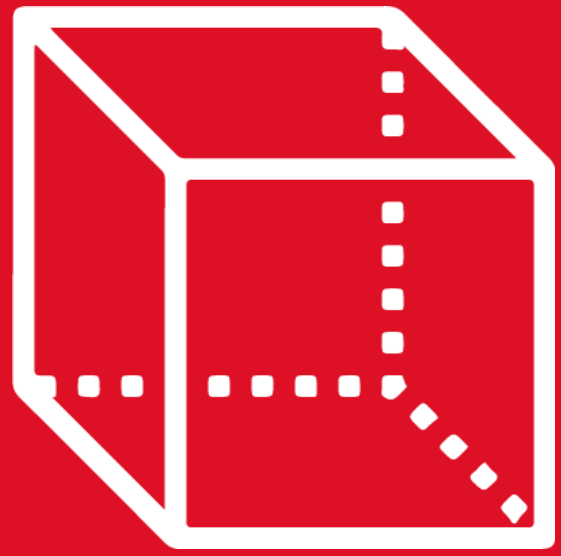
GEOMETRÍA

Capítulo 17



2 st

Triángulos Semejantes

SACO OLIVEROS

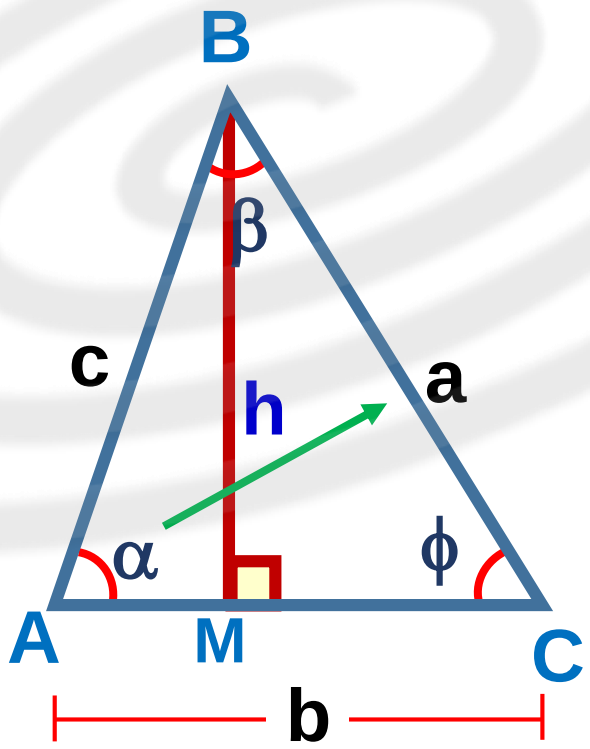
TRIÁNGULOS SEMEJANTES

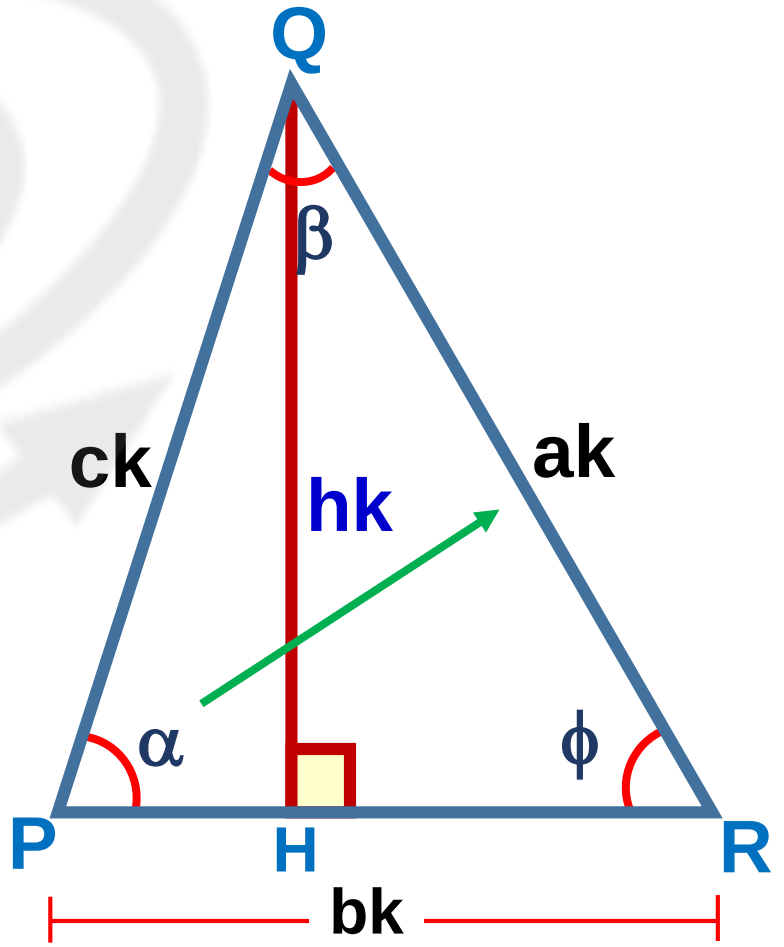
Dos triángulos son semejantes si tienen tres pares de ángulos congruentes y las longitudes de sus lados homólogos respectivamente proporcionales.

- **Si:** $\Delta ABC \sim \Delta PQR$

$$\frac{QR}{BC} = \frac{PR}{AC} = \frac{PQ}{AB} = k$$

k: razón de la semejanza

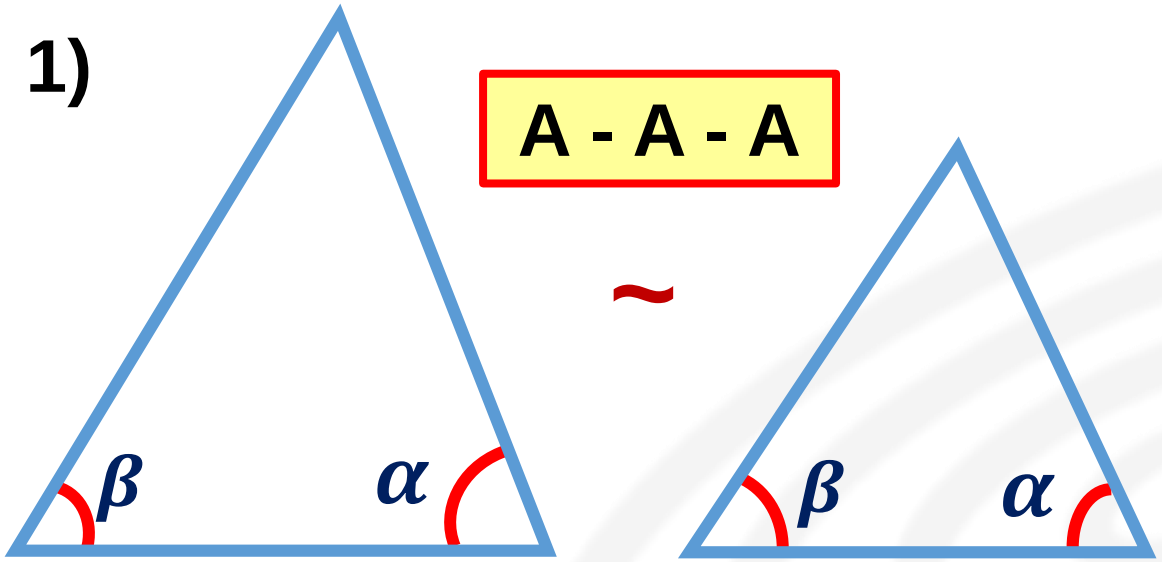




CASOS DE SEMEJANZA

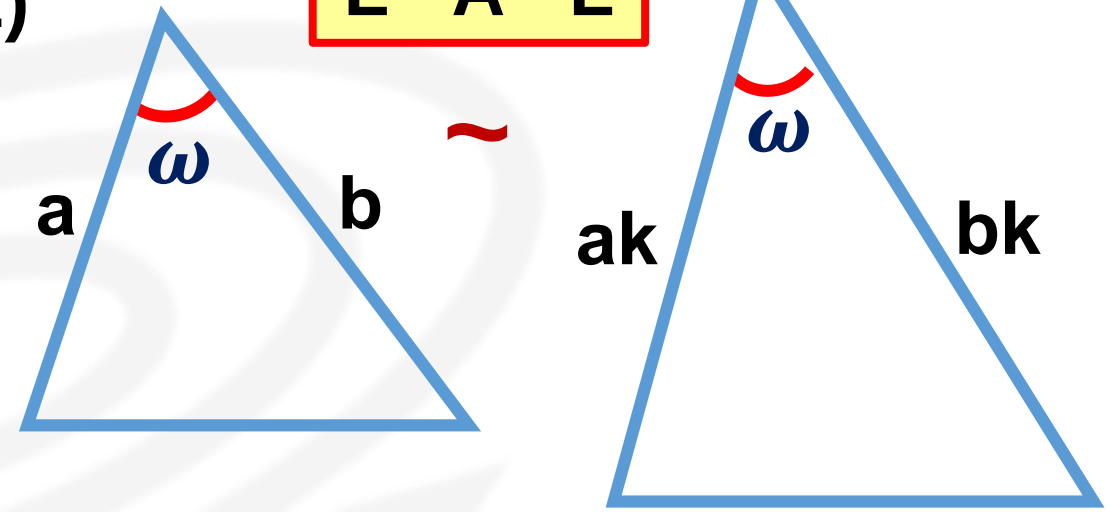
1)

A - A - A



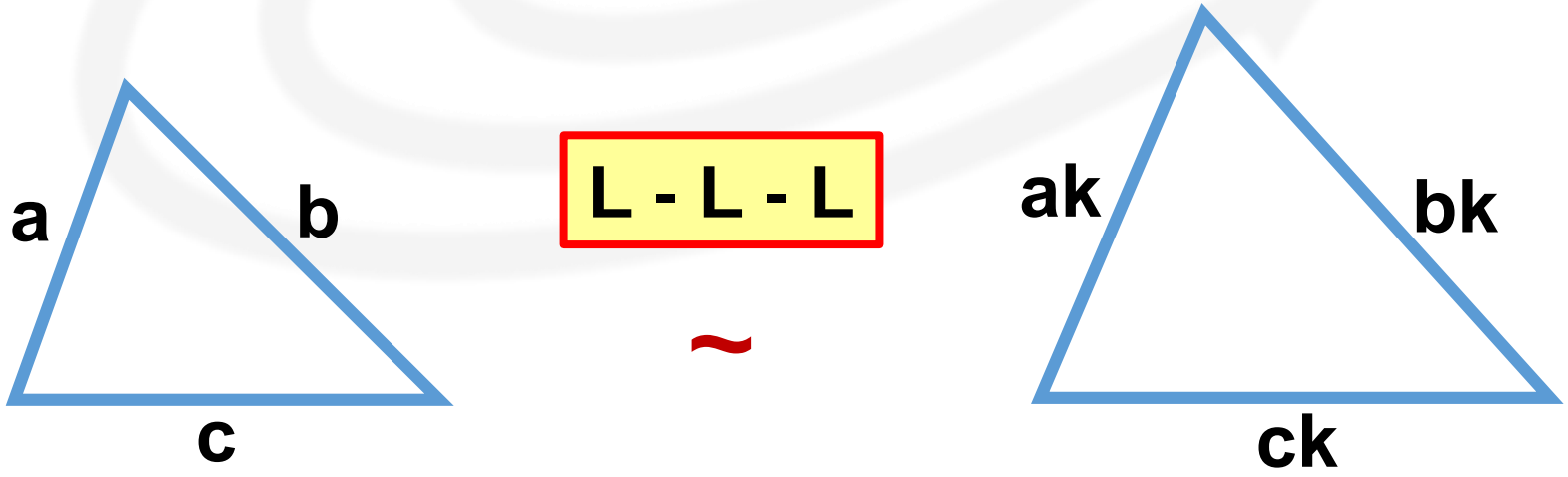
2)

L - A - L

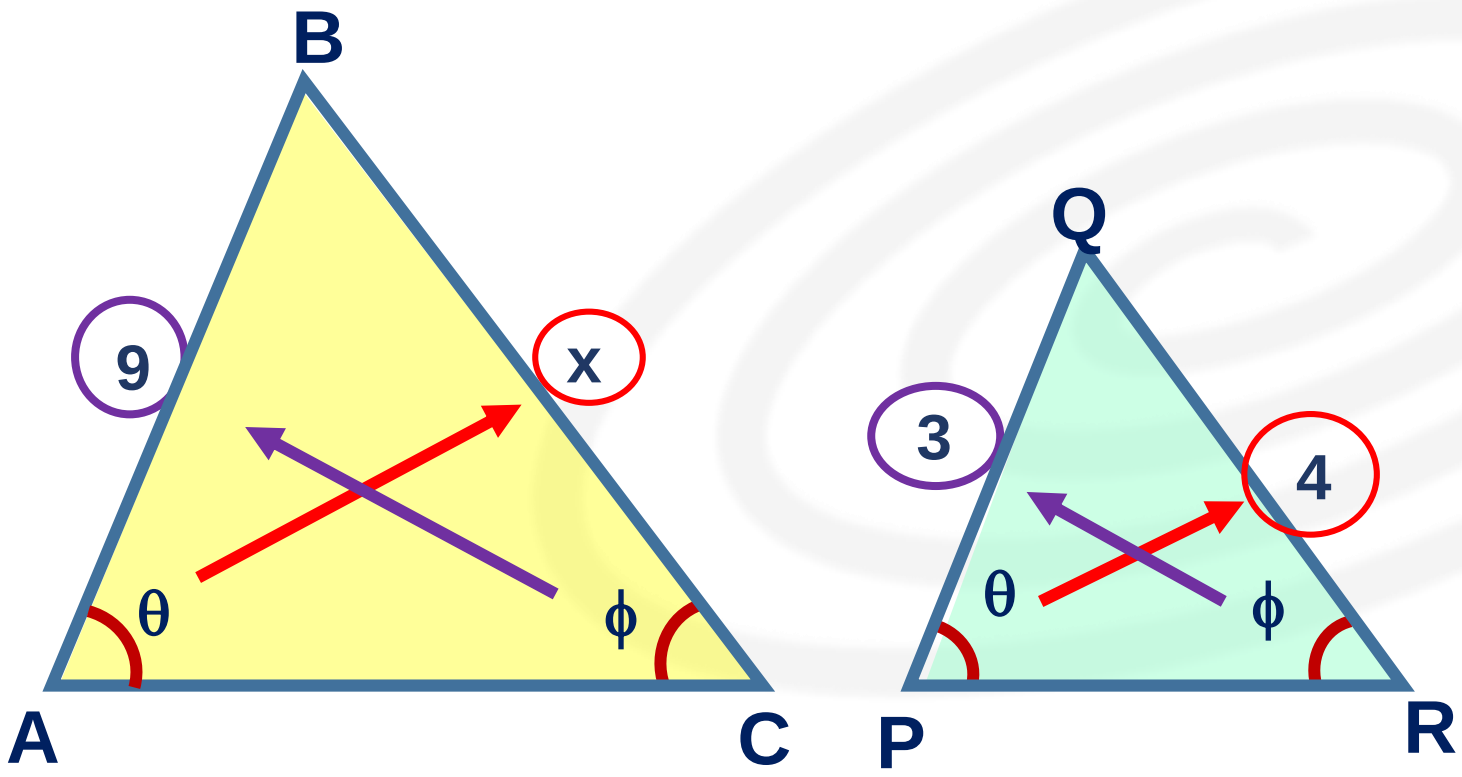


3)

L - L - L



1. En al figura; Halle el valor de x.



Piden: x

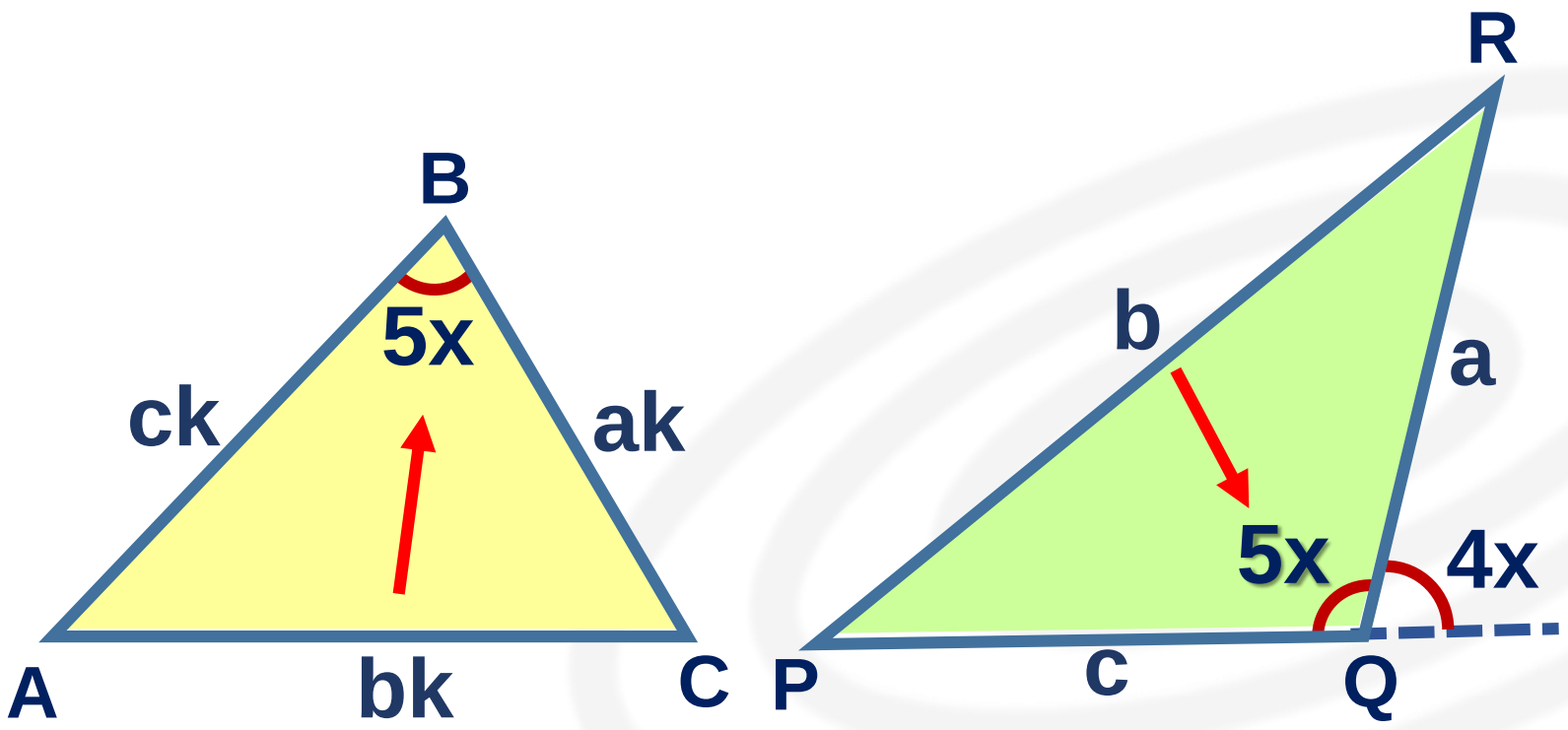
$\Delta ABC \sim \Delta PQR$

$$\frac{x}{4} = \frac{9}{3}$$

$$3x = 36$$

$$x = 12$$

2. En la figura; Halle el valor de x.



Piden: x

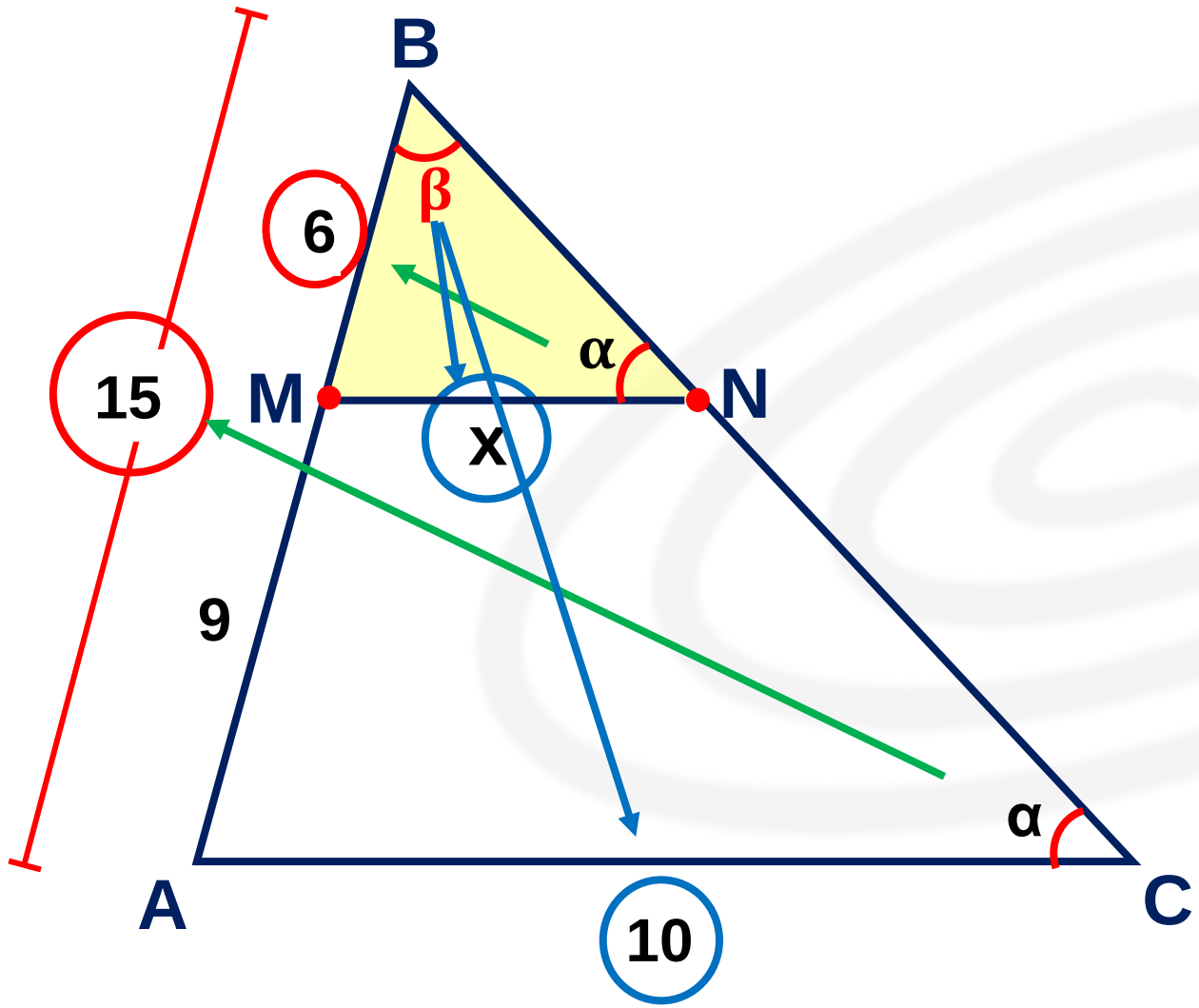
$\Delta ABC \sim \Delta PQR$

$5x + 4x = 180°$

$9x = 180°$

$x = 20°$

3. En al figura; Si $\overline{MN} \parallel \overline{AC}$, halle el valor de x.



- **Piden: x**

$\Delta MBN \sim \Delta ABC$

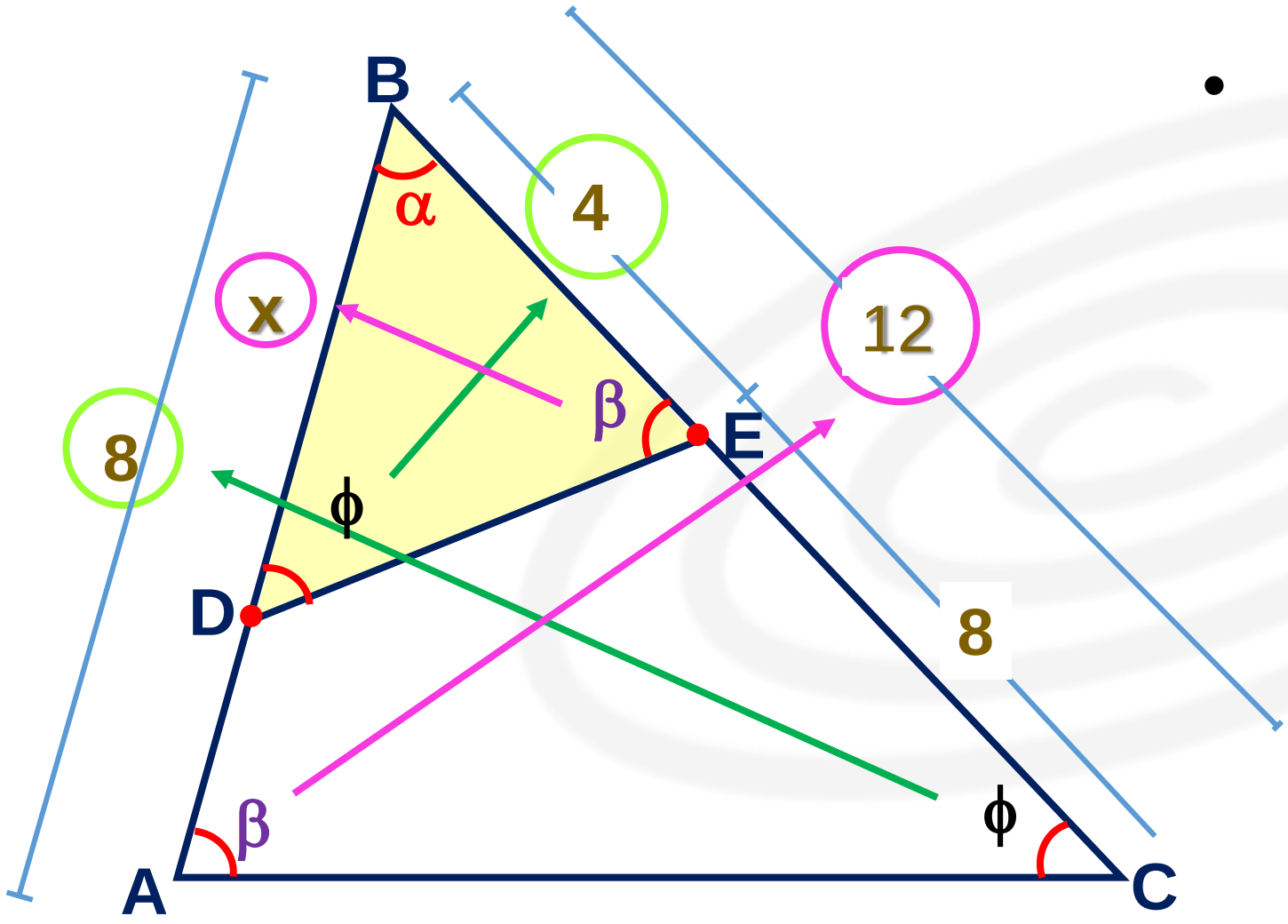
$$\frac{6}{15} = \frac{x}{10}$$

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

$$15x = 60$$

$$x = 4$$

4. En la figura calcule BD.



- Piden: x

$\Delta DBE \sim \Delta CBA$

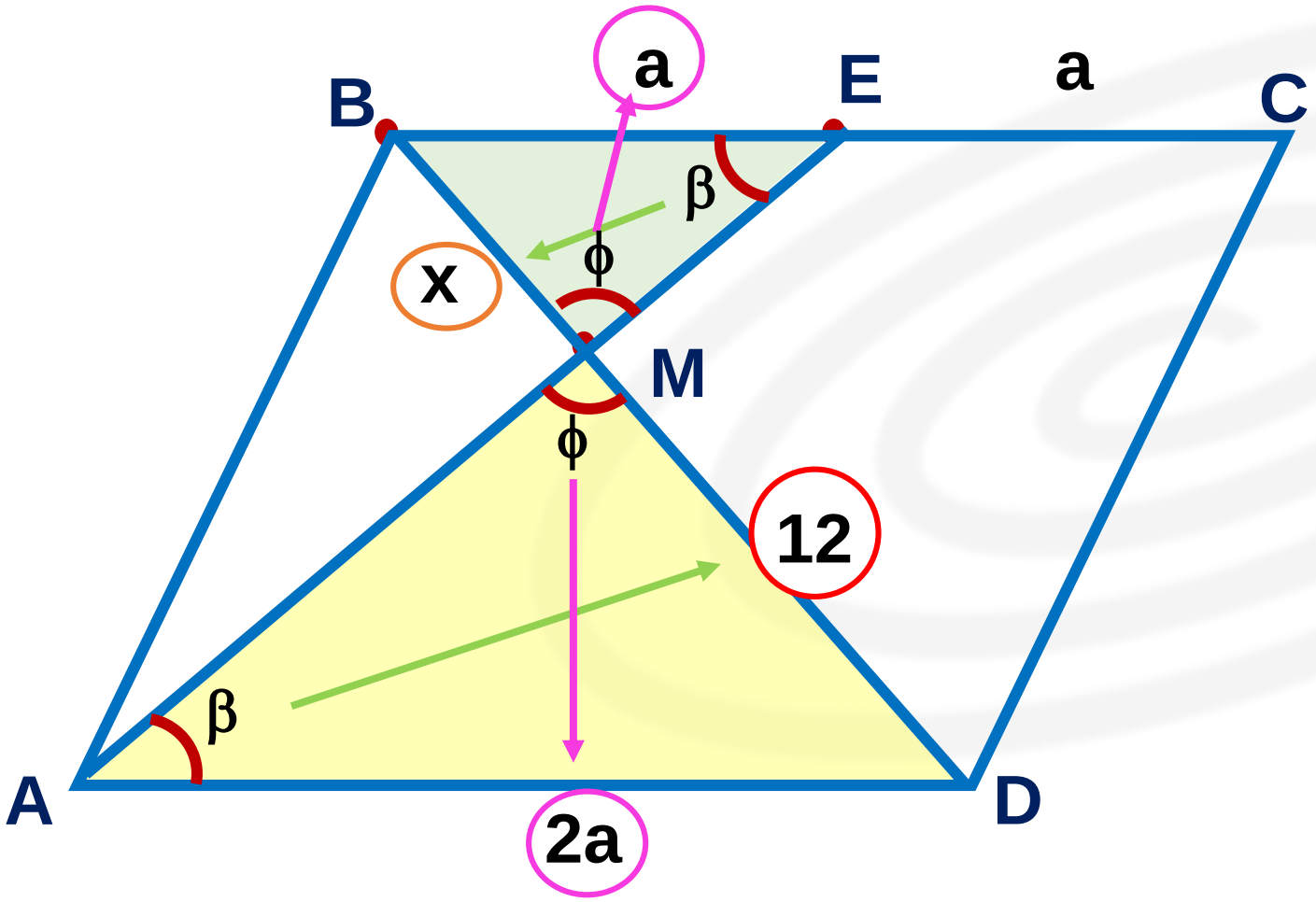
$$\frac{4}{8} = \frac{x}{12}$$

$$(8)(x) = (4)(12)$$

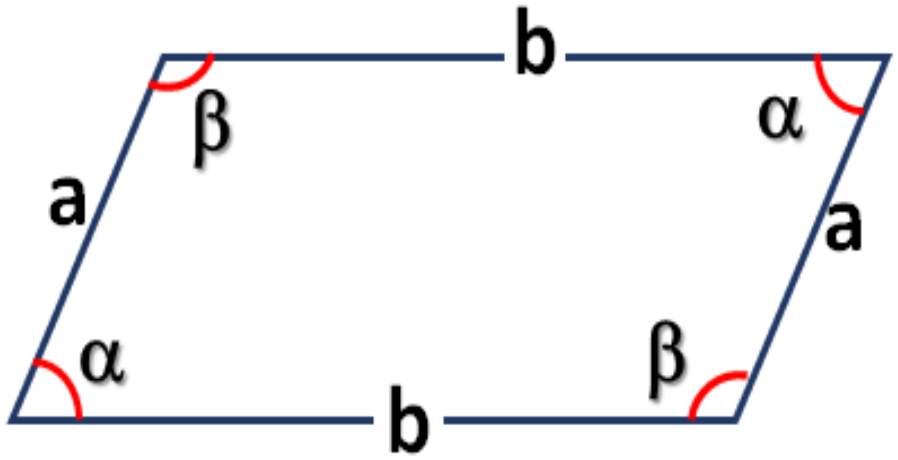
$$8x = 48$$

$$x = 6$$

5. En la figura se muestra un romboide ABCD, tal que BE = EC y MD = 12 cm. Calcule BM.



Piden: x

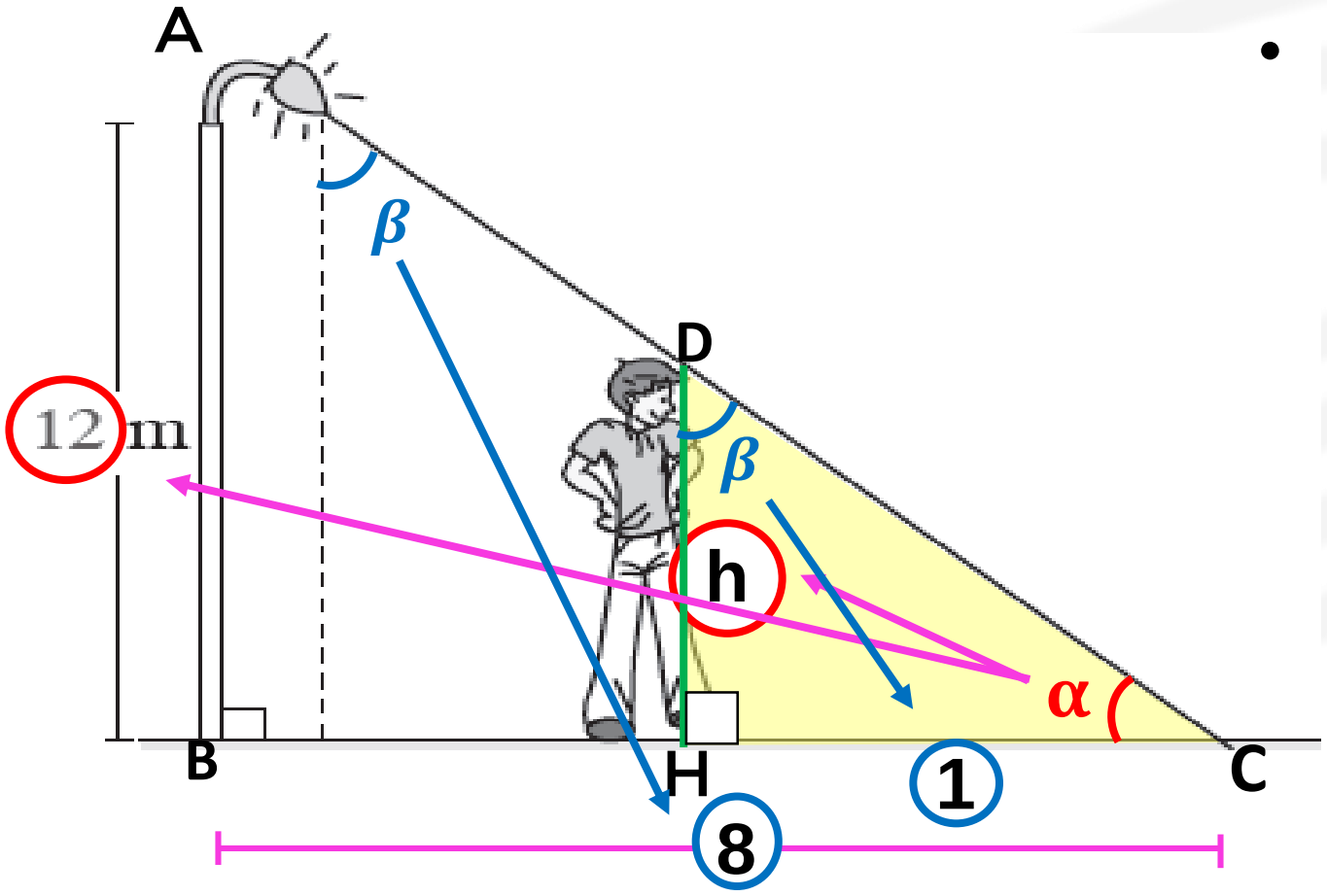


$\Delta AMD \sim \Delta EMB$

$$\frac{x}{12} = \frac{a}{2a} \quad \begin{matrix}1\\2\end{matrix}$$

$$x = 6$$

6. Un poste de 12 m de altura, proyecta una sombra de 8m de longitud. Determine la longitud de la altura de una persona que proyecta una sombra de 1 m de longitud.



- **Piden: h**

$\Delta ABC \sim \Delta DHC$

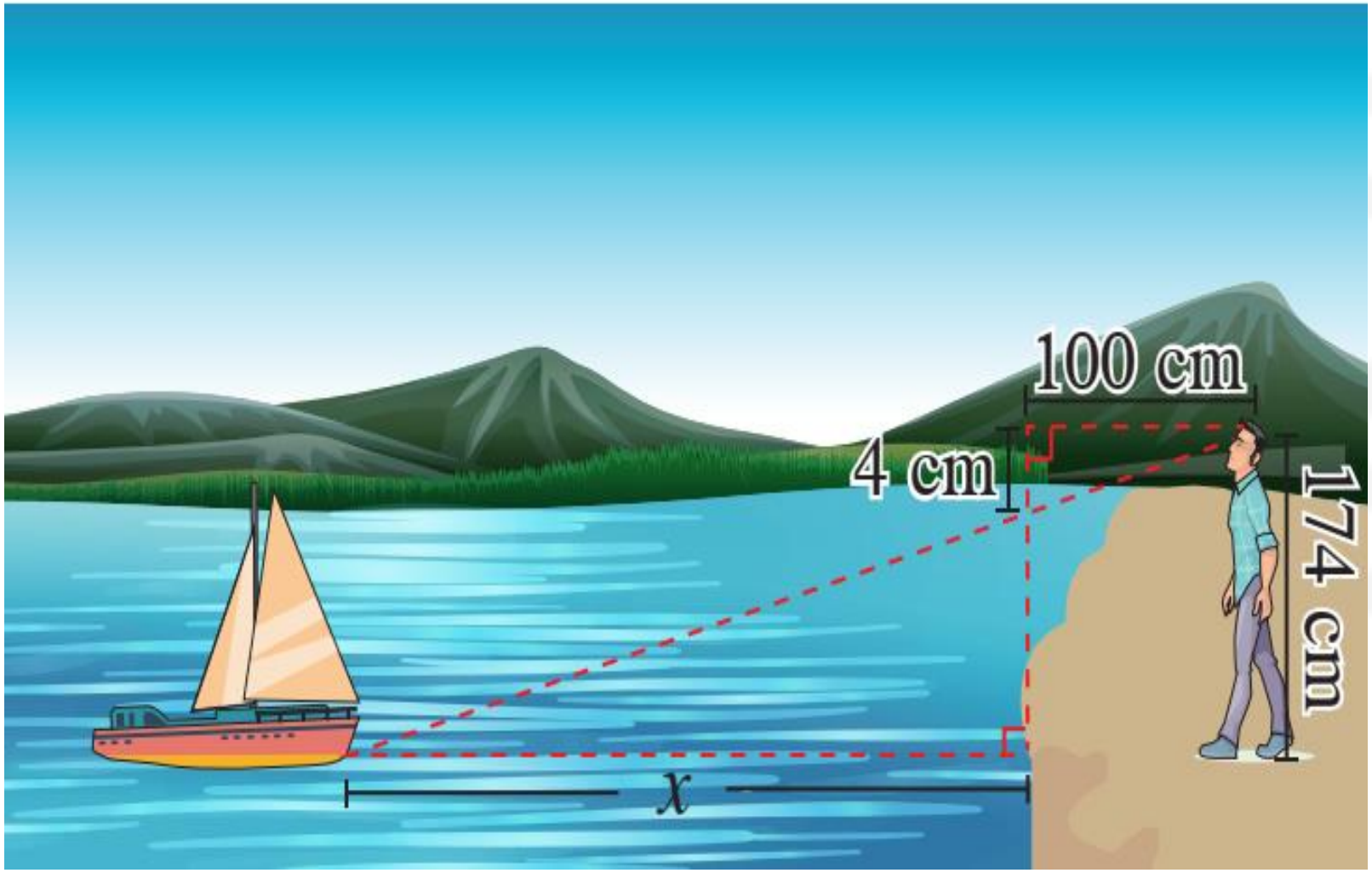
$$\frac{12}{h} = \frac{8}{1}$$

$$(12)(1) = (8)(h)$$

$$12 = 8h$$

$$h = 1{,}5 \text{ m}$$

7. En la figura; Halle el valor de x.



Piden: x

$\Delta ABC \sim \Delta EDB$

$$\frac{x}{100} = \frac{10}{4}$$

$$(4)(x) = (100)(10)$$

$$4x = 1000$$

$$x = 250$$