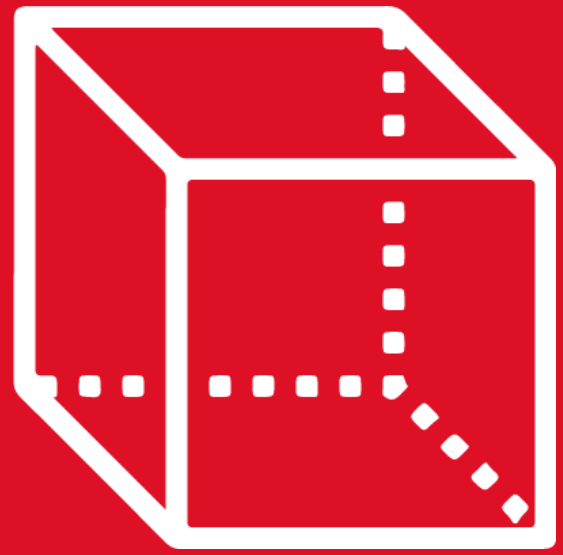
GEOMETRÍA

TOMO 6



2nd

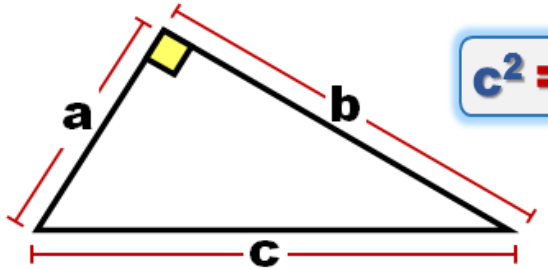
SECONDARY

RETROALIMENTACIÓN

SACO OLIVEROS

1. En un triángulo ABC recto en B, si AB = 8m y BC = 15m, halle el perímetro del triángulo.

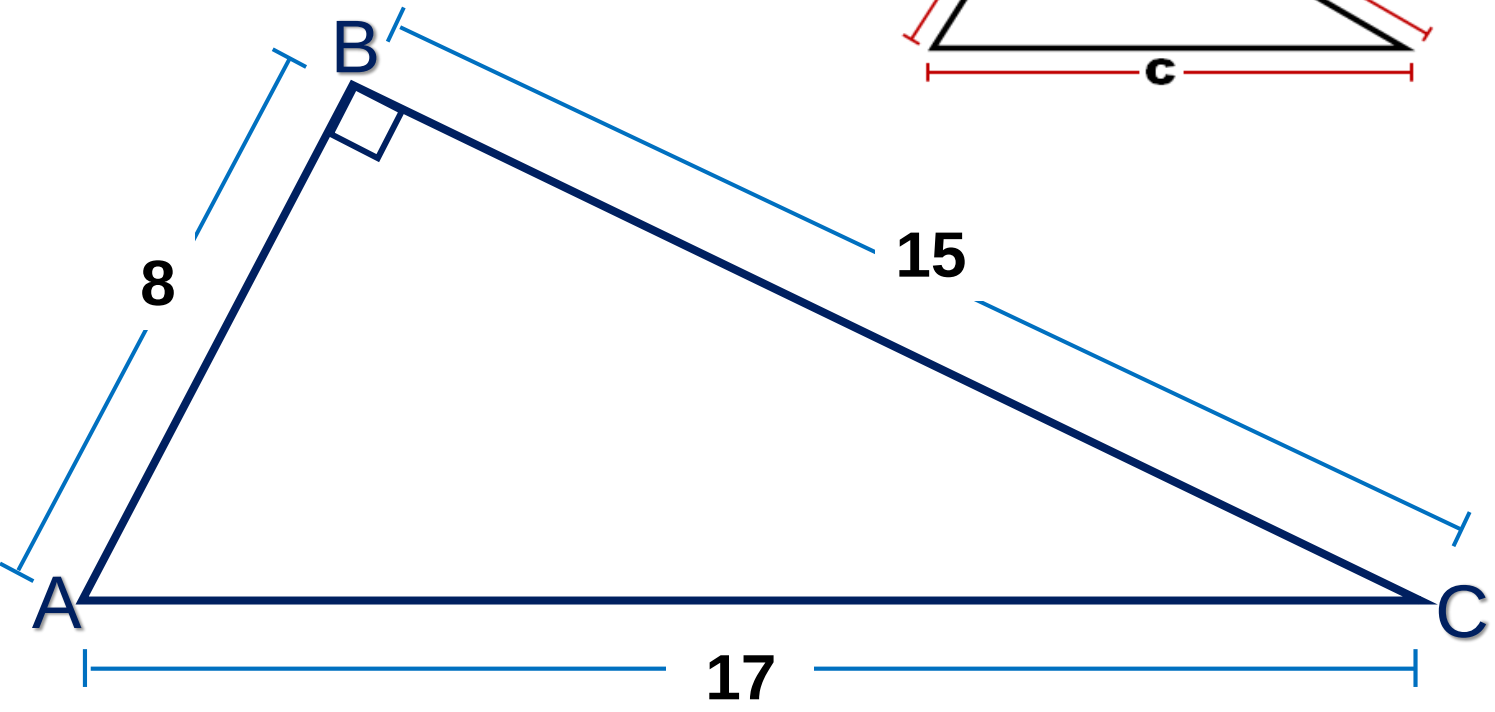
Teorema de Pitágoras



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

RESOLUCIÓN

Piden: $2p_{ABC}$



$AC^2 = 8^2 + 15^2$

$AC^2 = 64 + 225$

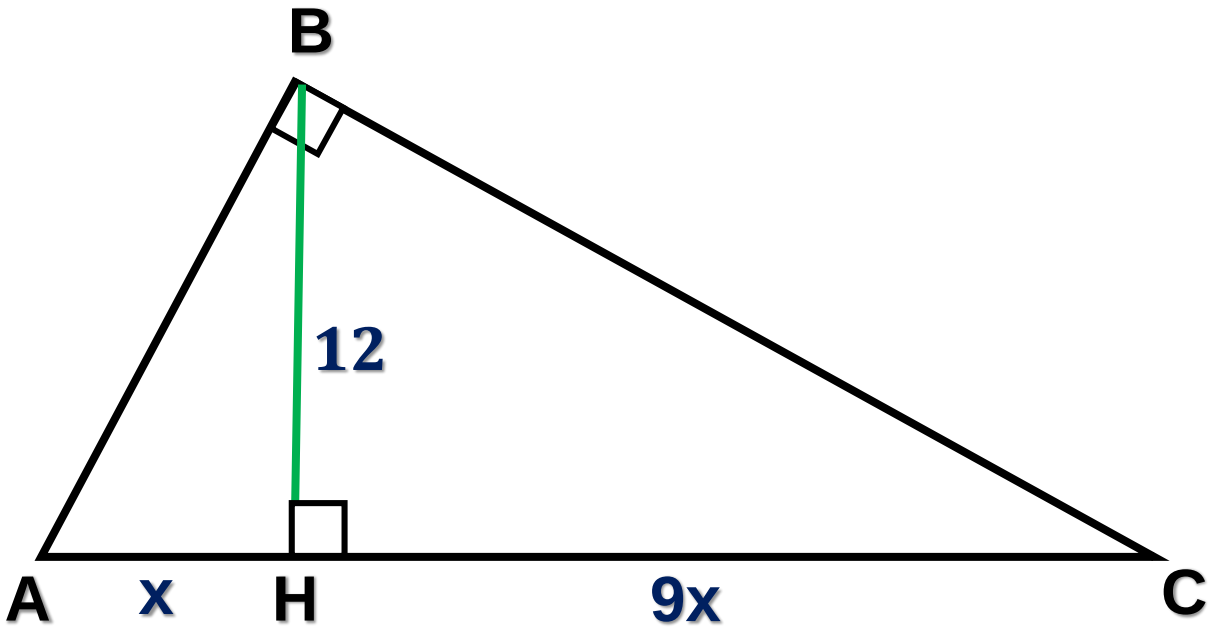
$AC^2 = 289$

$AC = 17$

$2p_{ABC} = 8 + 15 + 17$

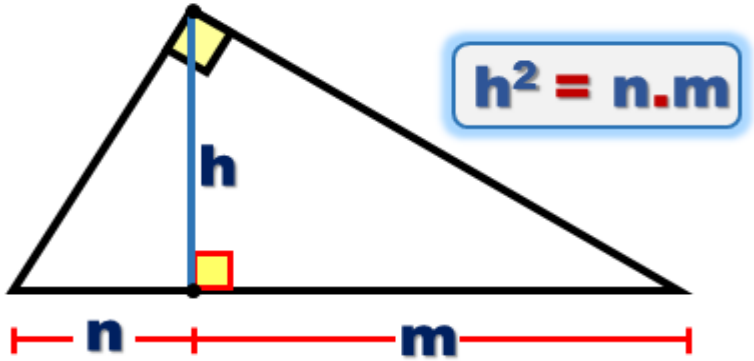
$2p_{ABC} = 40\ m$

2. En el gráfico, halle el valor de *x*.



RESOLUCIÓN

Piden: x



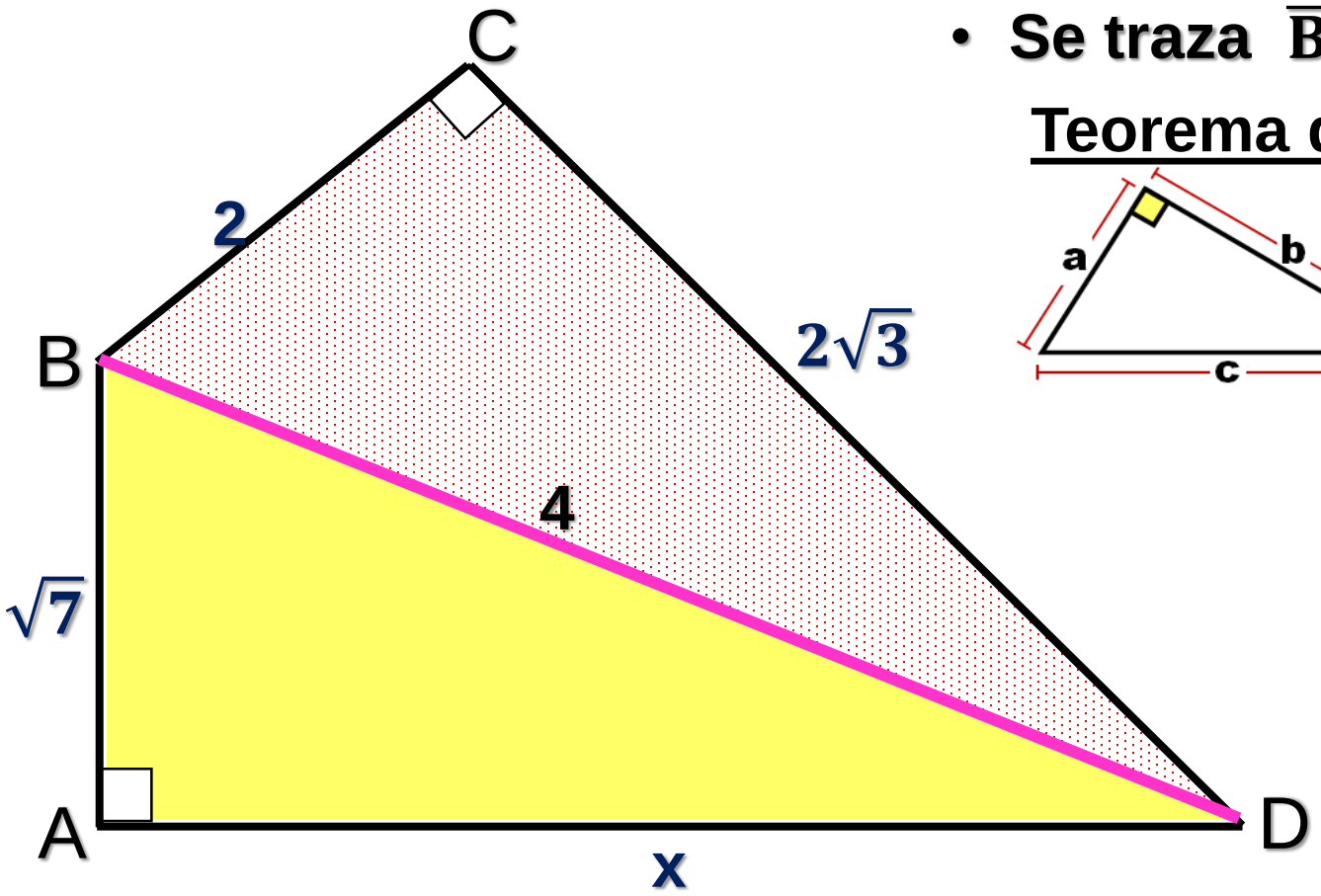
$$12^2 = (x)(9x)$$

$$144 = 9x^2$$

$$16 = x^2$$

$$x = 4\ u$$

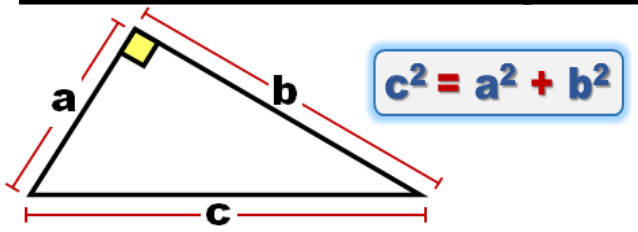
3. En el gráfico, halle el valor de *x*.



RESOLUCIÓN

- Piden: x
- Se traza $\overline{BD}$

Teorema de Pitágoras



- En el $\triangle$ BCD:

$BD^2 = 2^2 + (2\sqrt{3})^2$

$BD^2 = 4 + 12$

$BD = 4$

- En el $\triangle$ ABD:

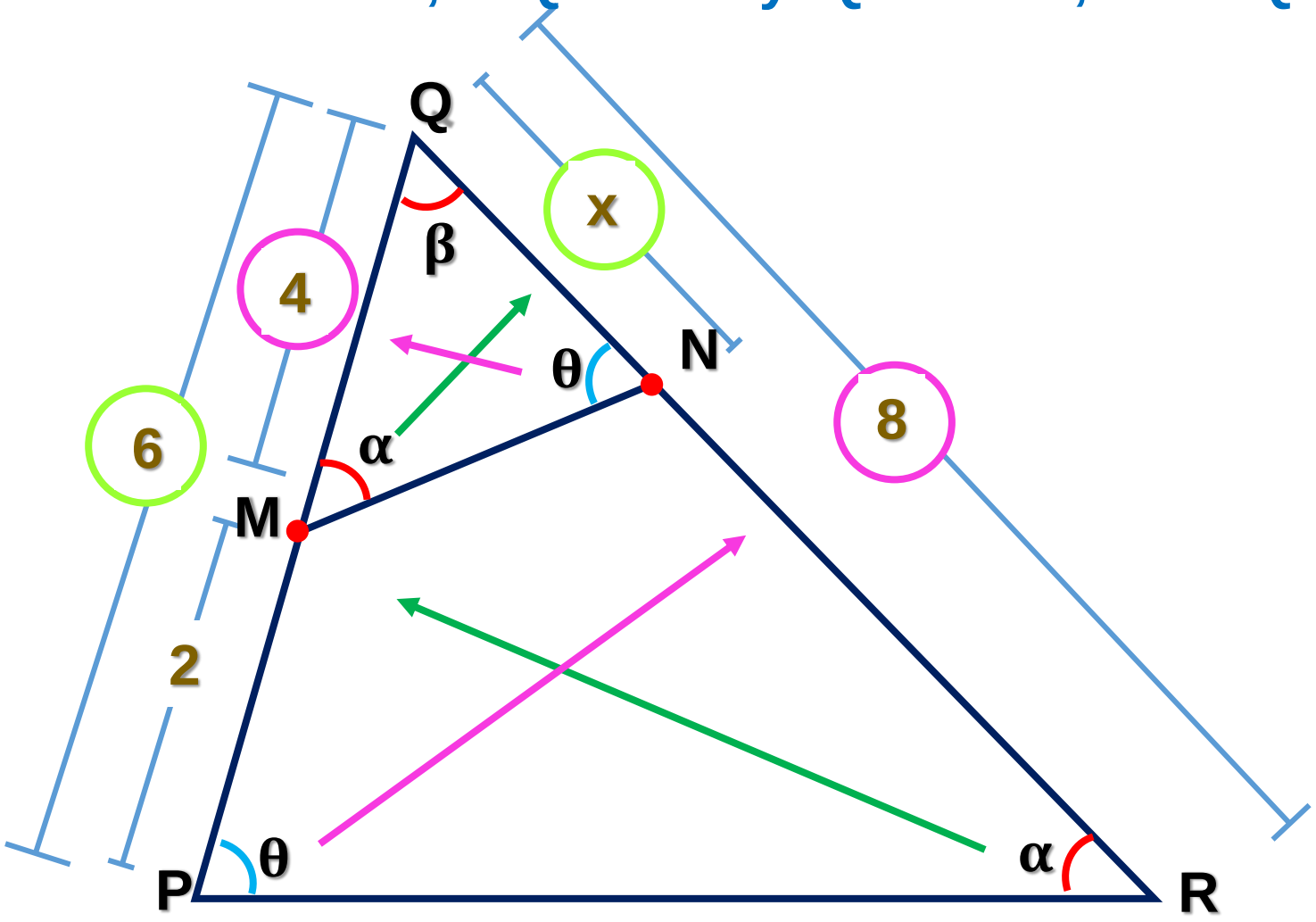
$4^2 = x^2 + (\sqrt{7})^2$

$16 = x^2 + 7$

$9 = x^2$

$x = 3$ u

4. Se tiene un triángulo PQR, donde M ∈ $\overline{PQ}$, N ∈ $\overline{QR}$ y m<QMN = m<PRQ. Si PM = 2 m, MQ = 4 m y QR = 8 m; halle QN.



RESOLUCIÓN

- Piden: x

$$\Delta MQN \sim \Delta RQP$$

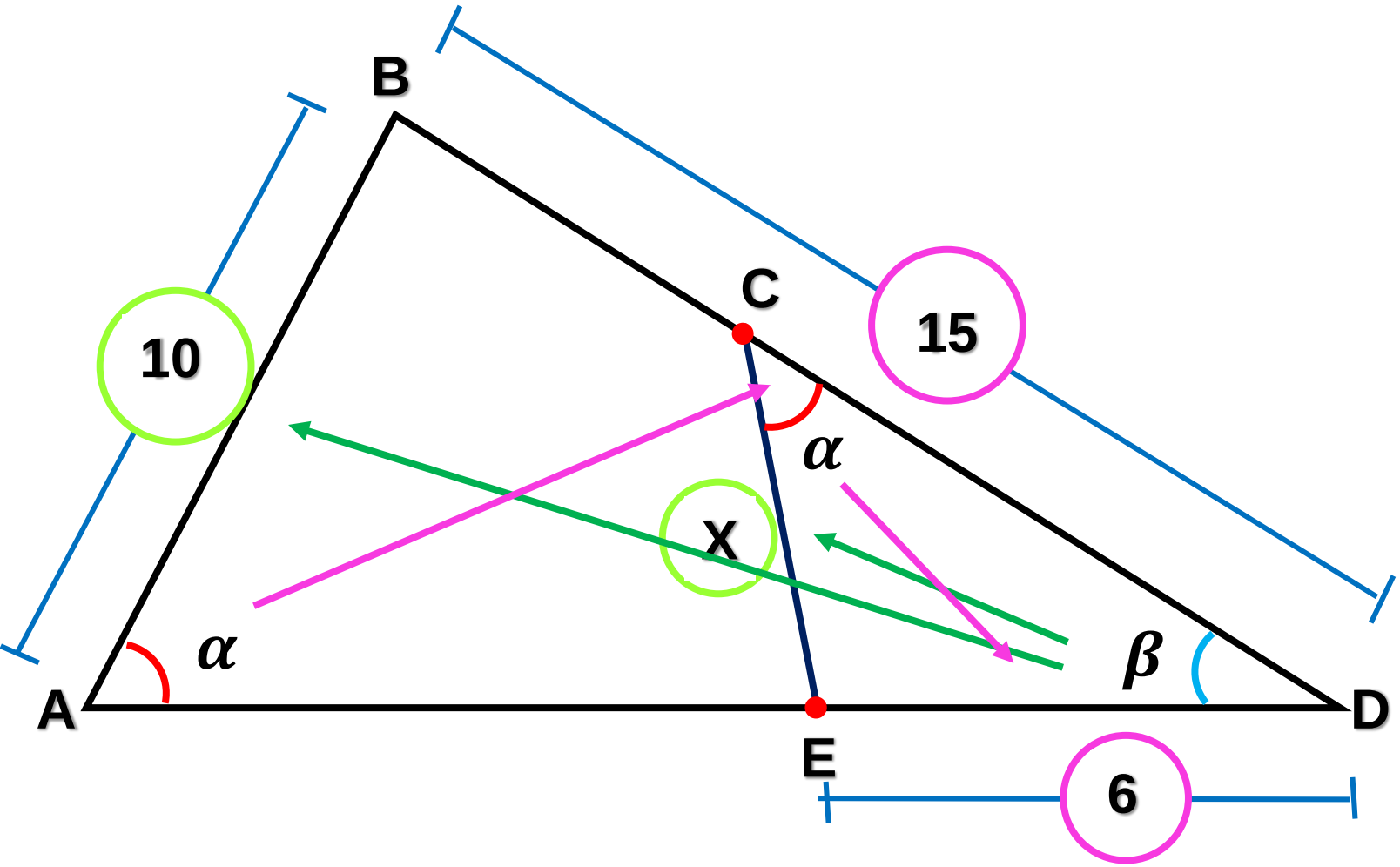
$$\frac{x}{6} = \frac{4}{8}$$

$$(8).(x) = (6).(4)$$

$$8x = 24$$

$$x = 3\ u$$

5. 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

$\Delta CED \sim \Delta ABD$

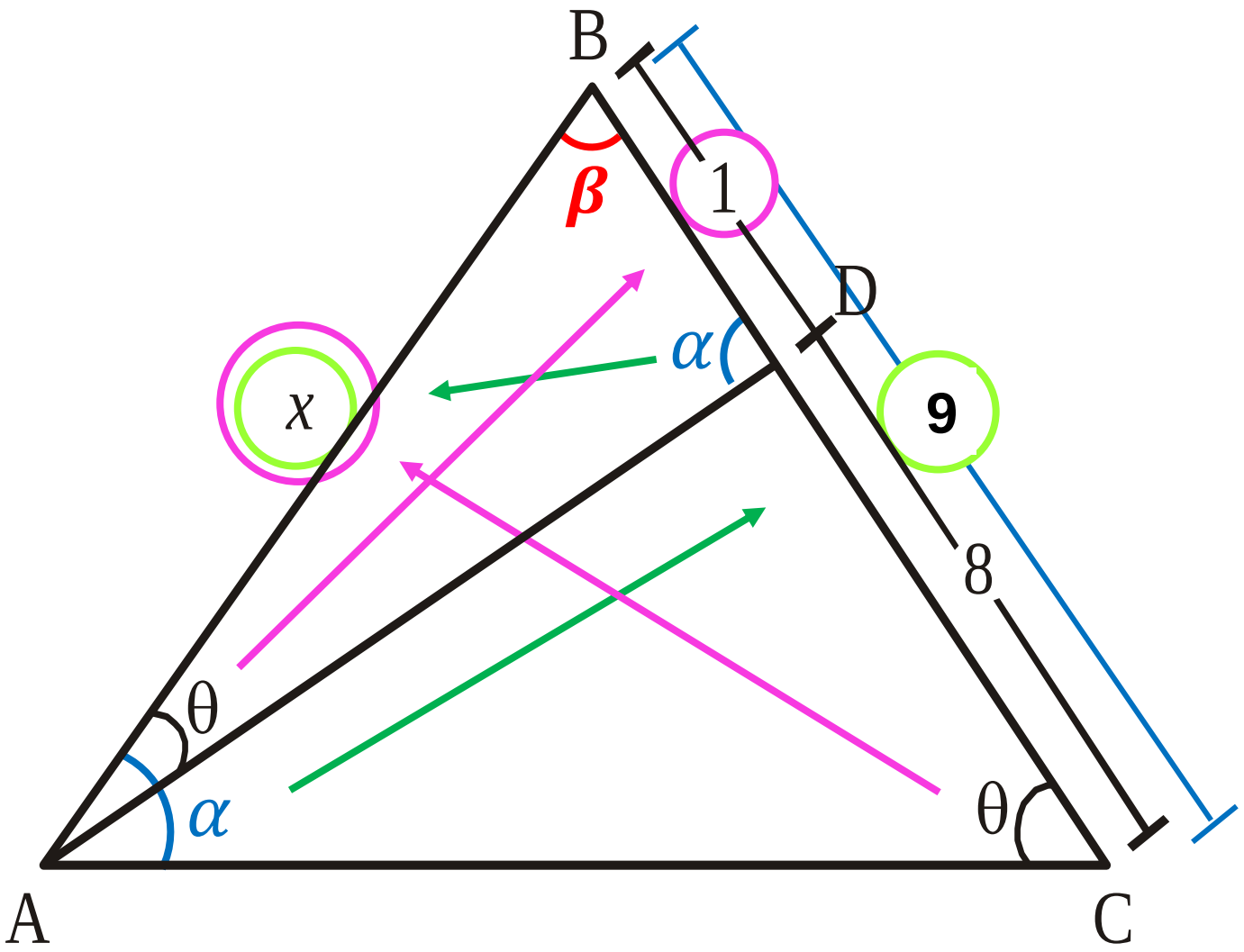
$$\frac{x}{10} = \frac{6}{15}$$

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

$$15x = 60$$

$$x = 4\ u$$

6. Del gráfico, halle el valor de *x*.



RESOLUCIÓN

- **Piden: x**

$$\Delta ABD \sim \Delta CBA$$

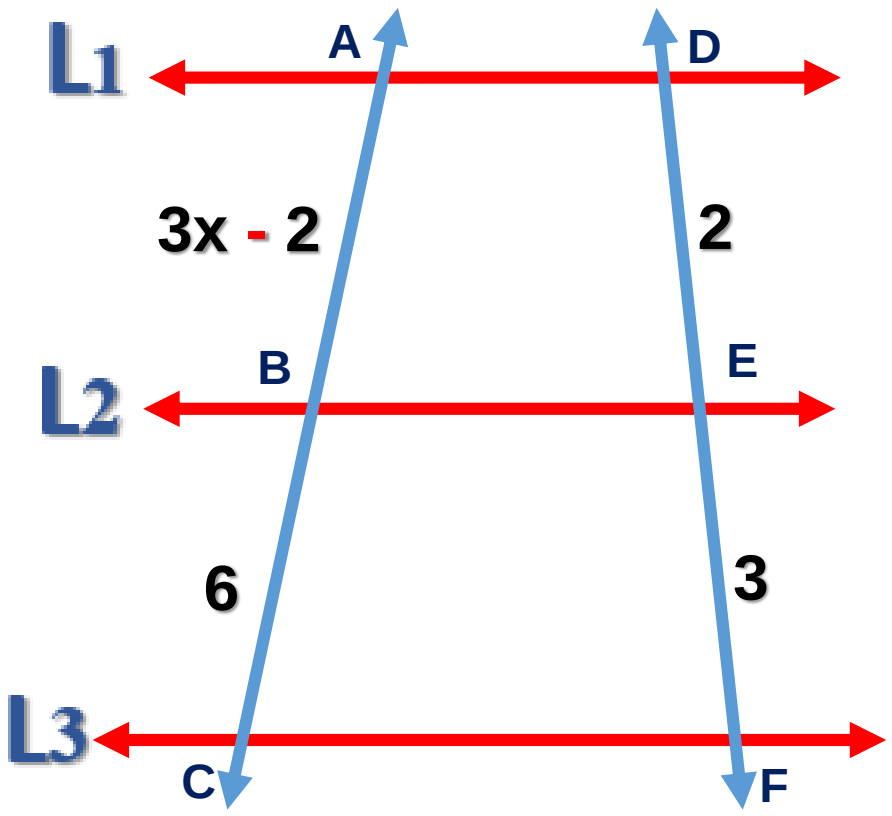
$$\frac{x}{9} = \frac{1}{x}$$

$$x^2 = (1).(9)$$

$$x^2 = 9$$

$$x = 3\ u$$

7. Si $\overleftrightarrow{L_1} \parallel \overleftrightarrow{L_2} \parallel \overleftrightarrow{L_3}$, AB = 3x – 2, BC = 6, DE = 2, EF = 3. Halle el valor de x.



RESOLUCIÓN

Piden: x

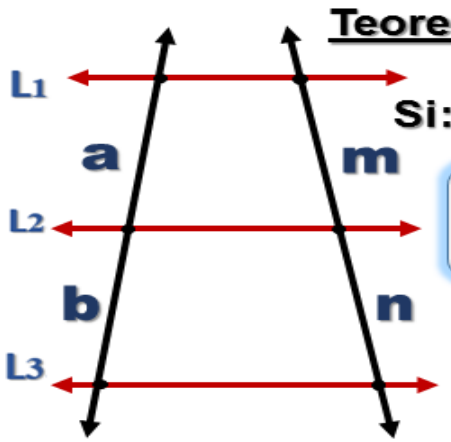
$$\frac{3x-2}{6} = \frac{2}{3}$$

$$9x - 6 = 12$$

$$9x = 18$$

$$\boxed{x = 2\ u}$$

Teorema de Tales



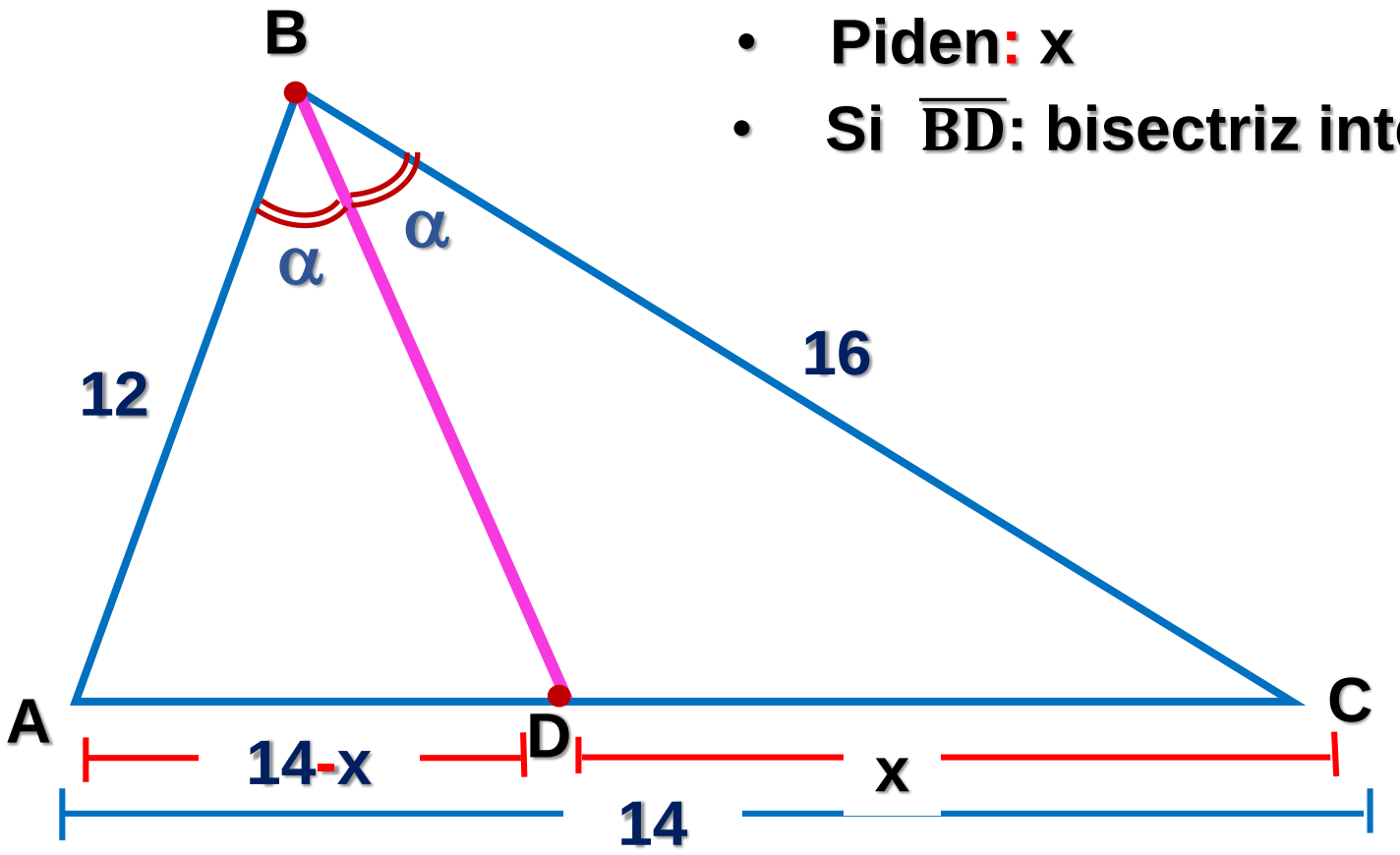
Si: $\overleftrightarrow{L_1} \parallel \overleftrightarrow{L_2} \parallel \overleftrightarrow{L_3}$

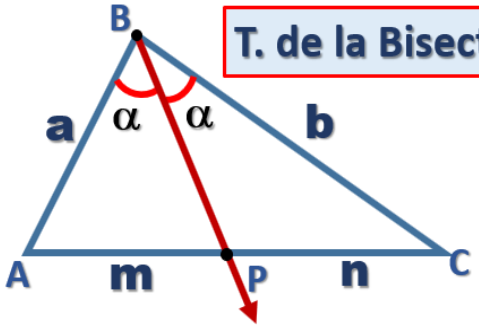
$$\frac{a}{b} = \frac{m}{n}$$

8. En un triángulo ABC, se traza la bisectriz interior $\overline{BD}$. Si AB = 12m, BC = 16, AC = 14; halle el valor de DC.

RESOLUCIÓN

- Piden: x
- Si $\overline{BD}$: bisectriz interior





3
4

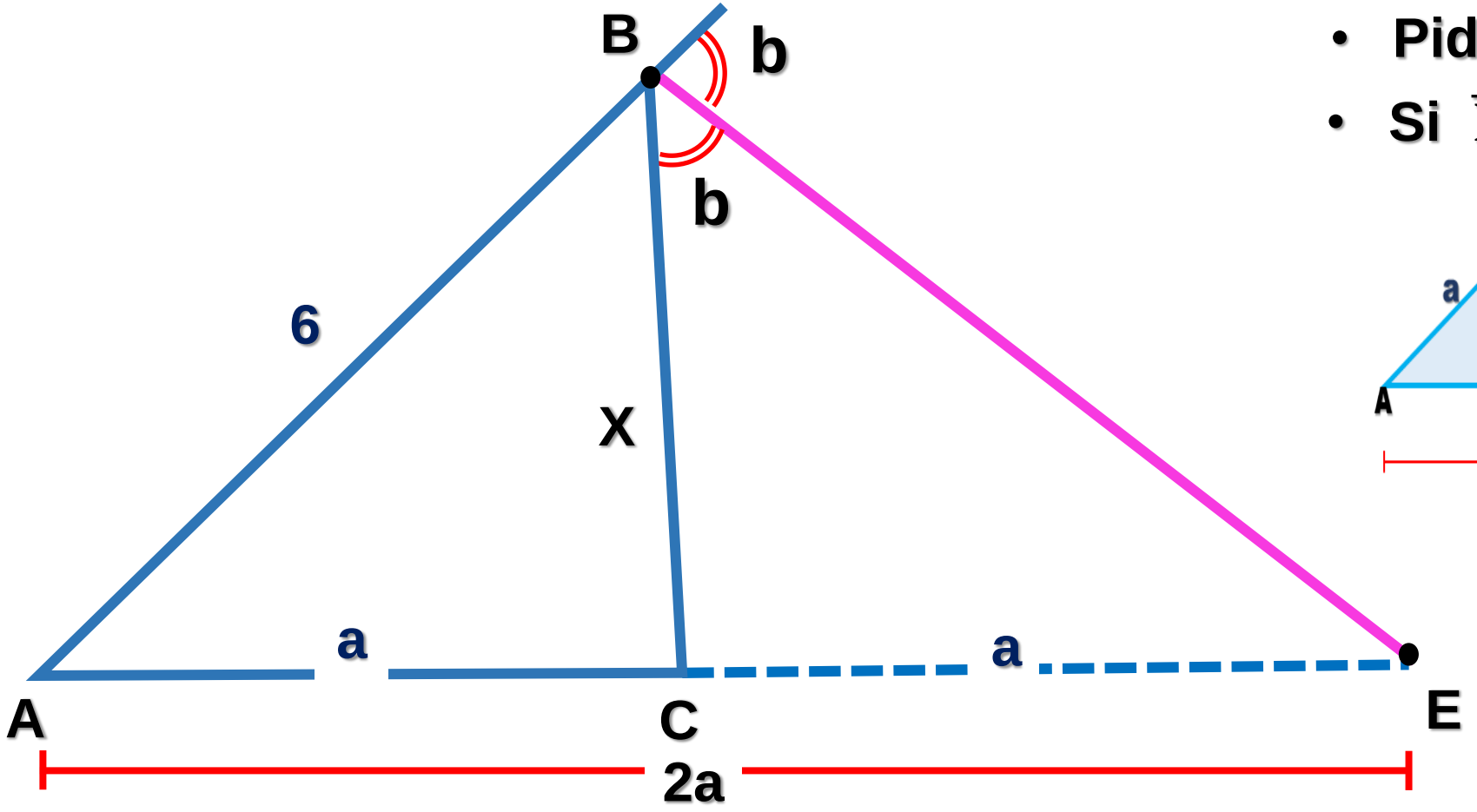
$$\frac{12}{16} = \frac{14 - x}{x}$$

$$3x = 56 - 4x$$

$$7x = 56$$

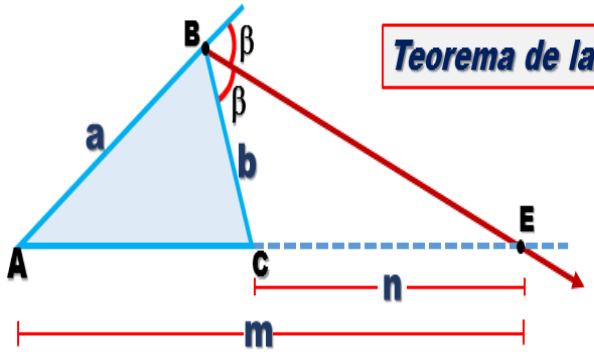
x = 8 u

9. En el triángulo ABC se traza la bisectriz exterior $\overline{BE}$, donde E ∈ a la prolongación de $\overline{AC}$. Si AB= 6m y CE = AC, halle BC.



RESOLUCIÓN

- Piden: x
- Si $\overline{BE}$: bisectriz exterior



Teorema de la Bisectriz Exterior

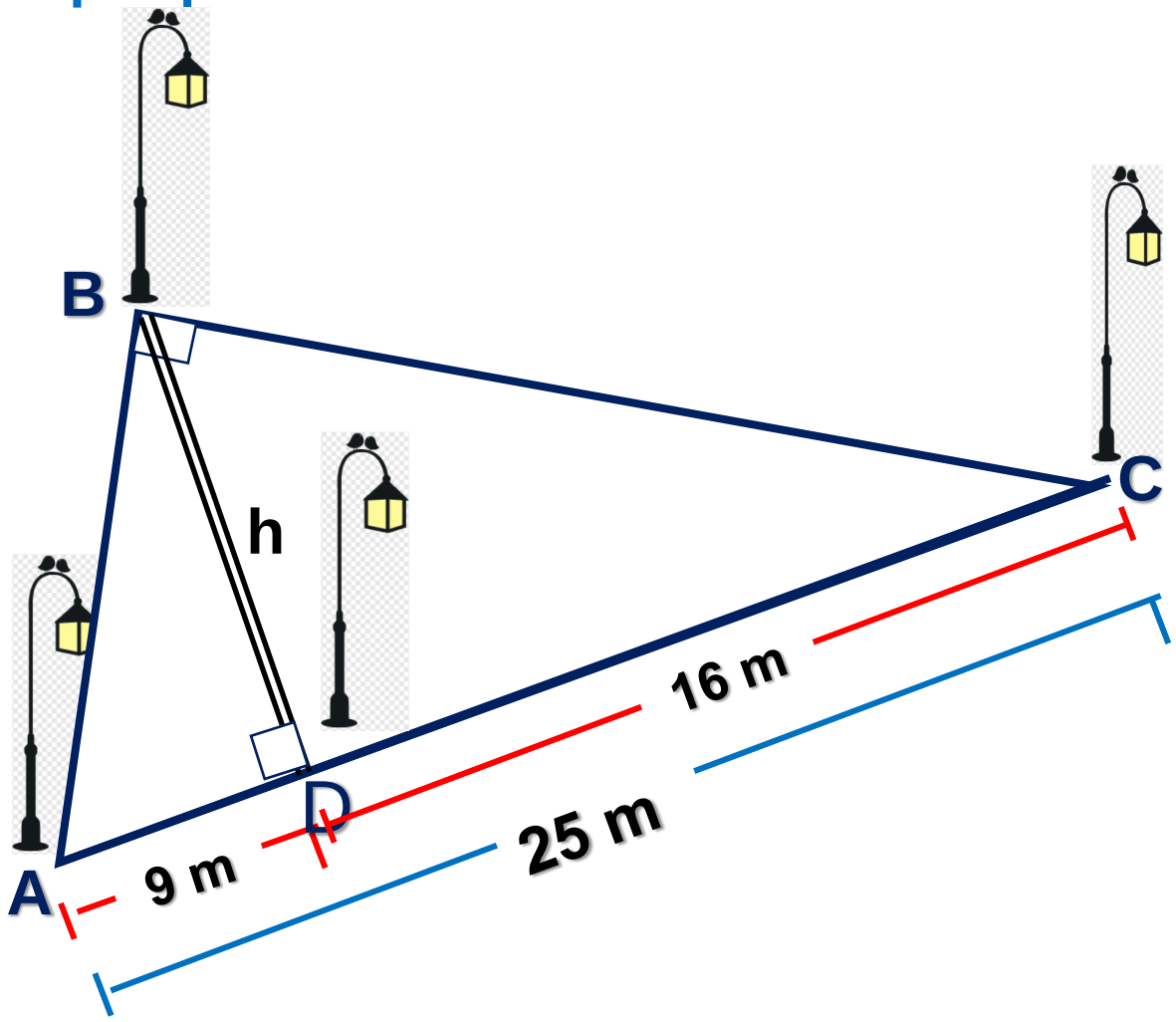
$$\frac{a}{b} = \frac{m}{n}$$

$$\frac{6}{x} = \frac{2\,\cancel{a}}{\cancel{a}}$$

$$2x = 6$$

$$\boxed{x = 3u}$$

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 BD que cruza el parque.



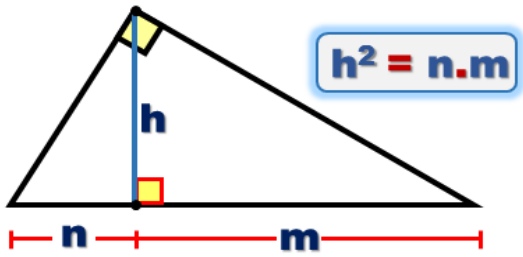
RESOLUCIÓN

- **Piden: h**
- Del gráfico

$AC = AD + DC$

$25 = 9 + DC$

$DC = 16m$



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

$h^2 = 144$

$x = 12\ m$