$

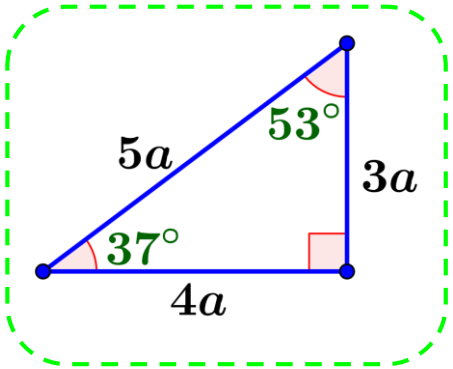
$$x = \frac{120}{17}$$

7. Calcule el área de la región ABC.

Resolución

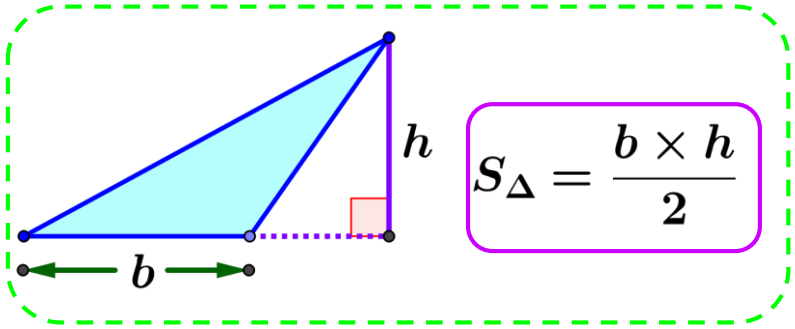
Piden $S_{\Delta ABC}$





$\triangle BHC$ (notable 37°-53°)

h = 8



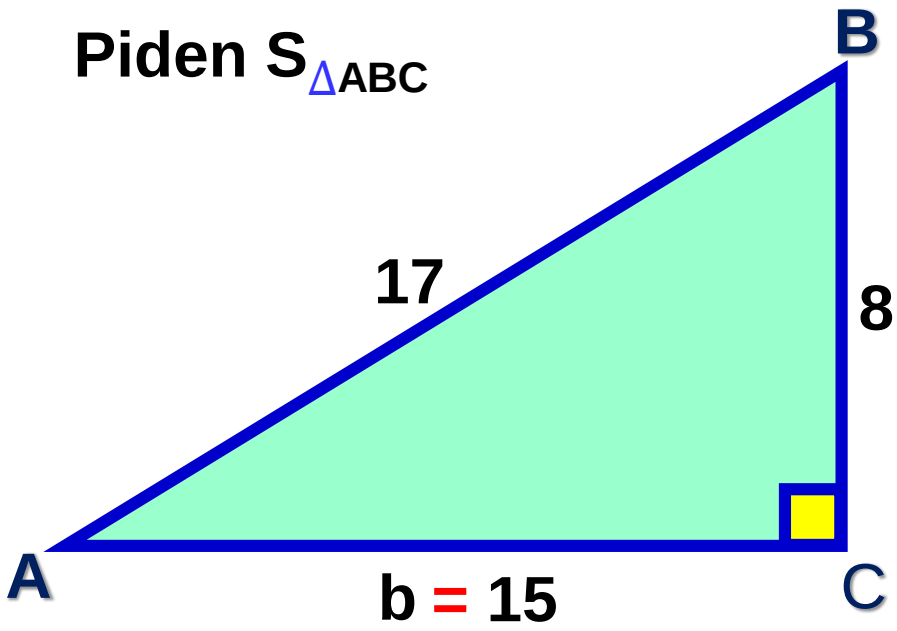
$$S_{\Delta ABC} = \frac{(7)(8)}{2}$$

$$S_{\Delta ABC} = 28\ u^2$$

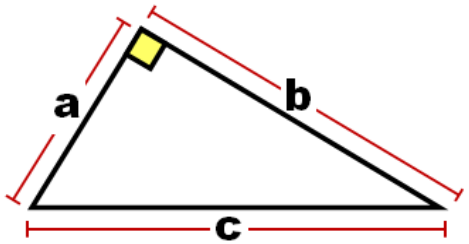
8. Calcule el área de la región limitada por un triángulo rectángulo, si un cateto mide 8 m y la hipotenusa mide 17 m.

Resolución

Piden $S_{\Delta ABC}$



T. de Pitágoras

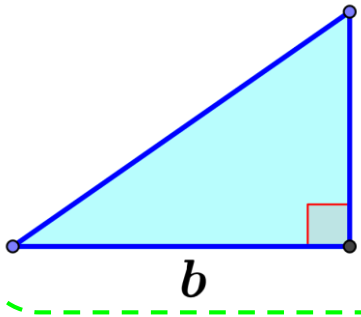


$c^2 = a^2 + b^2$

$17^2 = 8^2 + b^2$

$225 = b^2$

$15 = b$



$S_\Delta = \dfrac{b \times h}{2}$

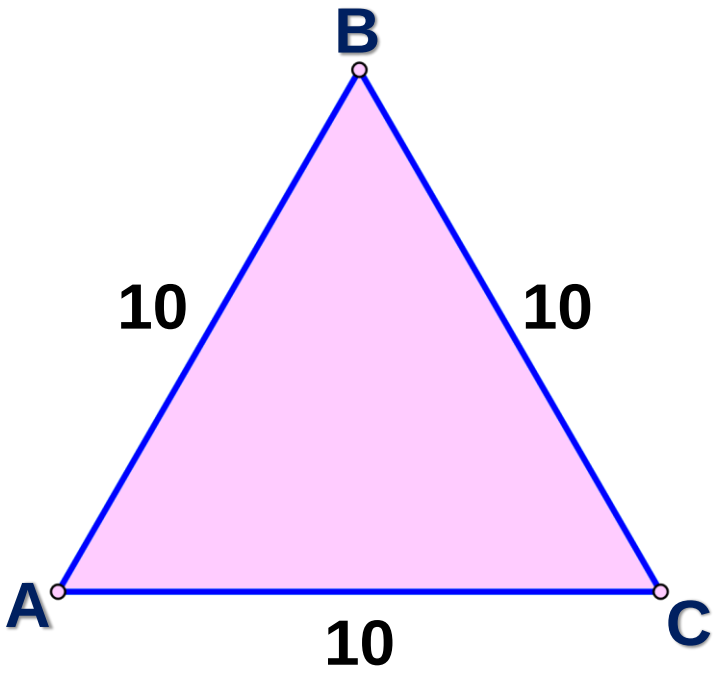
$S_{\Delta ABC} = \dfrac{15 \times 8}{2}$ (4 y 1)

$S_{\Delta ABC} = 60\ m^2$

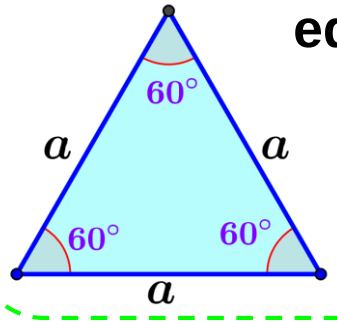
9. Calcule el área de la región limitada por un triángulo equilátero, si la longitud de su lado es 10 m.

Resolución

Piden $S_{\Delta ABC}$



Región triangular equilátera



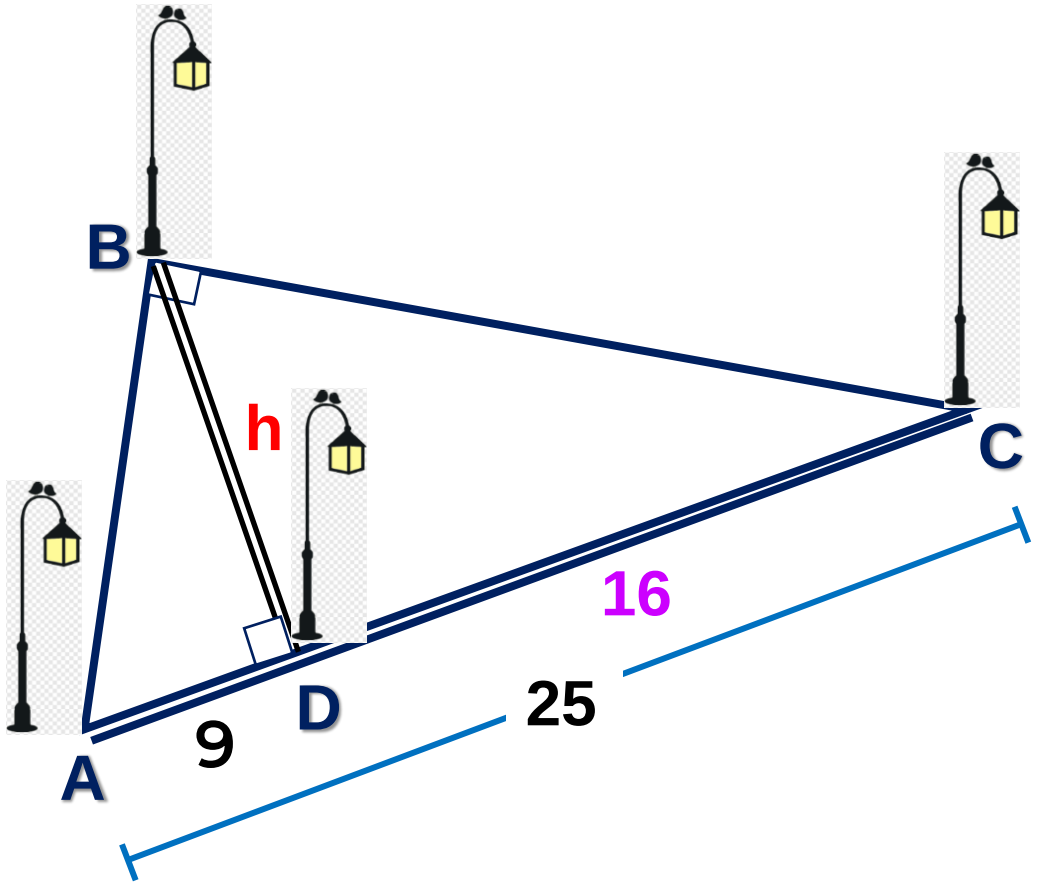
$$S_{\Delta} = a^2 . \frac{\sqrt{3}}{4}$$

$$S_{\Delta ABC} = \frac{10^2 \sqrt{3}}{4}$$

$$S_{\Delta ABC} = \frac{100\sqrt{3}}{4}$$

$$S_{\Delta ABC} = 25\sqrt{3}\ m^2$$

10. Se colocan cuatro postes de alumbrado público en el jardín del profesor Eduardo, como se muestra en la figura. Determine la longitud de la vereda $\overline{BD}$ que cruza el parque.



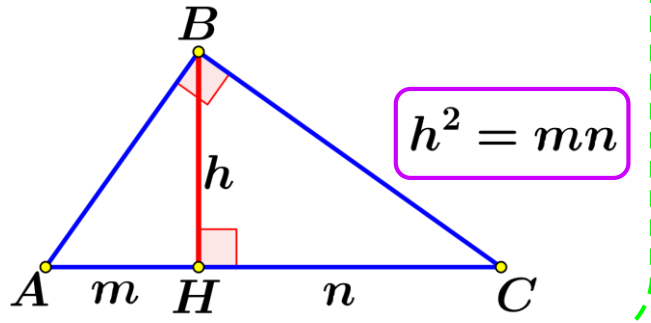
Resolución

Piden: h

DC = 25 - 9

DC = 16

Teorema de la altura



$h^2 = (9)(16)$

$h^2 = 144$

h = 12 m