

# GEOMETRÍA

Repaso

3st

Asesoría

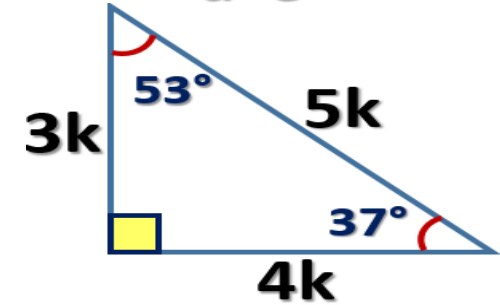
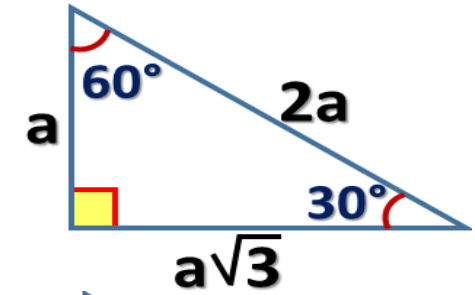
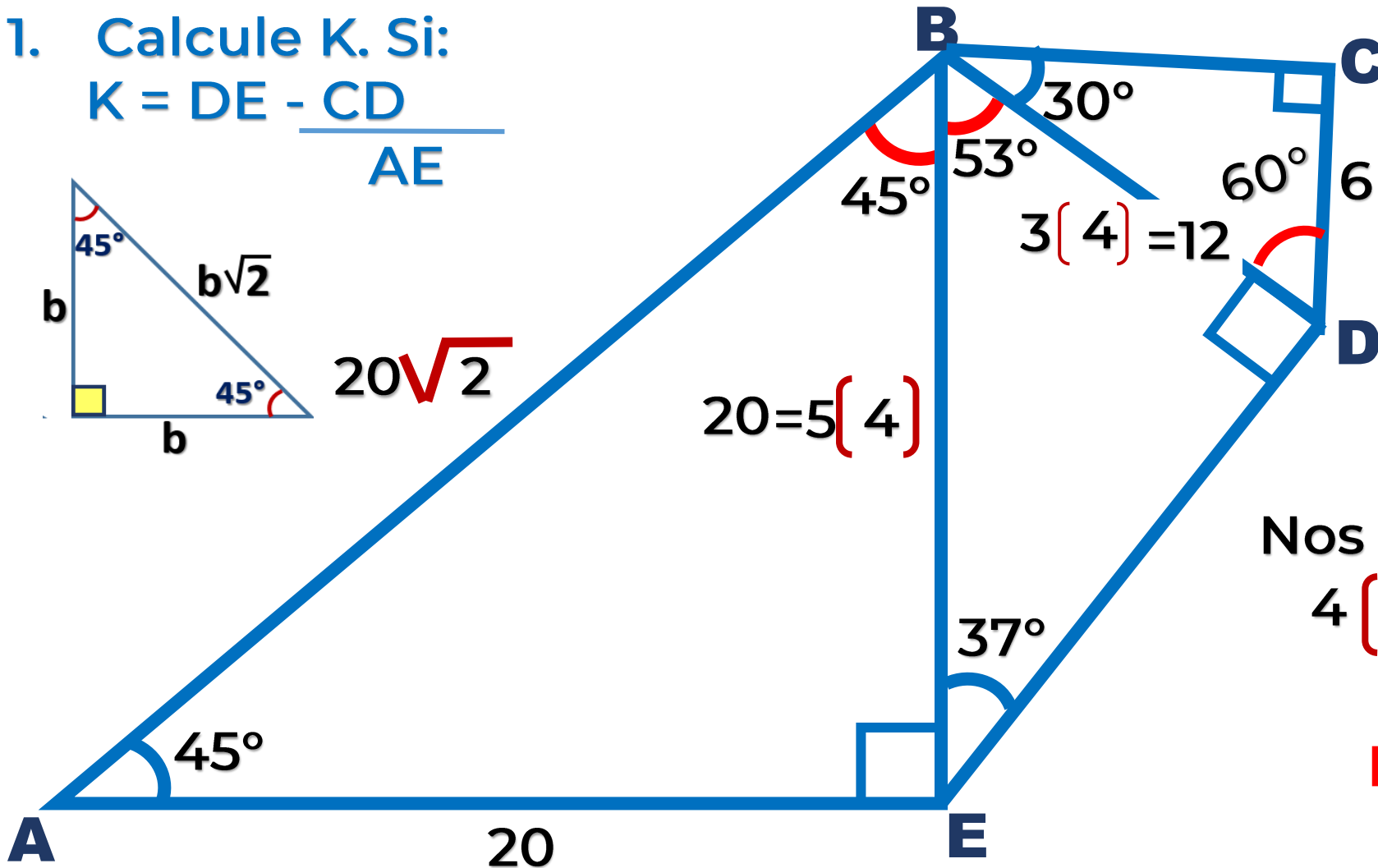
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 **SACO OLIVEROS**

A right-angled triangle with a 90-degree angle at the bottom-left vertex, indicated by a yellow square. The two base angles are both 45 degrees, marked with red arcs. The vertical leg is labeled  $b$ , the horizontal leg is labeled  $b$ , and the hypotenuse is labeled  $b\sqrt{2}$ .

$20\sqrt{2}$



# Nos piden

$$4 \left( 4 \right) = 16$$

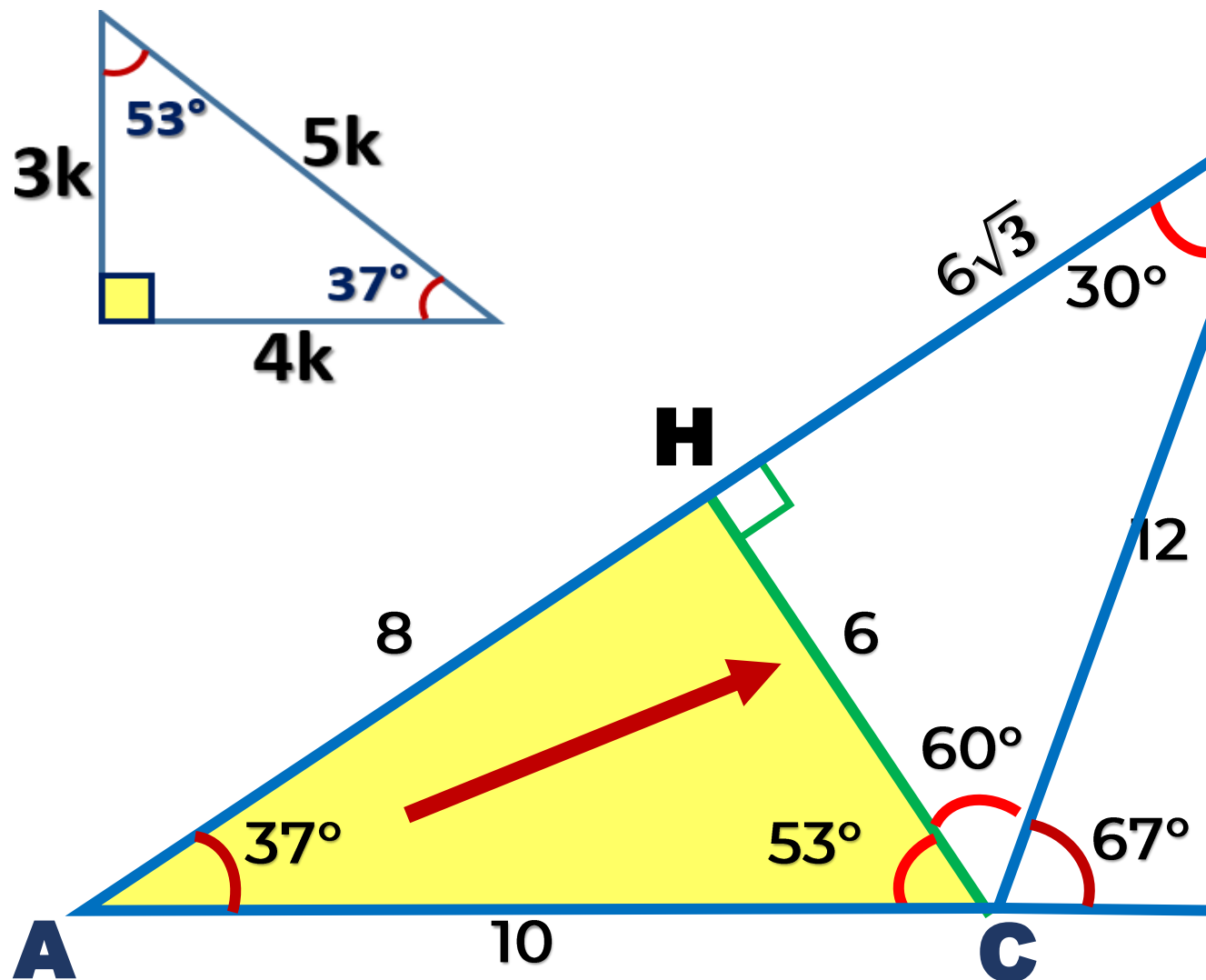
$$K = \frac{DE - CD}{AE}$$

➡  $K = \frac{16 - 6}{20} = \frac{10}{20}$

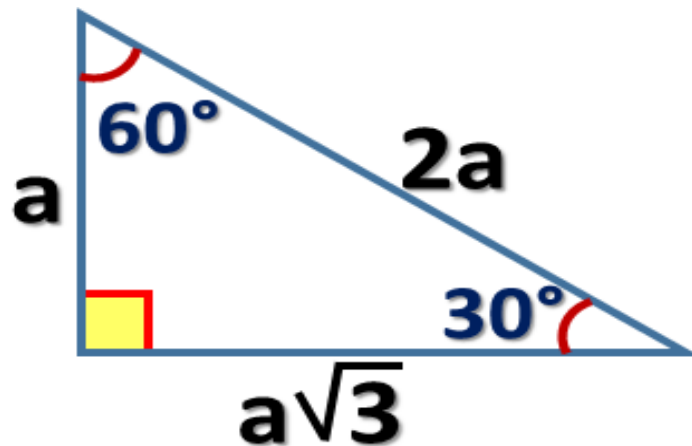


**SACO OLIVEROS**

2. En la figura, calcule BC.



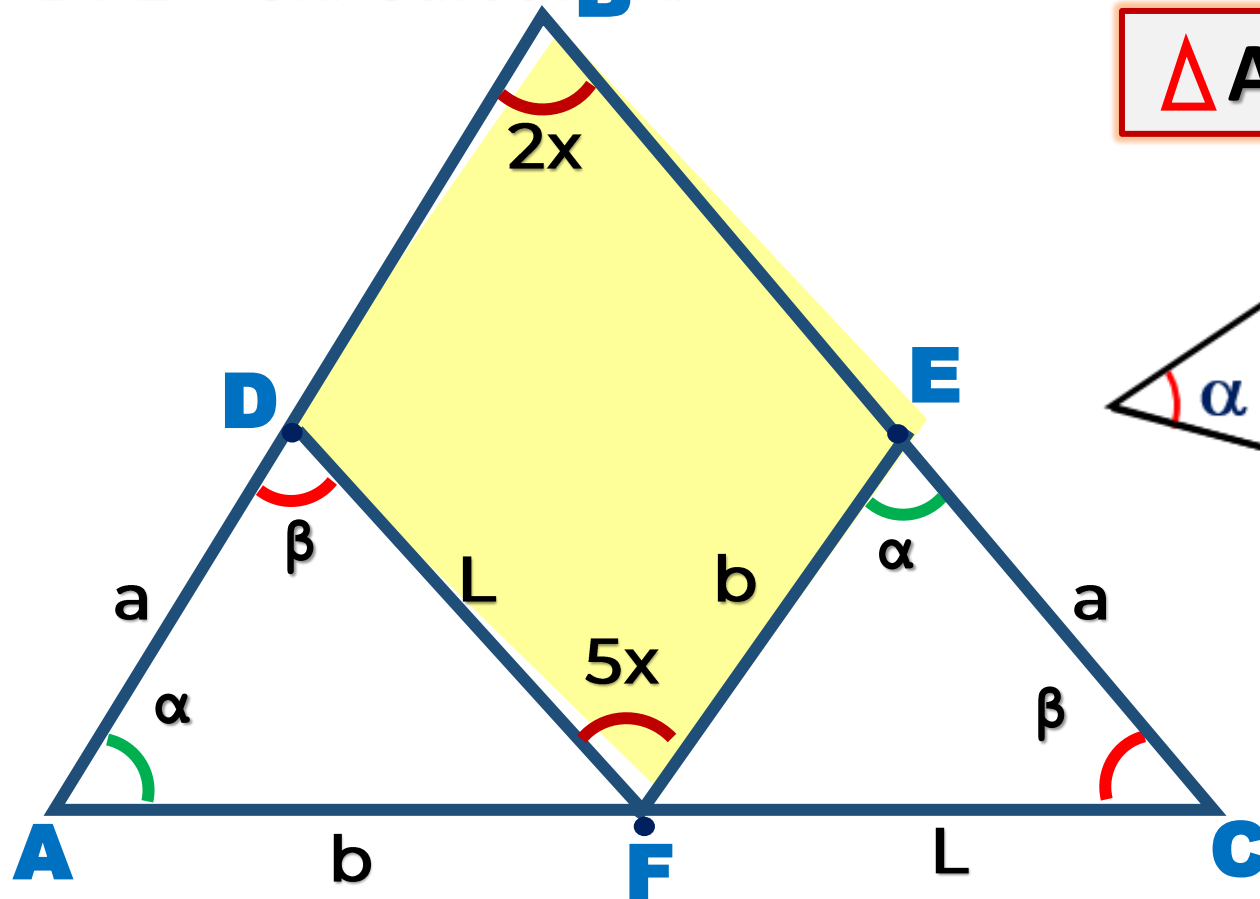
• Trazamos la altura  $\overline{CH}$ .



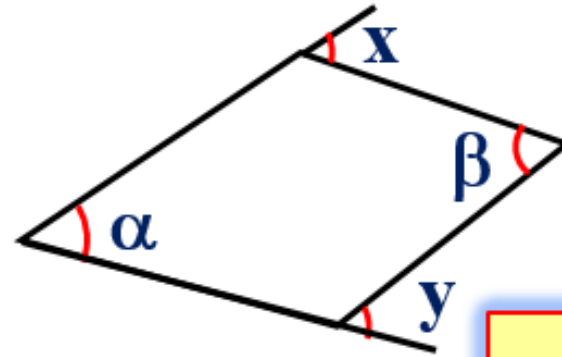
Nos piden

→ **BC = 12**

3. Se tiene un triángulo ABC, se ubican los puntos D, E y F sobre los lados  $\overline{AB}$ ,  $\overline{BC}$  y  $\overline{AC}$ , respectivamente,  $AD = EC$ ,  $AF = FE$ ,  $DF = FC$ ,  $m\angle ABC = 2x$  y  $m\angle DFE = 5x$ . Calcula  $x$ .



$$\triangle ADF \cong \triangle ECF \quad (L-L-L)$$



- $\alpha + \beta = 2x + 5x$
- $\alpha + \beta = 7x$

$$x + y = \alpha + \beta$$

•  $\triangle ABC$ :

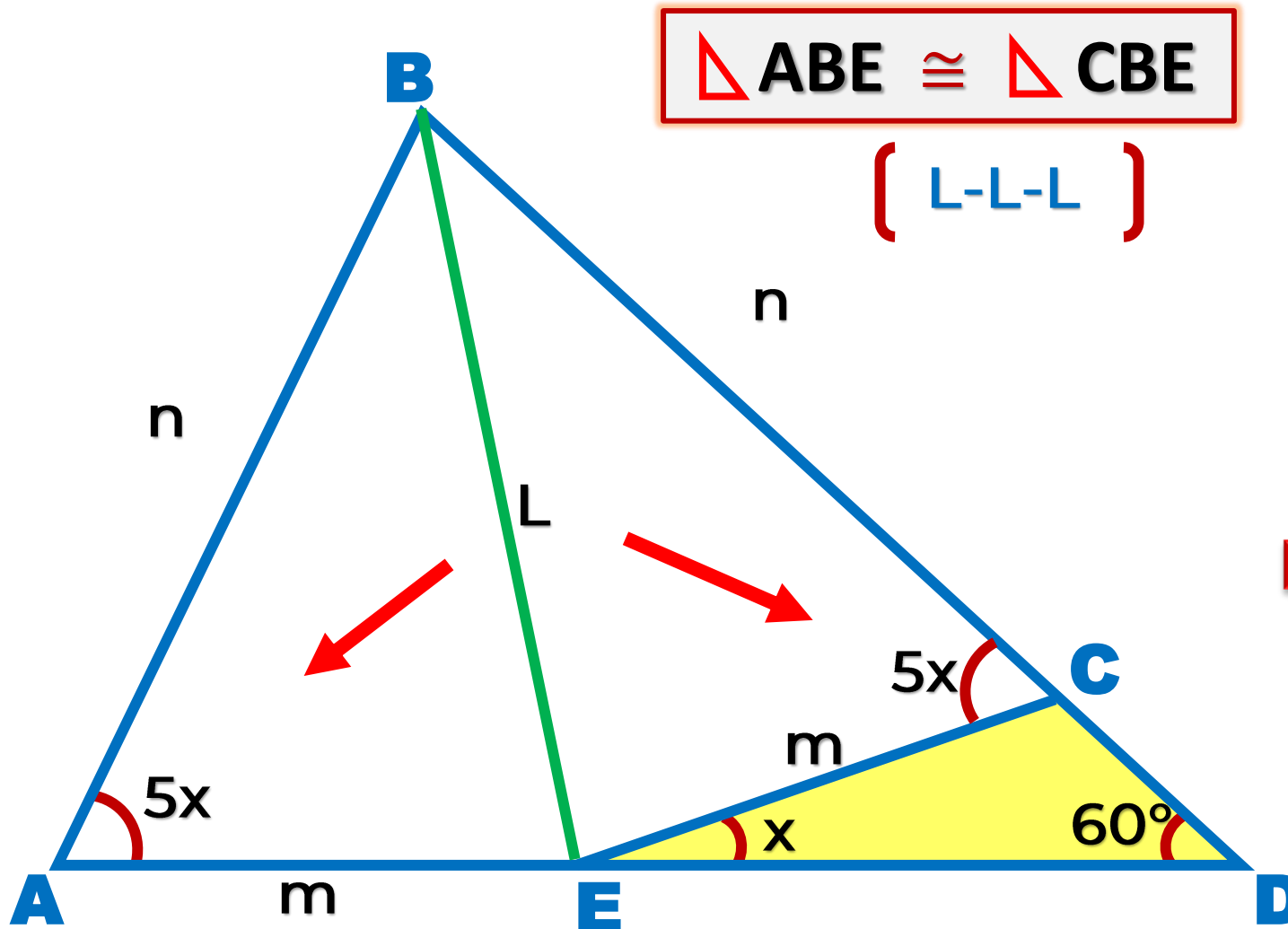
$$\alpha + \beta + 2x = 180^\circ$$

$$\underbrace{\alpha + \beta}_{7x} + 2x = 180^\circ$$

$$9x = 180^\circ$$

$$x = 20^\circ$$

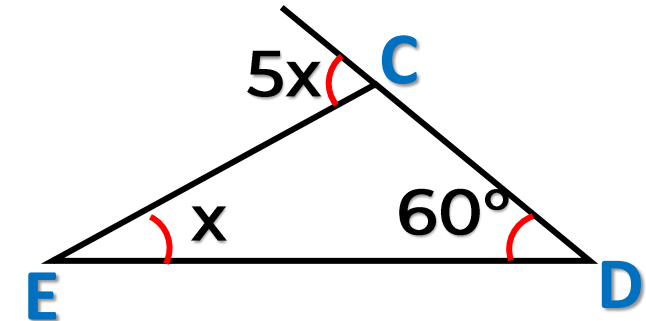
4. En la figura  $AB = BC$  y  $AE = CE$ , calcule  $x$ .



$$\triangle ABE \cong \triangle CBE$$

$$(L-L-L)$$

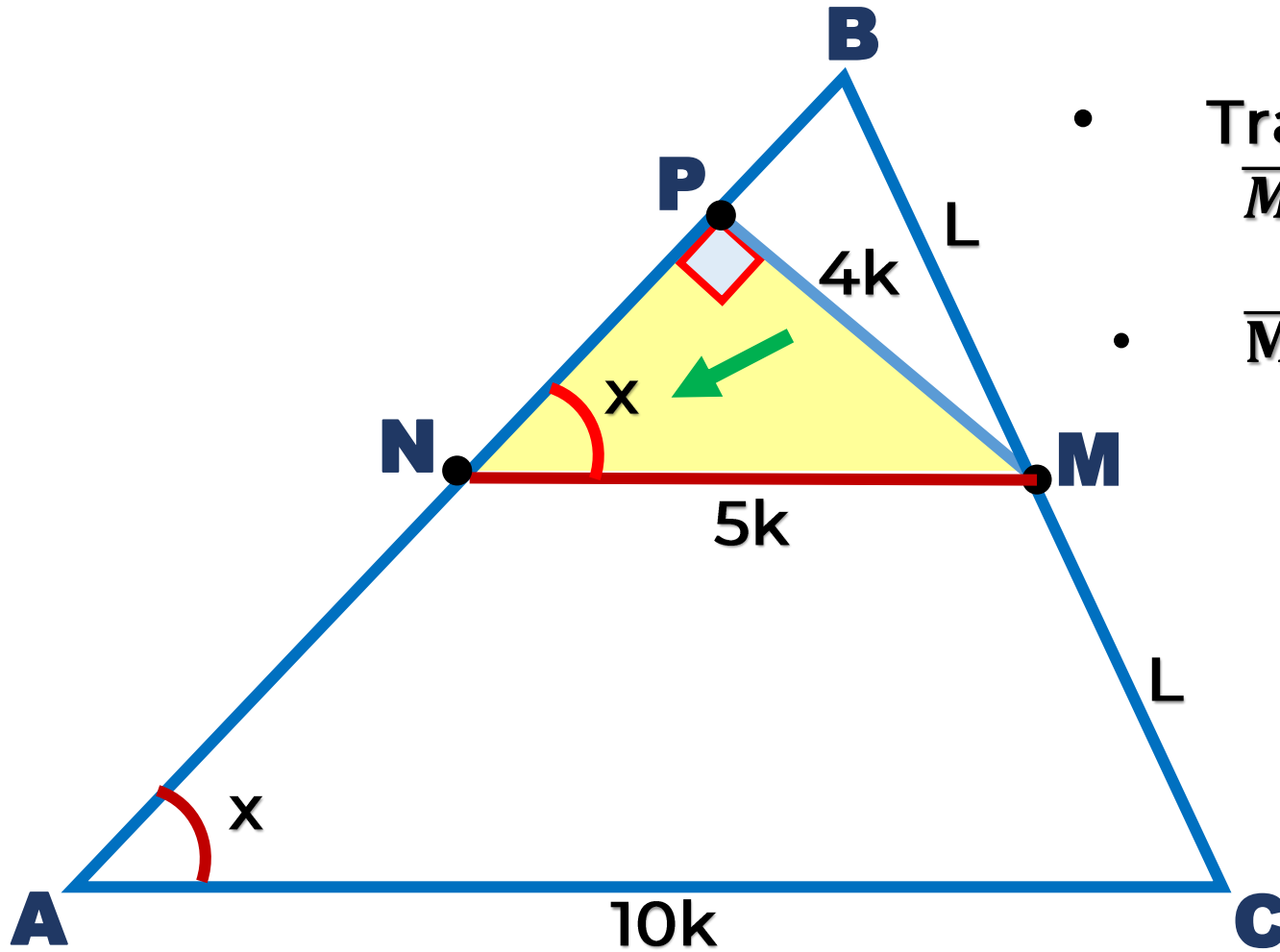
• Trazamos  $\overline{BE}$ .



• Del gráfico :  
 $\Rightarrow 5x = x + 60^\circ$   
 $4x = 60^\circ$

$$x = 15^\circ$$

5. En un triángulo ABC, M es punto medio de  $\overline{BC}$ , se ubica en  $\overline{AB}$  el punto P; tal que,  $m\angle APM = 90^\circ$ ,  $PM = 4k$  y  $AC = 10k$ , calcule  $m\angle BAC$ .

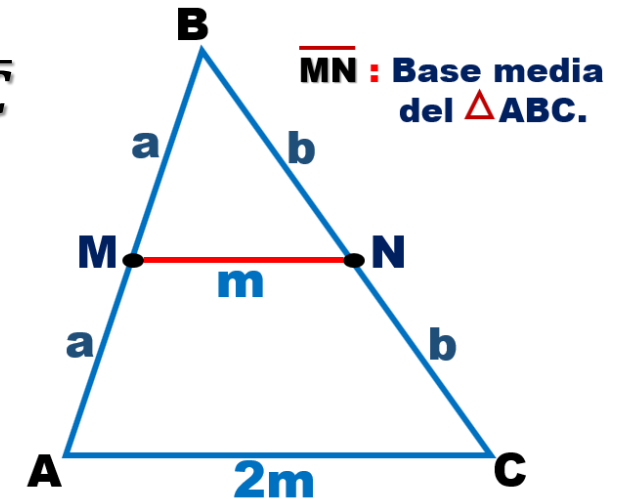


• Trazamos  
 $\overline{MN}$  paralela a  $\overline{AC}$

•  $\overline{MN}$ : Base media

$$MN = \frac{AC}{2}$$

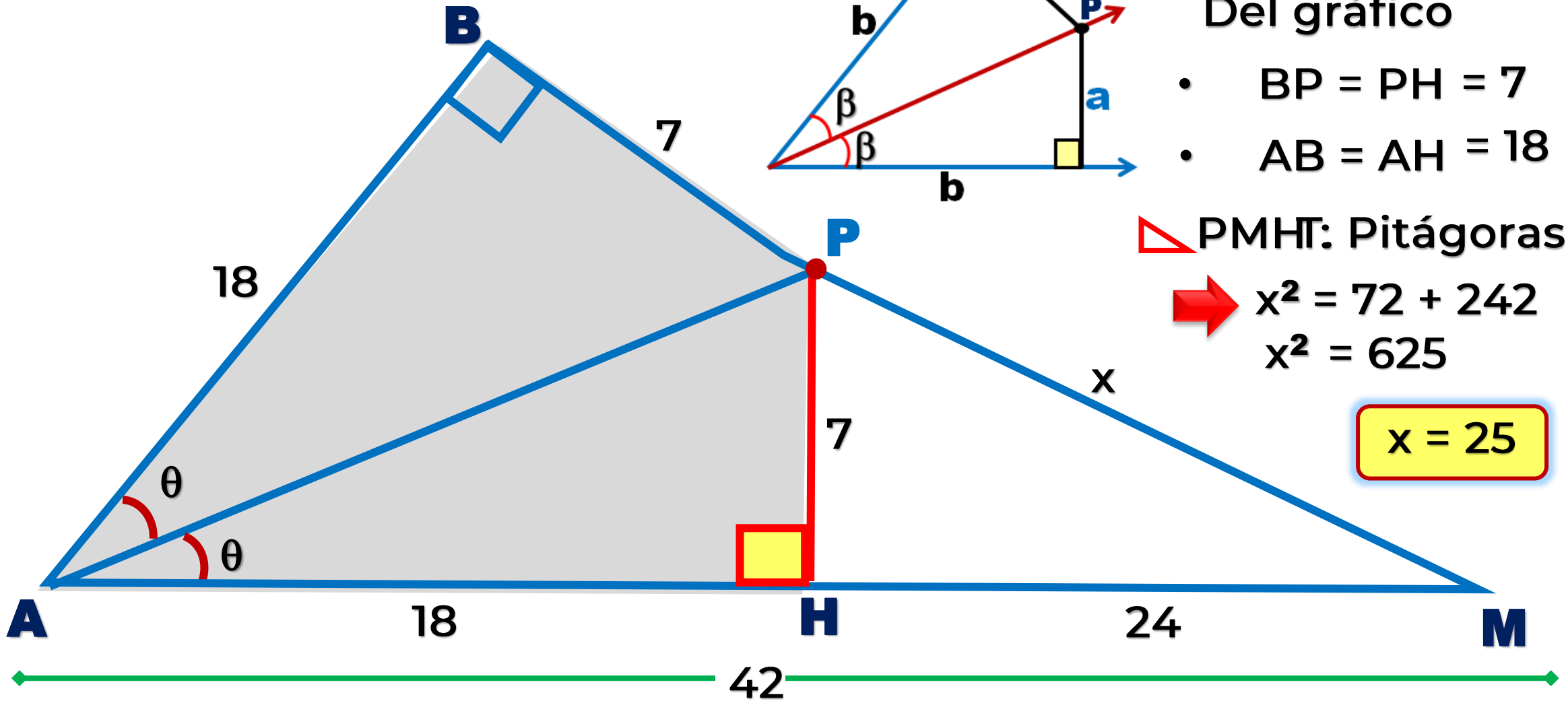
$$\overline{MN} \parallel \overline{AC}$$



$\triangle MNP$ : Notable de  $37^\circ$  y  $53^\circ$

$$x = 53^\circ$$

6. En la figura, calcule x.



7. Calcule el número total de diagonales de un polígono convexo, cuya suma de las medidas de los ángulos internos es el cuádruple de la suma de las medidas de los ángulos exteriores.

$n$  : número de lados.

$$Sm< i = 180^\circ(n - 2)$$

$$Sm< e = 360^\circ$$

- Por dato  $Sm< i = 4(Sm< e)$

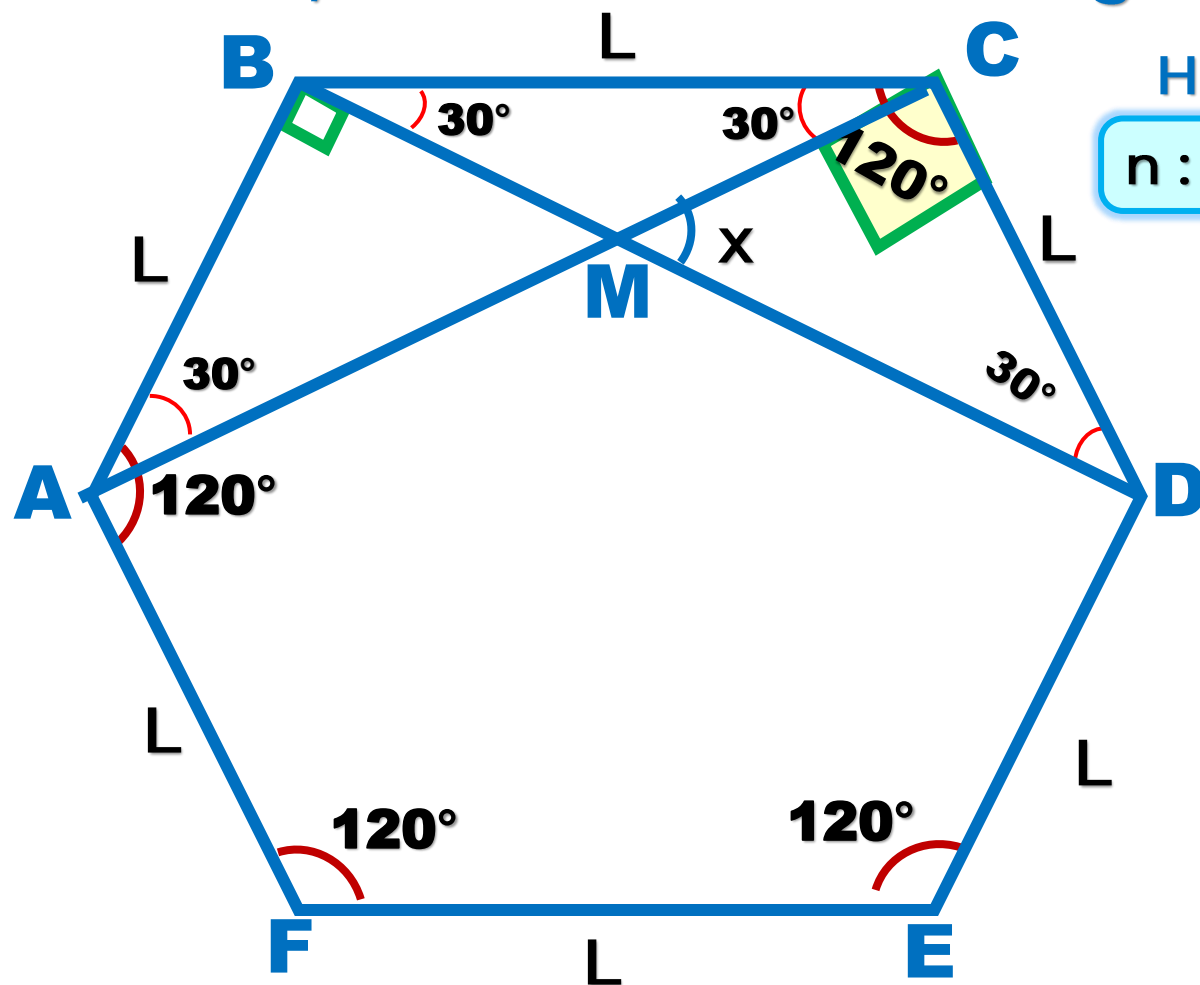
$$\begin{aligned} 1 \quad \cancel{180^\circ(n - 2)} &= 4(\cancel{360^\circ}) \quad 2 \\ n - 2 &= 8 \\ n &= 10 \end{aligned}$$

$$NTD = \frac{n(n - 3)}{2}$$

- Nos piden
- $NTD = \frac{10(10 - 3)}{2}$
- $NTD = \frac{10(7)}{2}$

$$NTD = 35$$








**n : número de lados**

**n = 6**

$$m\angle i = \frac{180^\circ(n - 2)}{n}$$

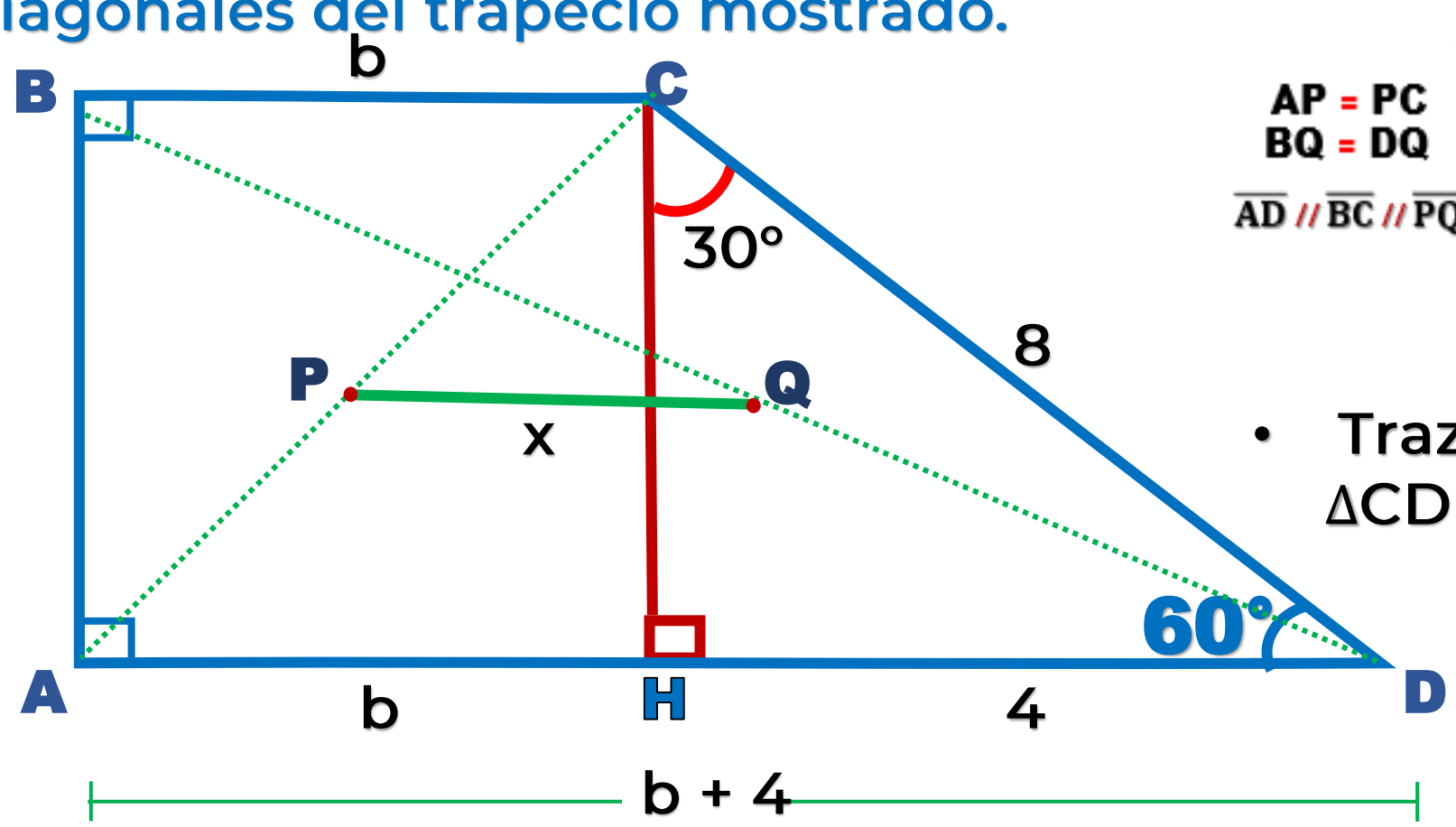
$$m_{\angle i} = \frac{180^\circ(6 - 2)}{6}$$

$$m \angle i = 120^\circ$$

-  BCD : Isósceles
-  ABC : Isósceles
-  CDM :  $x + 30^\circ = 90^\circ$

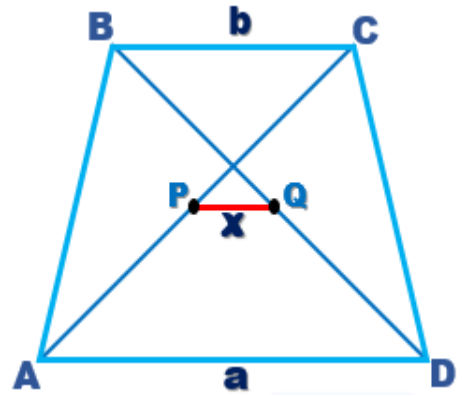
$$x = 60^\circ$$

9. Halle la longitud del segmento que une los puntos medios de las diagonales del trapecio mostrado.



$AP = PC$   
 $BQ = DQ$   
 $\overline{AD} \parallel \overline{BC} \parallel \overline{PQ}$

$x = \frac{a-b}{2}$

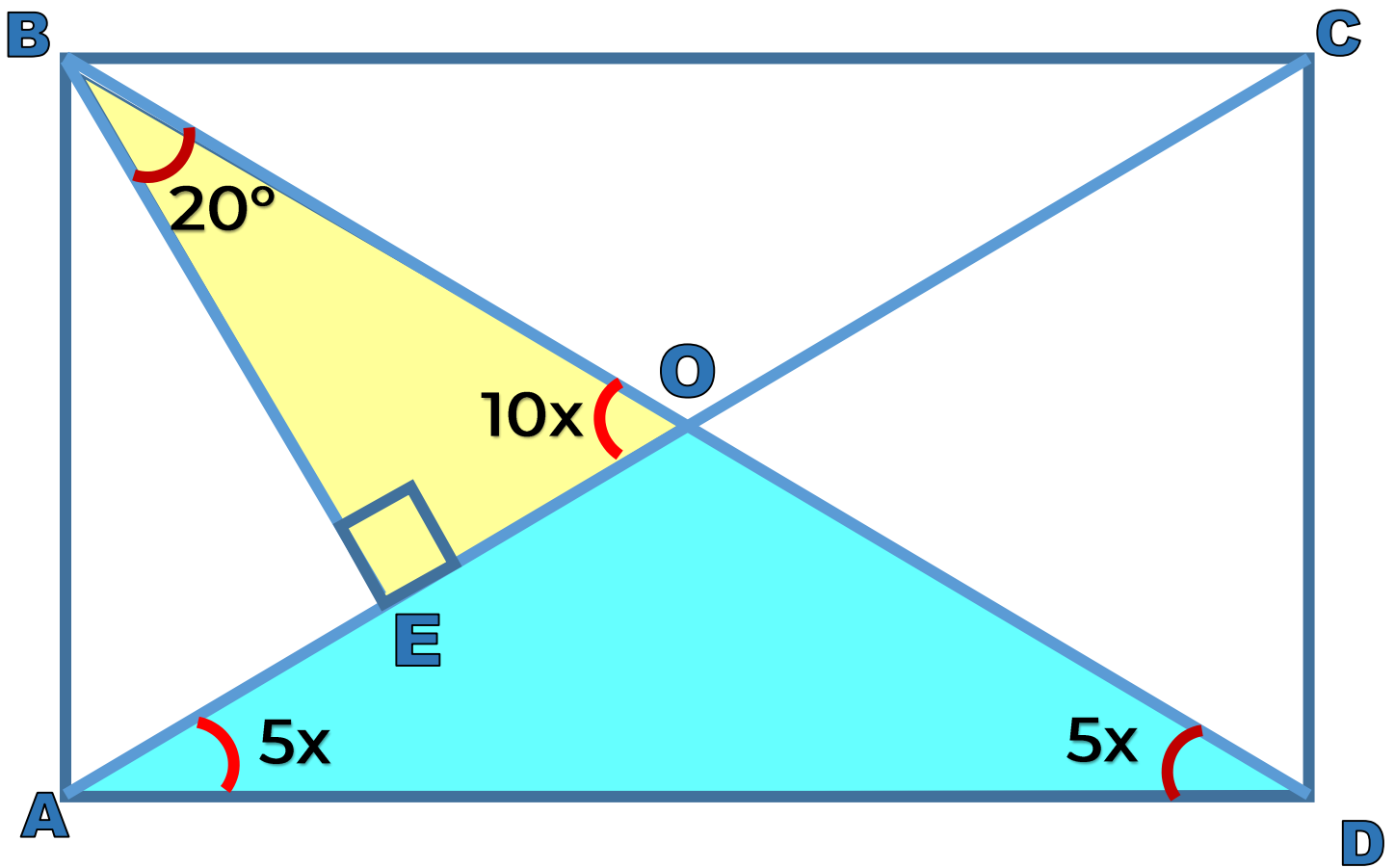


- Trazamos la altura  $\overline{CH}$ .  
 $\triangle CDH$ : Notable de  $30^\circ$  y  $60^\circ$ 
  - Por teorema
  - $x = \frac{(b + 4) - b}{2}$

$x = \frac{4}{2}$

$x = 2$

10. En la figura, ABCD es un rectángulo, calcule x.



**RECTÁNGULO**

△ EBO :  $20^\circ + 10x = 90^\circ$   
 $10x = 70^\circ$   
 **$x = 7^\circ$**