



GEOMETRÍA

Capítulo 2

3rd
SECONDARY

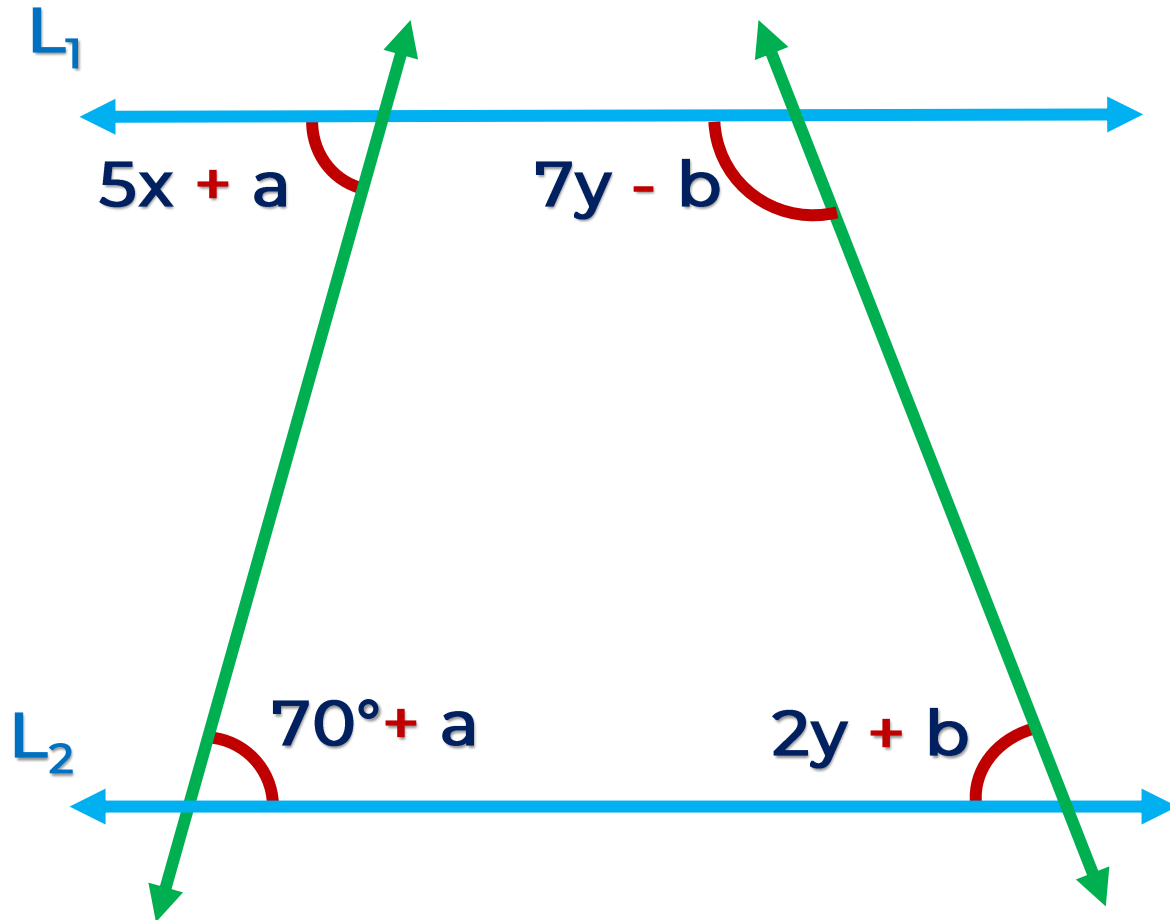
Retroalimentación



 **SACO OLIVEROS**

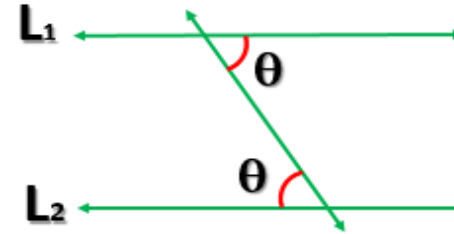


1. Si $L_1 \parallel L_2$, halle el valor de $x + y$.

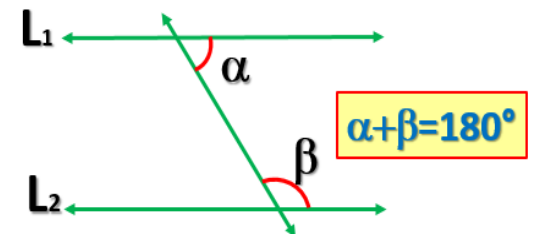


Resolución

Ángulos alternos internos



Ángulos conjugados



$$\begin{aligned} 5x + a &= 70^\circ + a \\ 5x &= 70^\circ \end{aligned}$$

$$x = 14^\circ$$

$$\begin{aligned} 7y - b + 2y + b &= 180^\circ \\ 9y &= 180^\circ \end{aligned}$$

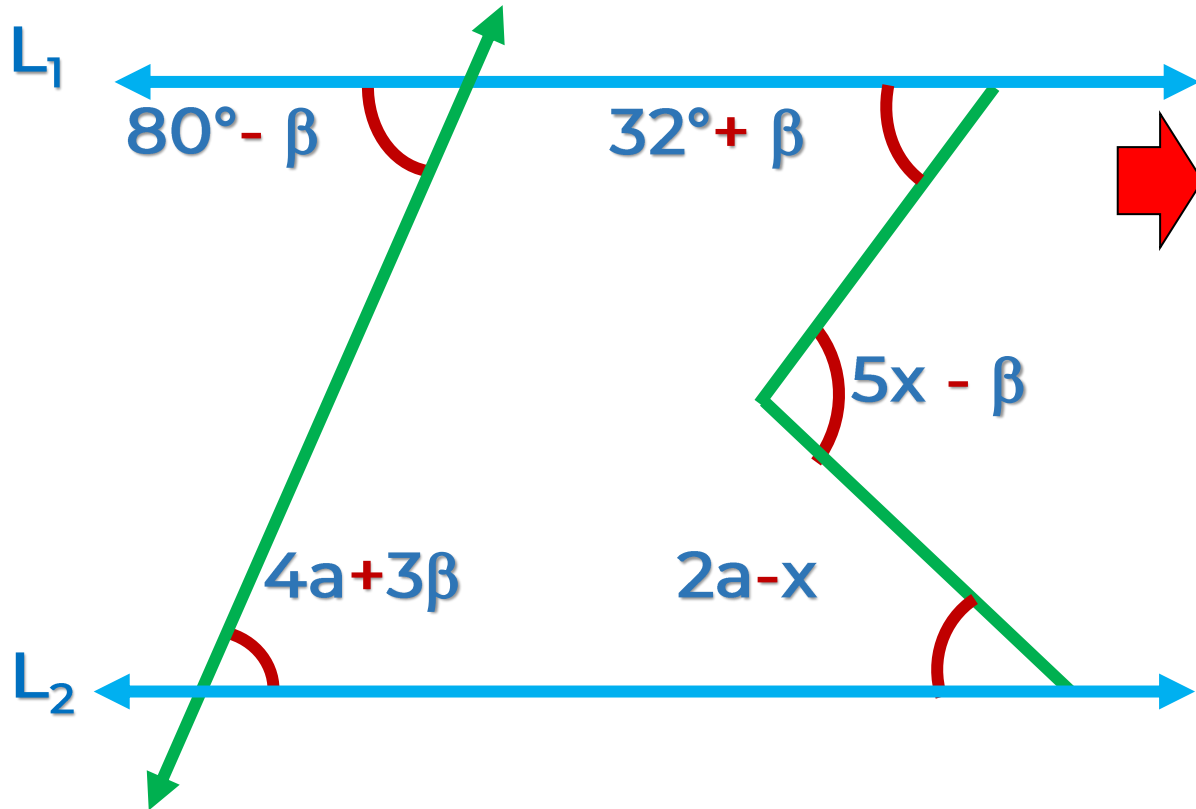
$$y = 20^\circ$$

$$\Rightarrow x + y = 14^\circ + 20^\circ$$

$$x + y = 34^\circ$$



2. Si $L_1 \parallel L_2$, halle el valor de x .



Resolución

Ángulos alternos internos



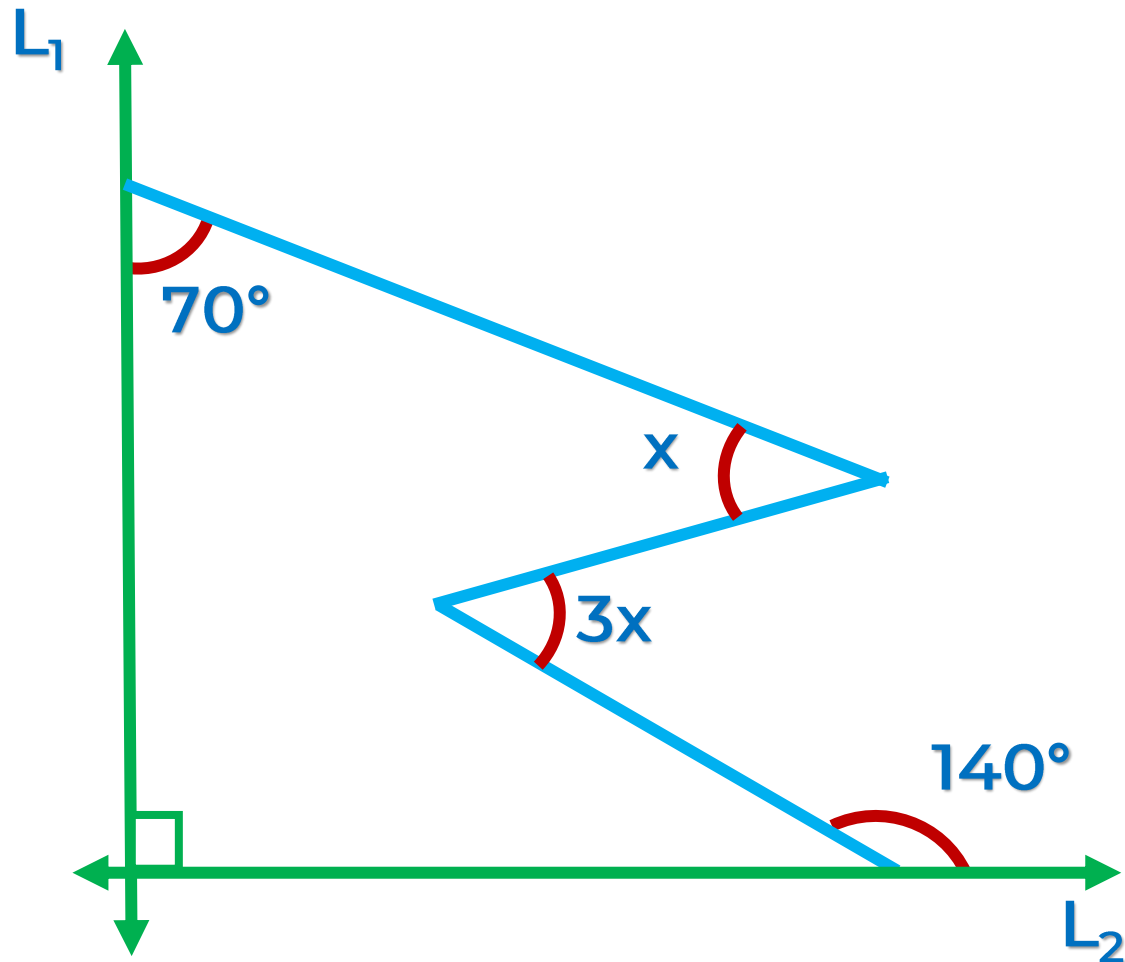
$$\alpha + \beta = x$$

- $80^\circ - \beta = 4a + 3\beta$
 $80^\circ = 4\alpha + 4\beta$
 $20^\circ = \alpha + \beta$
- $5x - \beta = 2\alpha - x + 32^\circ + \beta$
 $6x = 2\alpha + 2\beta + 32^\circ$
 $6x = 2(\alpha + \beta) + 32^\circ$
 $6x = 2(20^\circ) + 32^\circ$
 $6x = 72^\circ$

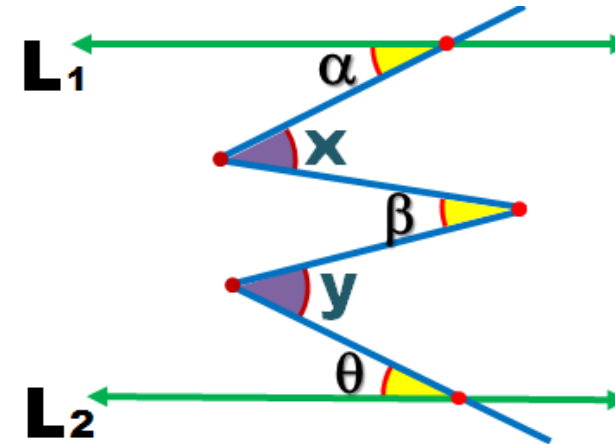
$$x = 12^\circ$$



3. Halle el valor de x .



Resolución



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



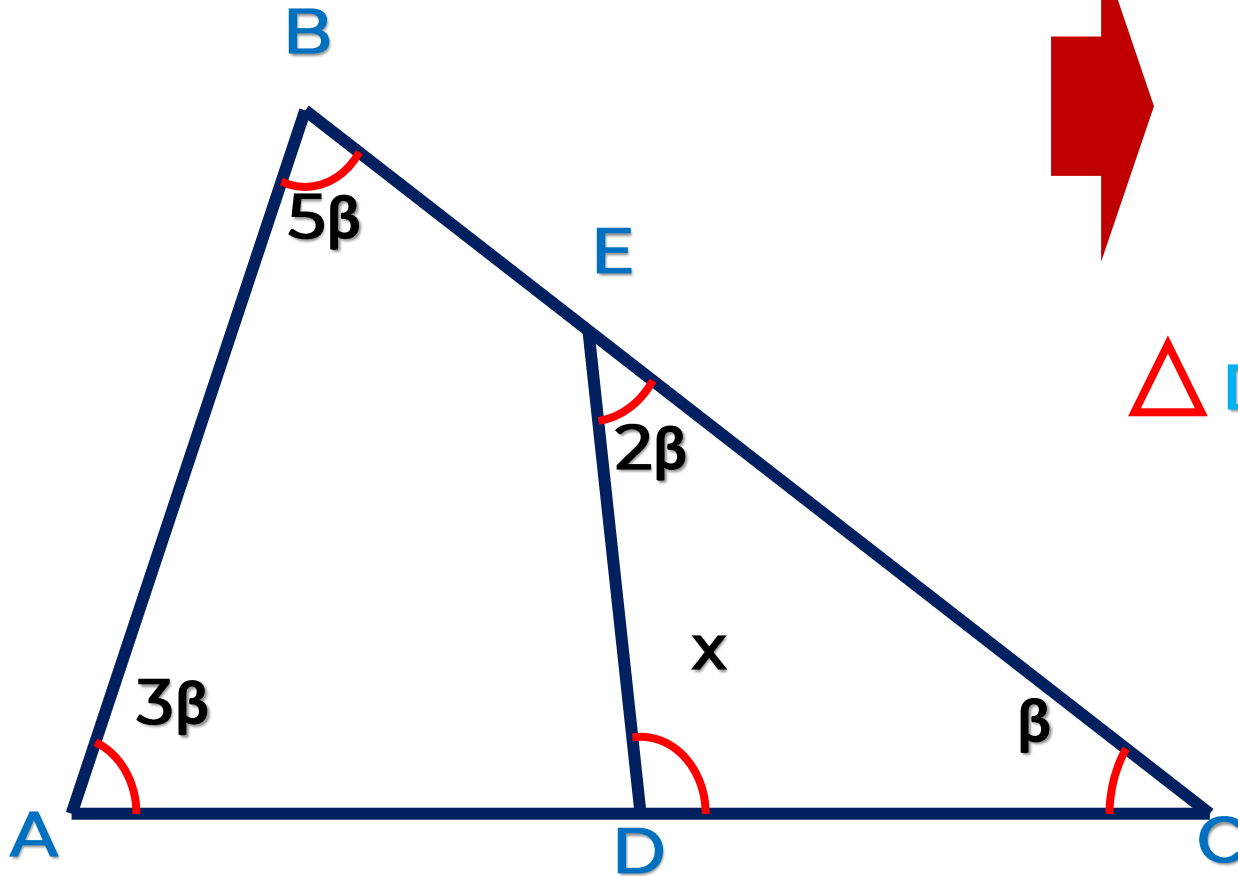
$$20^\circ + 3x = x + 40^\circ$$

$$2x = 20^\circ$$

$$x = 10^\circ$$



4. Halle el valor de x.



$\triangle ABC$:

Resolución

$$\begin{aligned} 3\beta + 5\beta + \beta &= 180^\circ \\ 9\beta &= 180^\circ \\ \beta &= 20^\circ \end{aligned}$$

$\triangle DEC$:

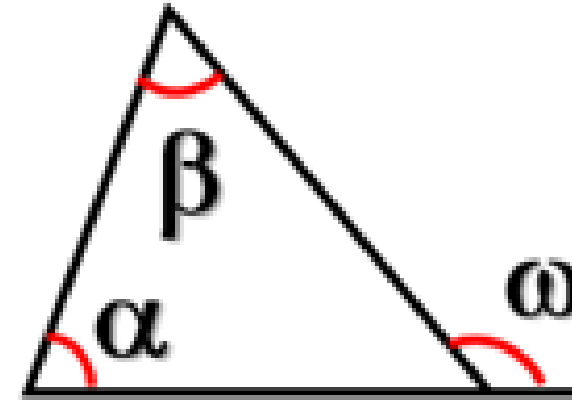
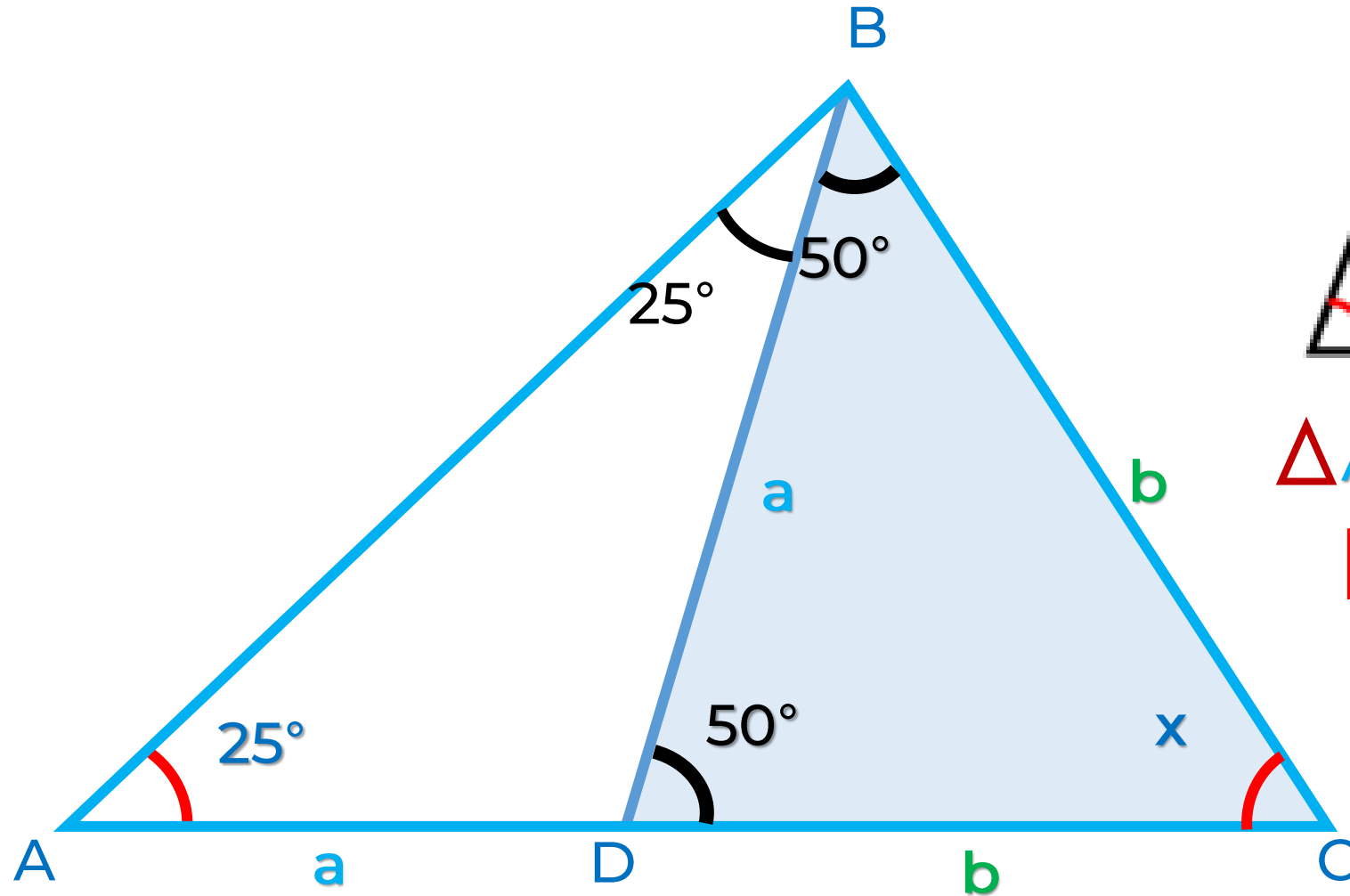
$$\begin{aligned} x + 2\beta + \beta &= 180^\circ \\ x + 3\beta &= 180^\circ \\ x + 3(20^\circ) &= 180^\circ \end{aligned}$$

$$x = 120^\circ$$



5. Halle el valor de x si $AD = DB$ y $BC = CD$.

Resolución



$$\omega = \alpha + \beta$$

$\triangle ABD$ y $\triangle BCD$: ISÓSCELES



$$50^\circ + 50^\circ + x = 180^\circ$$

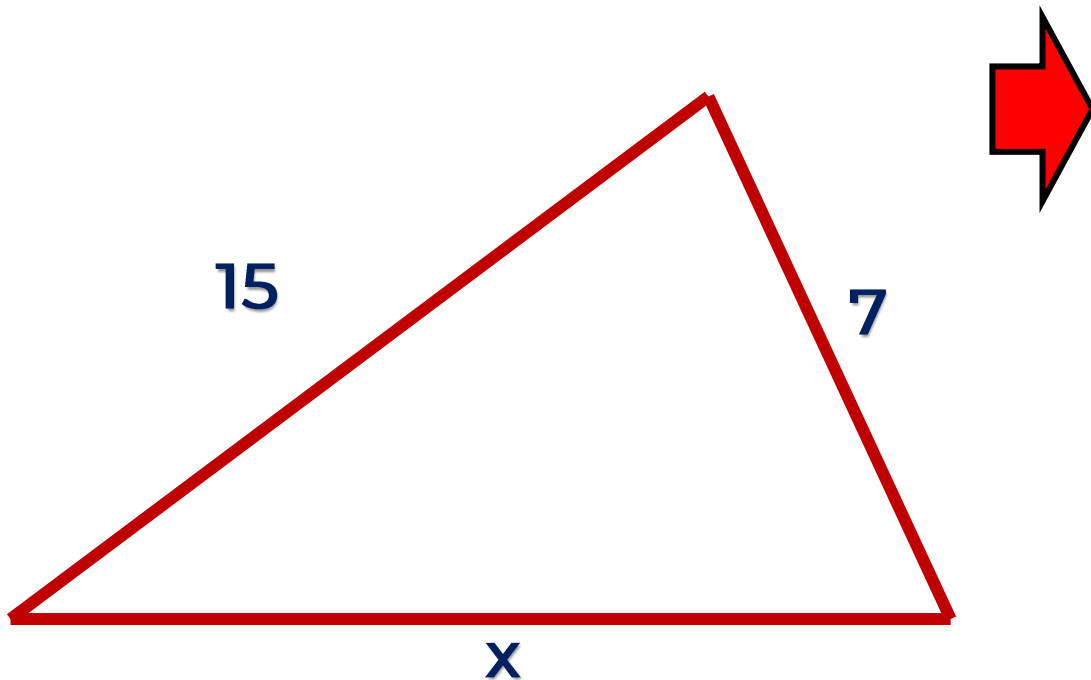
$$100^\circ + x = 180^\circ$$

$$x = 80^\circ$$



6. Las longitudes de los lados de un triángulo son 7 y 15. Calcule la suma entre el máximo y el mínimo valor entero que puede tomar la longitud del tercer lado.

Resolución



Por teorema de la existencia :

$$15 - 7 < x < 15 + 7$$

$$8 < x < 22$$

$$X_{\text{mín}} + X_{\text{máx}}$$



9



+

21

$$X_{\text{mín}} + X_{\text{máx}} = 30$$

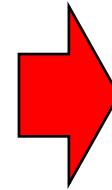


7. Halle el valor de x.

Resolución

 ABC:

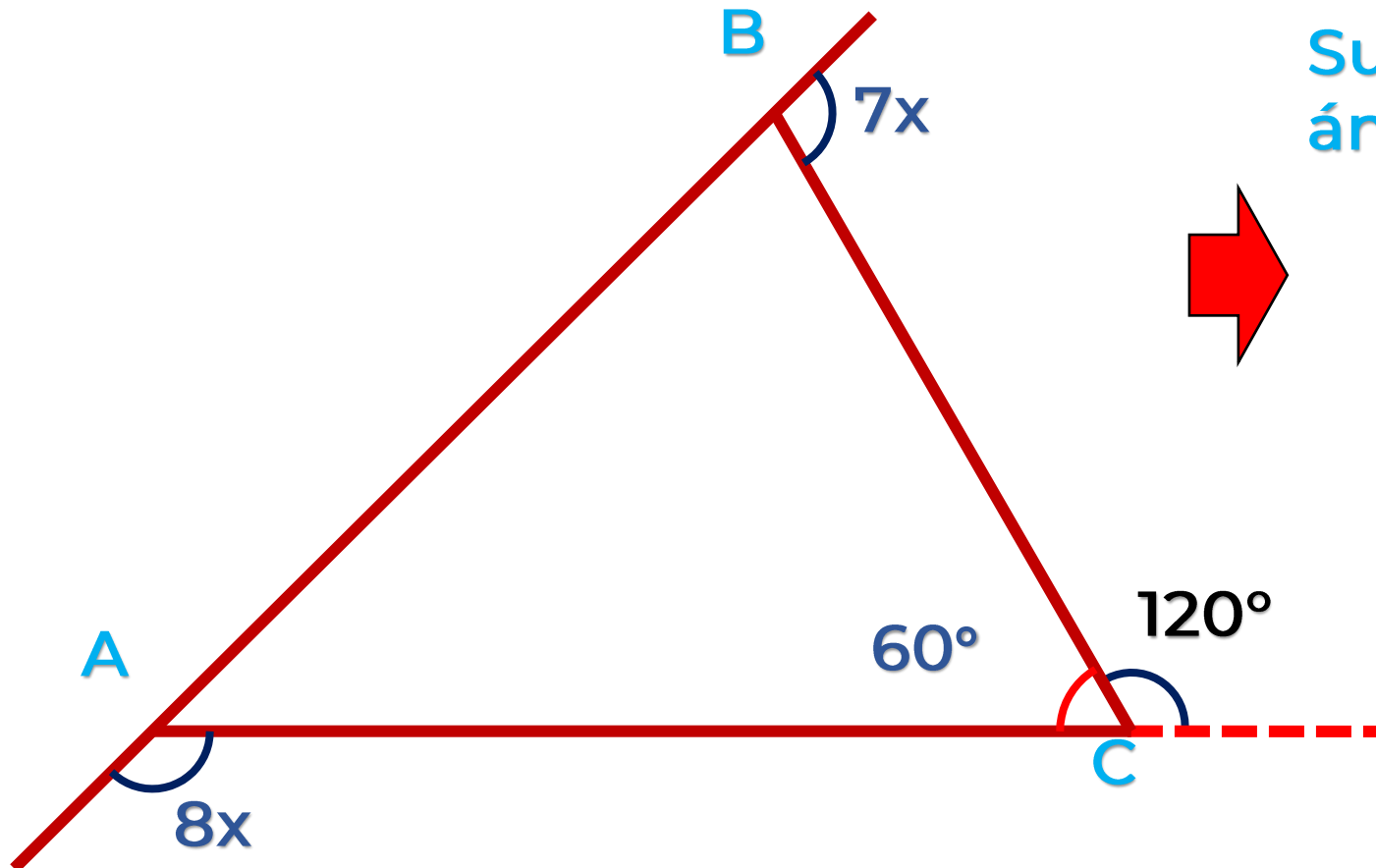
Suma de las medidas de los
ángulos externos.



$$7x + 8x + 120^\circ = 360^\circ$$

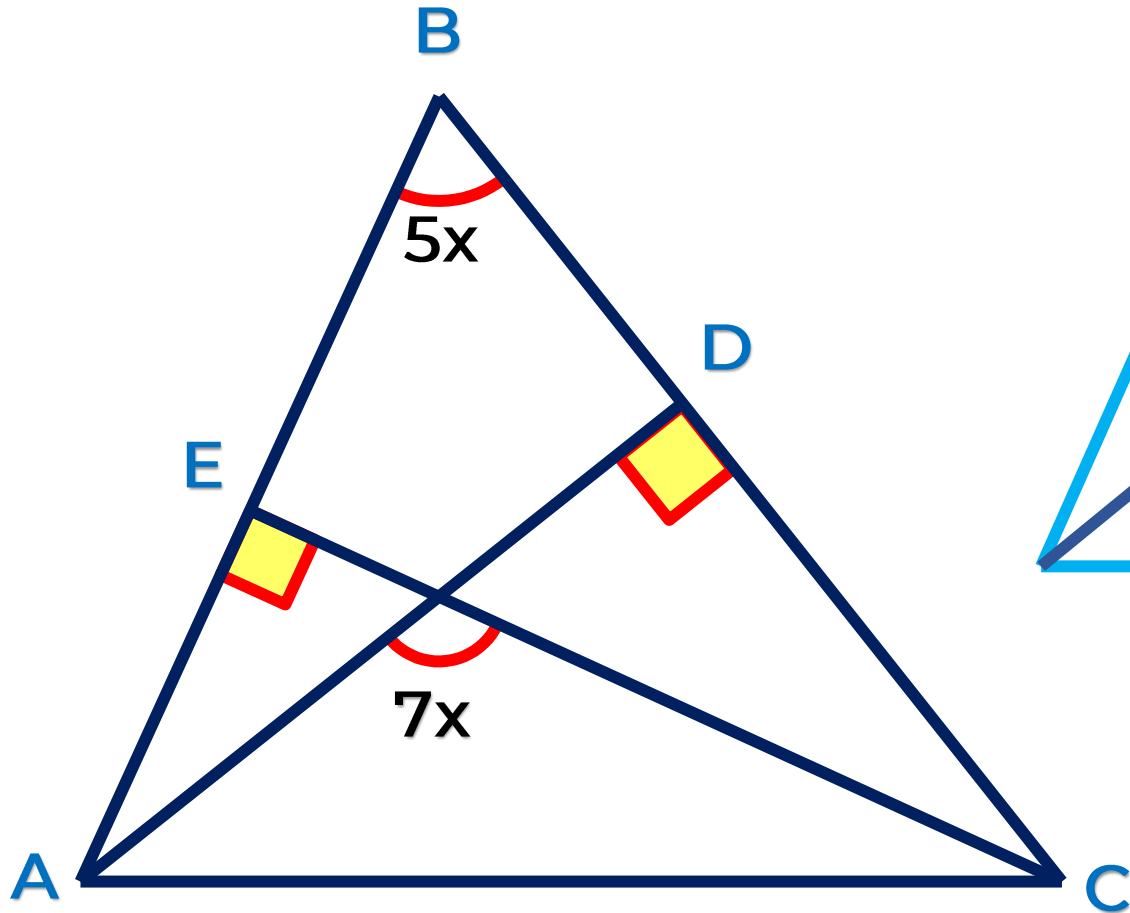
$$15x = 240^\circ$$

$$x = 16^\circ$$





8. En el triángulo ABC mostrado, si \overline{AD} y \overline{CE} son alturas, halle el valor de x.



Resolución

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



$$5x + 7x = 180^\circ$$

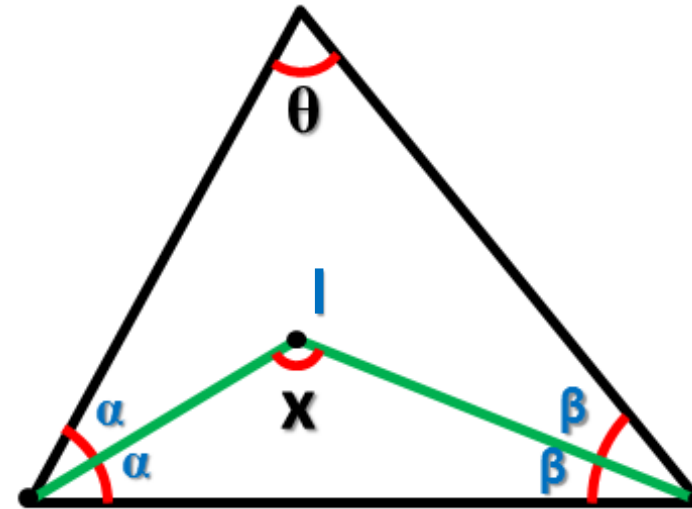
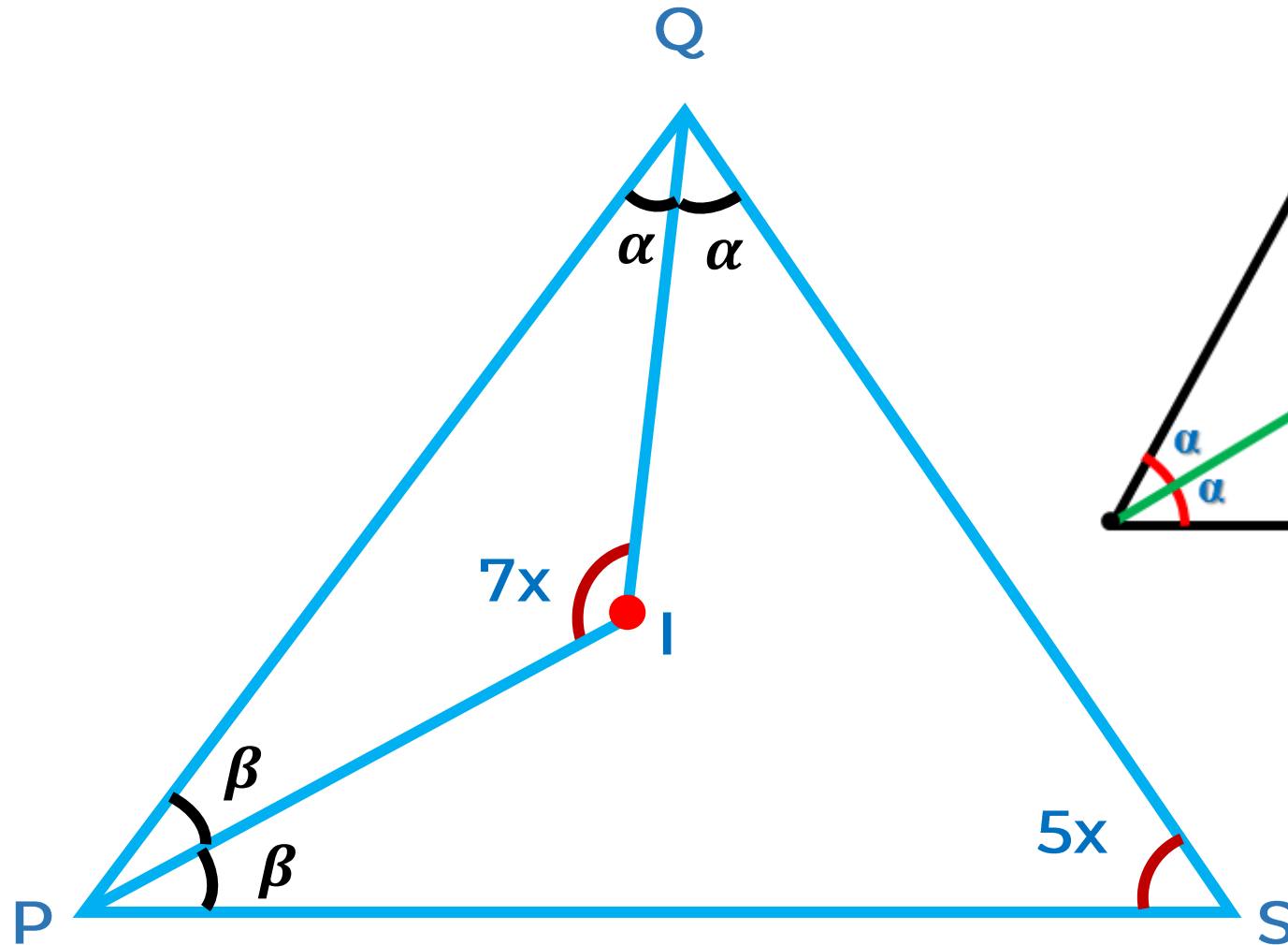
$$12x = 180^\circ$$

$$x = 15^\circ$$



9. En la siguiente figura, halle el valor de x .

Resolución



$$x = 90^\circ + \frac{\theta}{2}$$

$$(7x = 90^\circ + \frac{5x}{2}) \times 2$$

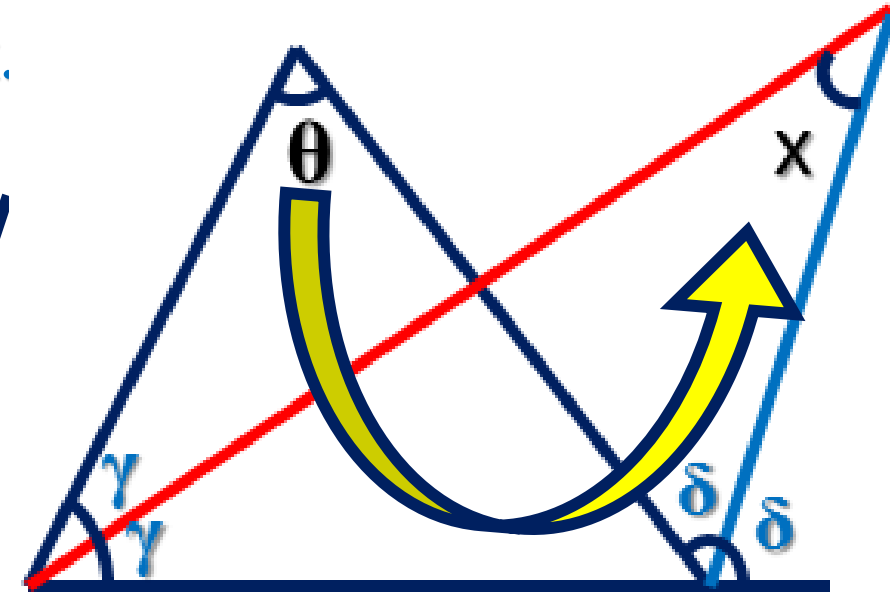
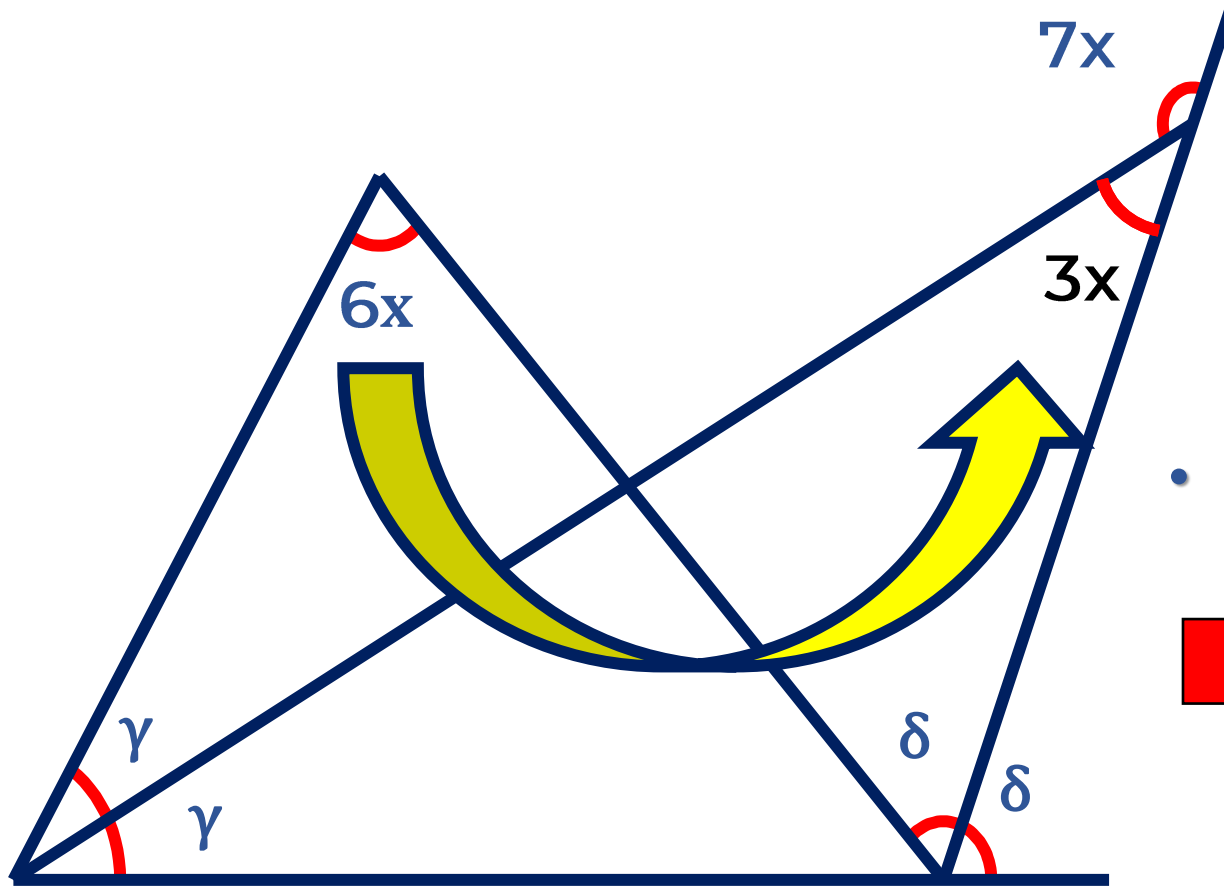
$$14x = 180^\circ + 5x$$

$$9x = 180^\circ$$

$$x = 20^\circ$$

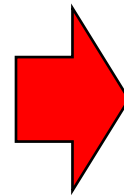


10. En el gráfico, halle el valor de x .



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

• Del gráfico



$$7x + 3x = 180^\circ$$

$$10x = 180^\circ$$

$$x = 18^\circ$$