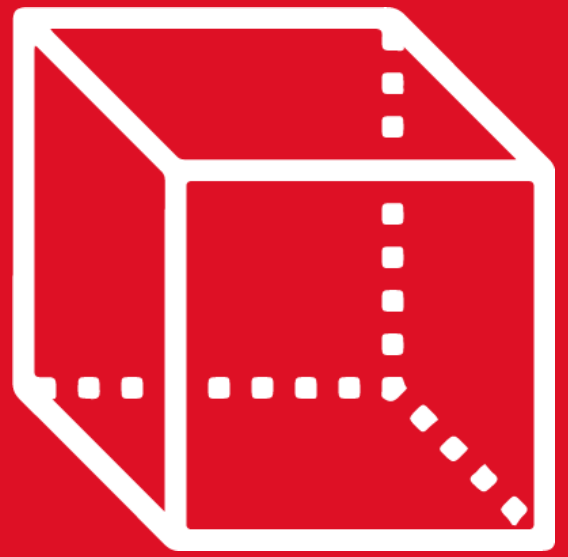
# GEOMETRÍA

## Retroalimentación



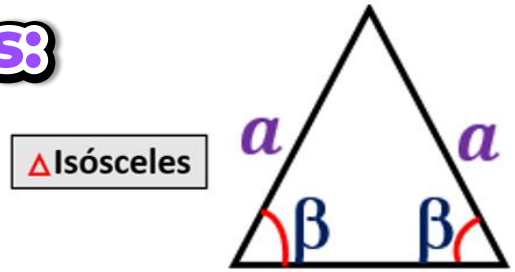
4st
SECONDARY

Tomo I

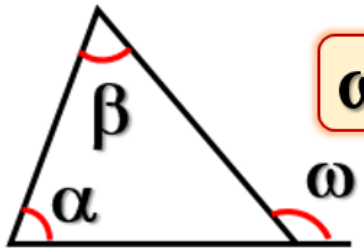
SACO OLIVEROS

# 1. En el gráfico, halle el valor de x , si: AB = BD = DE = CE.

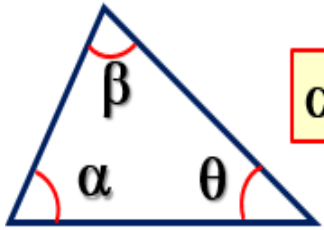
**Recordemos:**



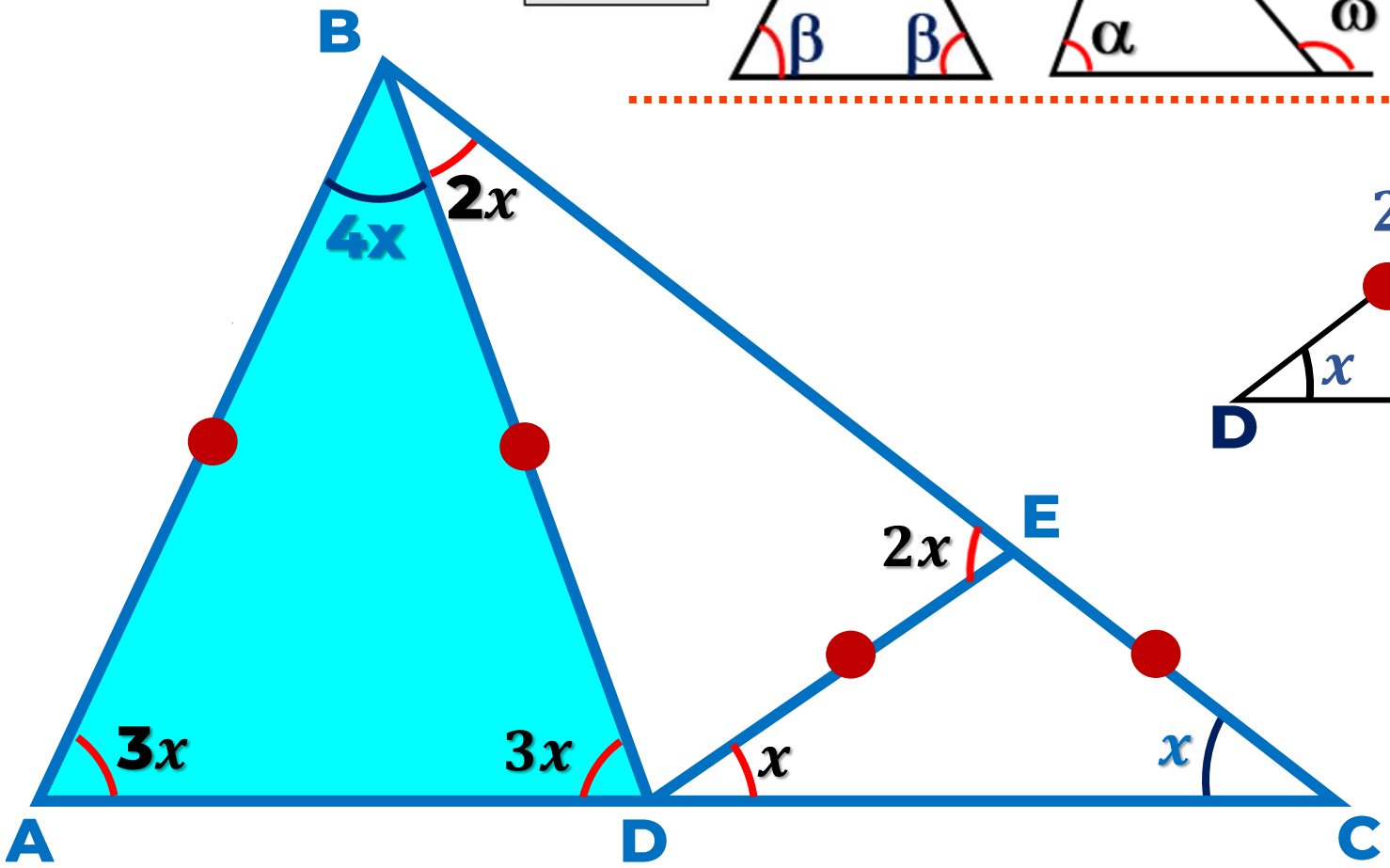

△Isósceles

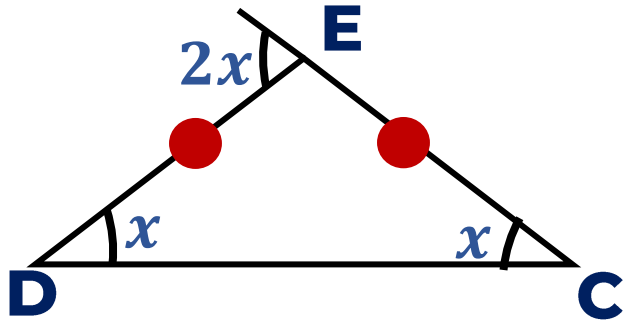


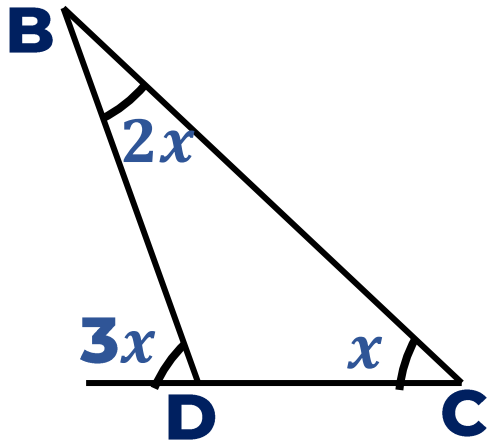

$\omega = \alpha + \beta$




$\alpha + \beta + \theta = 180°$




**En el △ABD:**

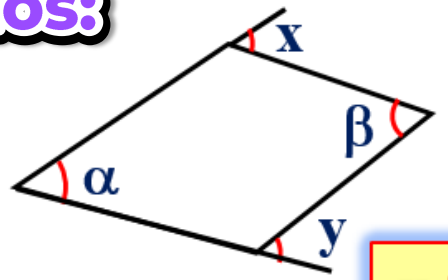
$3x + 3x + 4x = 180°$

$10x = 180°$

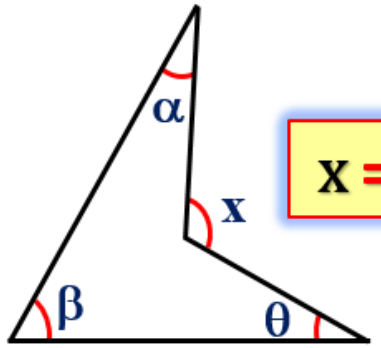
$x = 18°$

## 2. En la figura, halle el valor de *x*.

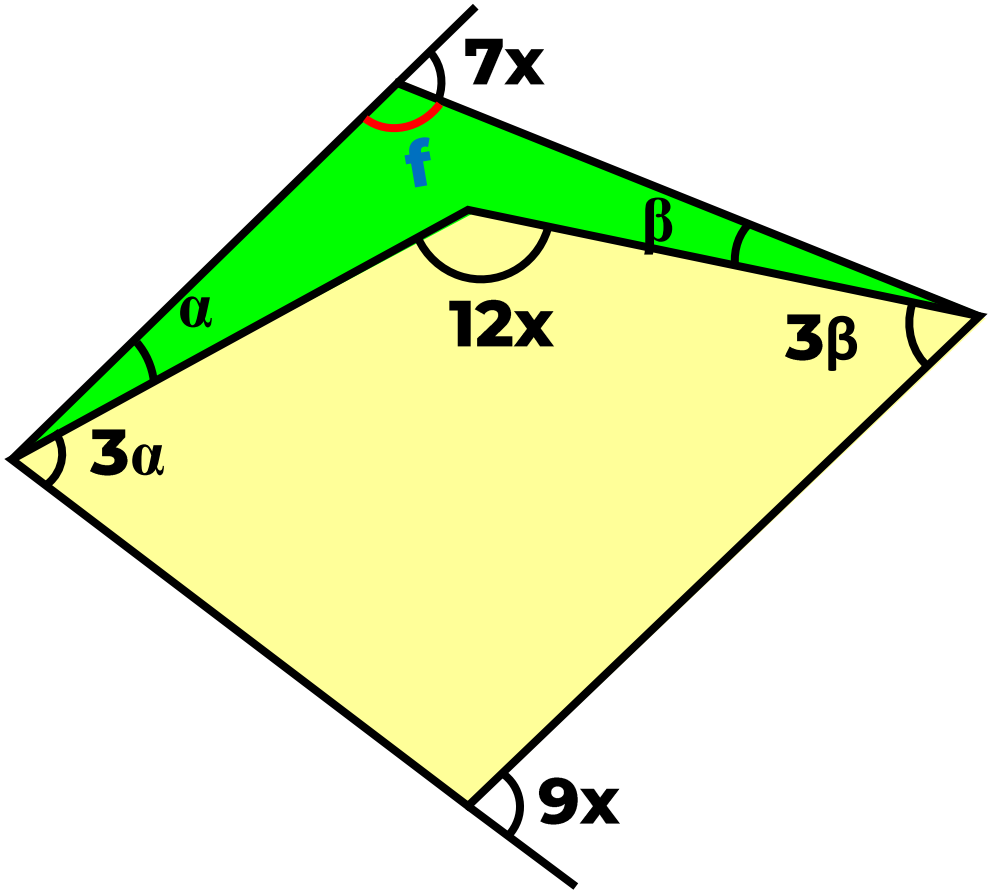
**Recordemos:**




$x + y = \alpha + \beta$




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




- $4\alpha + 4\beta = 7x + 9x$

$\cancel{4\alpha} + \cancel{4\beta} = \cancel{16x}$

$\alpha + \beta = 4x$

- $12x = \underbrace{\alpha + \beta}_{4x} + f$

$8x = f$

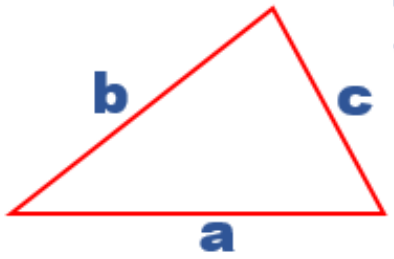
- $7x + \underbrace{f}_{8x} = 180°$

$15x = 180°$

$x = 12°$

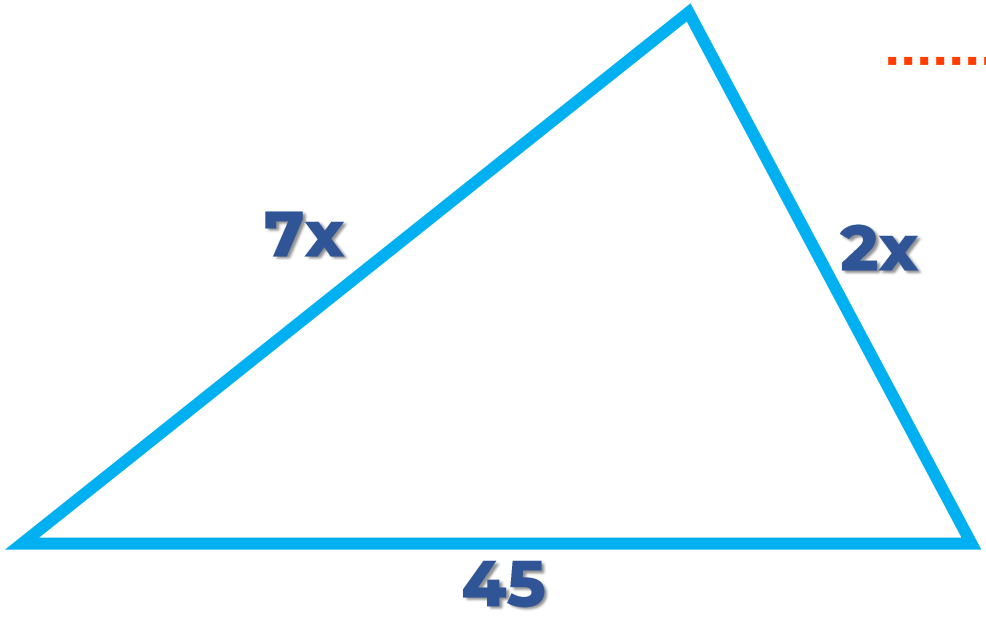
**3. Si los lados de un triangulo miden 6x , x y 21, halle la suma de los valores enteros que puede tomar x.**

**Recordemos:**




**Teorema de la existencia**

$$b-c < a < b+c$$




$$7x - 2x < 45 < 7x + 2x$$

$$5x < 45 < 9x$$

- $5x < 45$ ; $x < 9$
- $45 < 9x$ ; $5 < x$

$$5 < x < 9$$

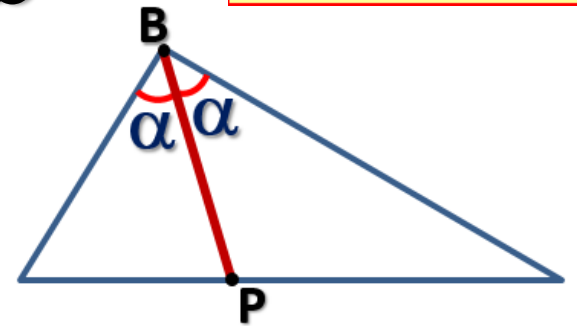
$$x = 6 ; 7 ; 8$$

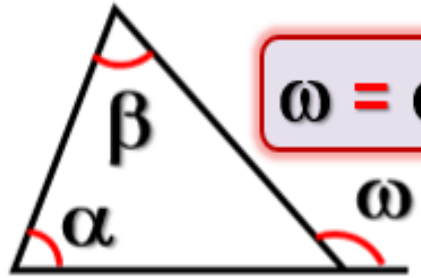
**Nos piden:** $6 + 7 + 8 = 21$

# 4. Calcule la m∢BAC, si AB = BD; además $\overline{BD}$ es bisectriz del ΔABC.

**Recordemos:**

$\overline{BP}$ : Bisectriz Interior




$\omega = \alpha + \beta$




**ΔABD : ISÓSCELES**

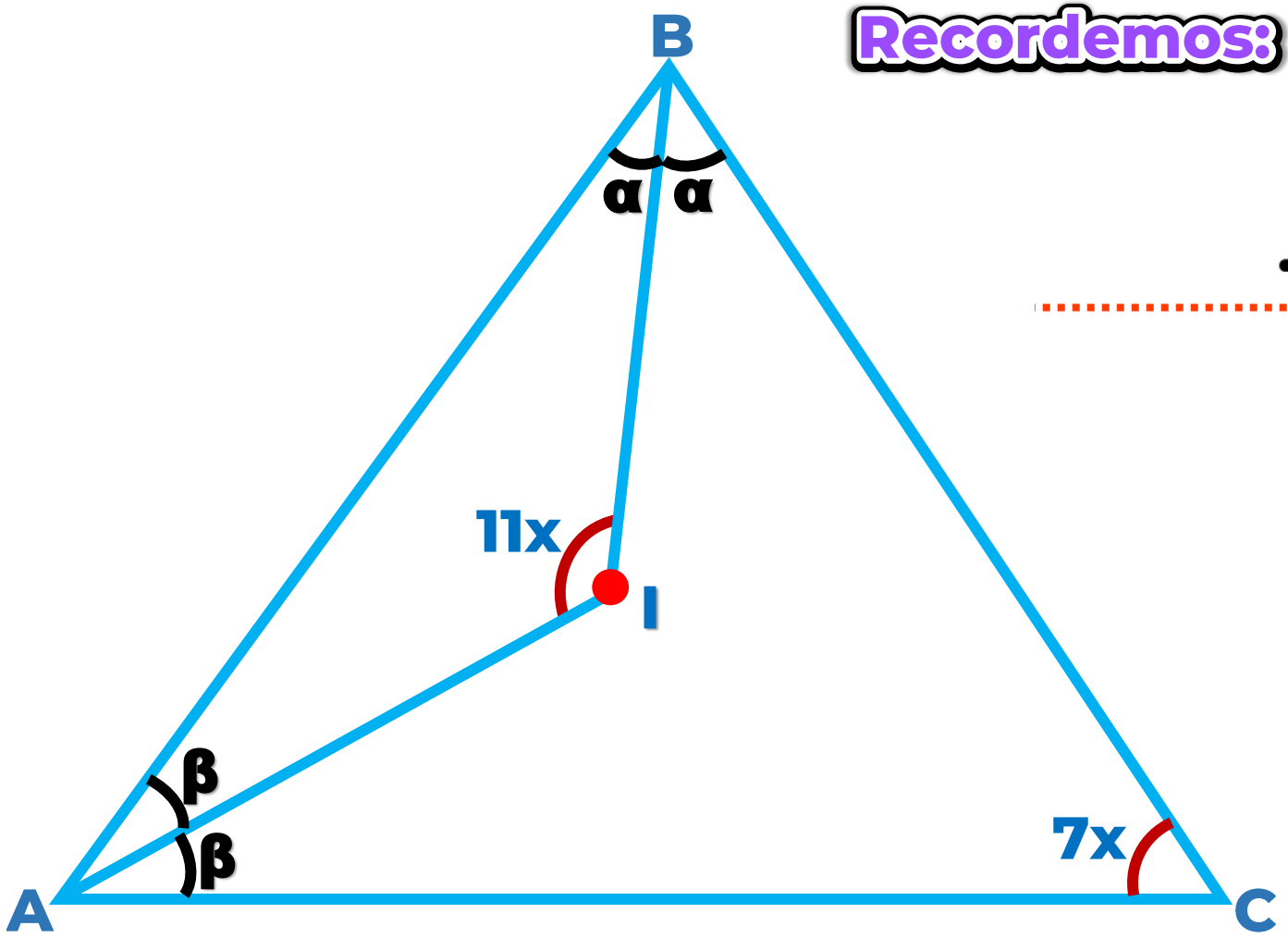
$\alpha + \alpha + 30° + \alpha + 30° = 180°$

$3\alpha = 120°$

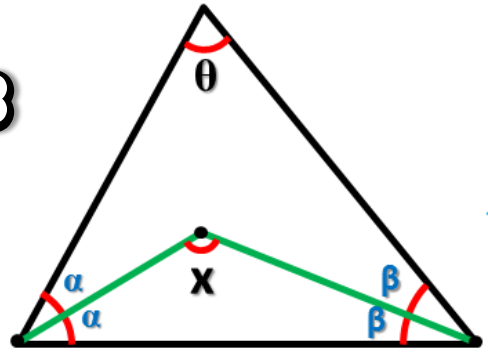
$\alpha = 40°$

**m∢BAC = 70°**

## 5. En la siguiente figura, halle el valor de *x*.




**Recordemos:**




$$X = 90° + \frac{\theta}{2}$$

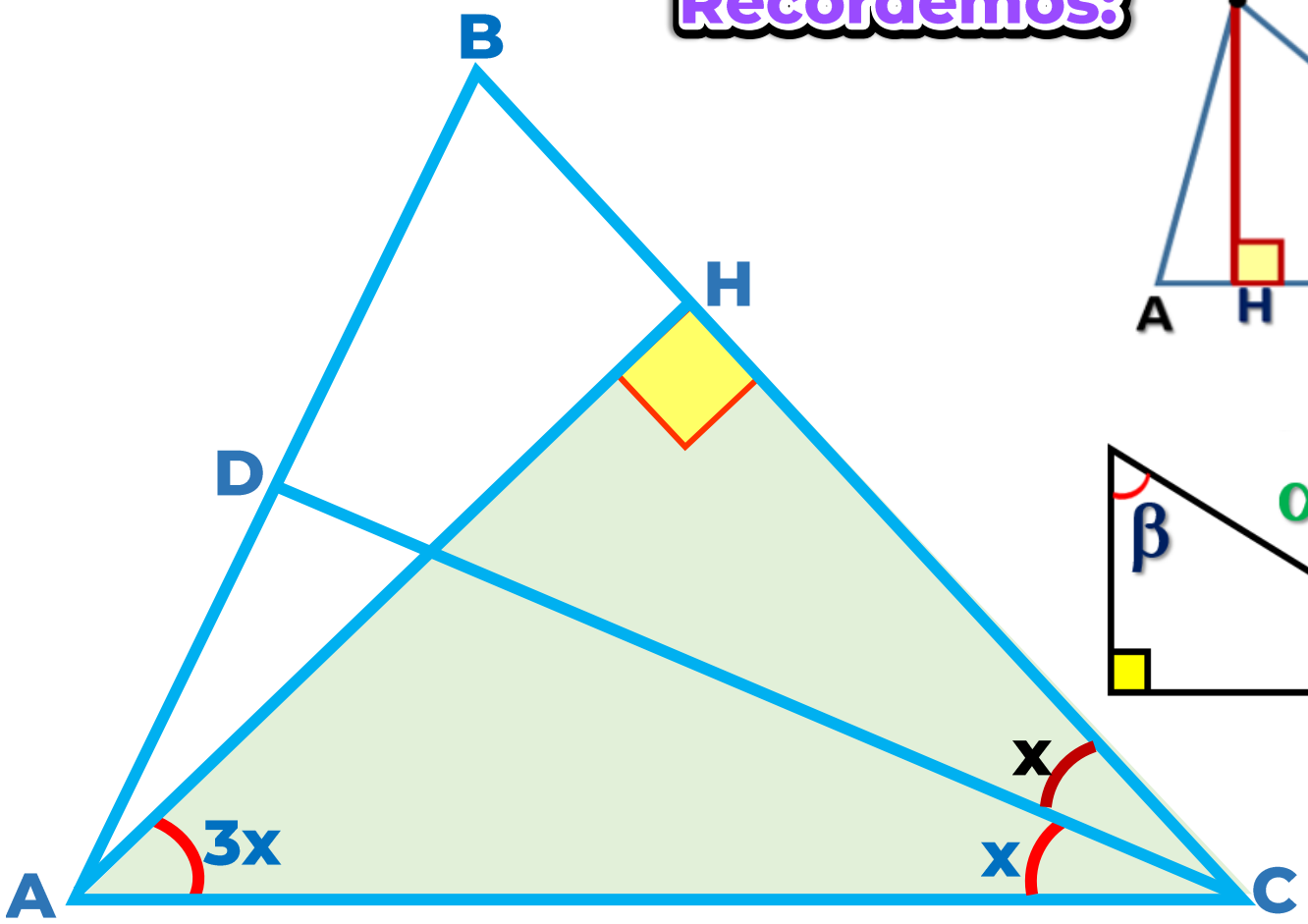
$$\left(11x = 90° + \frac{7x}{2}\right) x2$$

$$22x = 180° + 7x$$

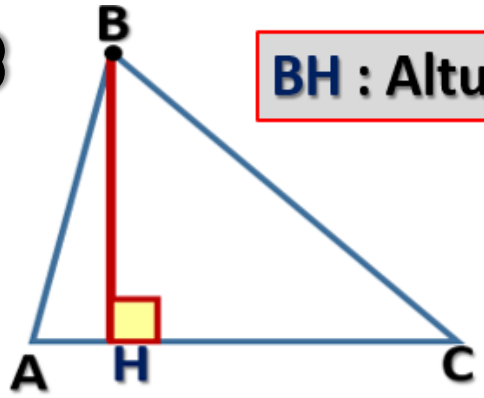
$$15x = 180°$$

$$x = 12°$$

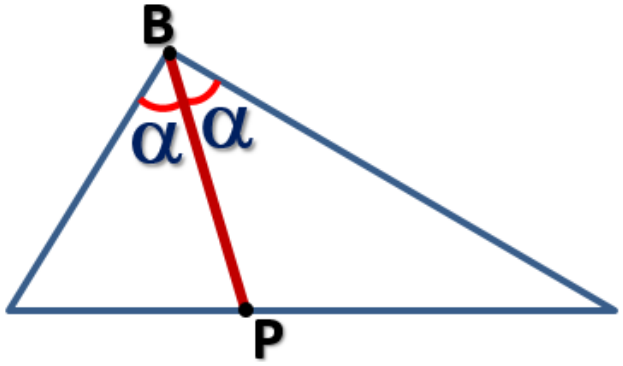
**6. Halle el valor de x, si $\overline{AH}$ es altura y $\overline{CD}$ es bisectriz interior del triángulos ABC.**



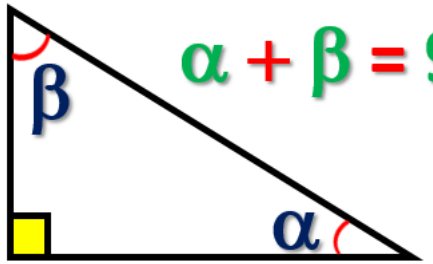

**Recordemos:**




**BH : Altura**




**$\overline{BP}$ : Bisectriz Interior**




$\alpha + \beta = 90°$

**En el △AHC:**

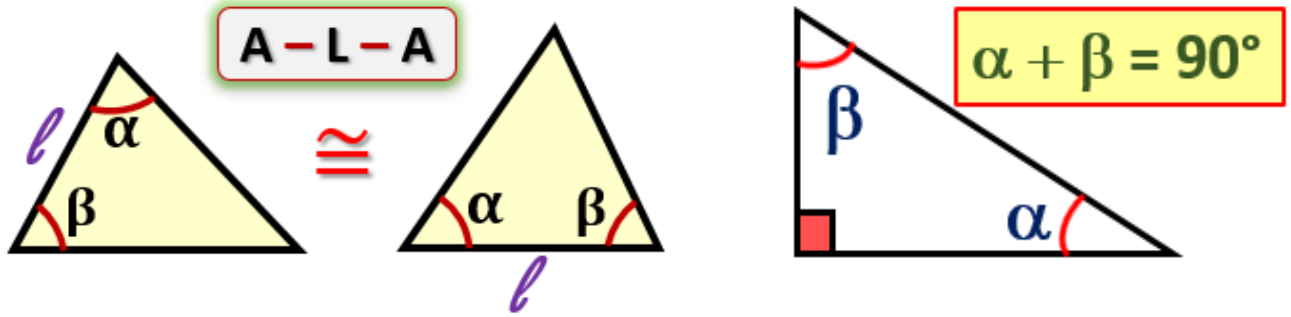
$3x + 2x = 90°$

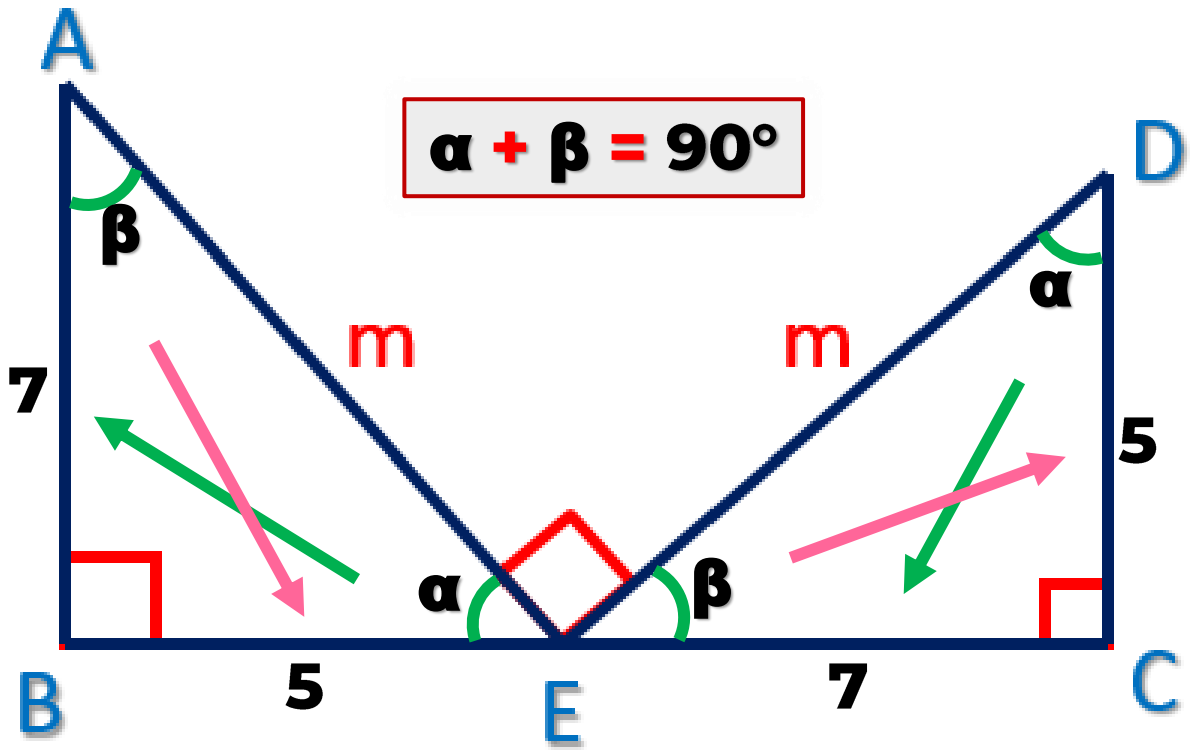
$5x = 90°$

$x = 18°$

# 7. Halle BC si AB = 7 y DC = 5.

**Recordemos:**




$\triangle ABE \cong \triangle CDE$

(A-L-A)

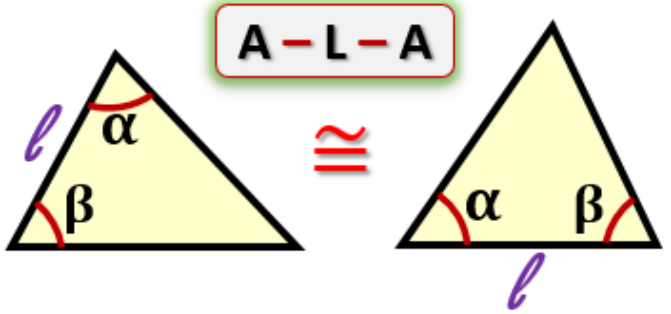
$BC = 5 + 7$

$BC = 12$

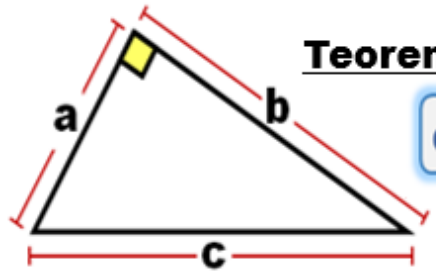
**8. En un triángulo ABC, se traza la mediana $\overline{BM}$. Si BM = 4, AB = 15 y m∢ABM = 90°, halle BC.**

**Recordemos:**

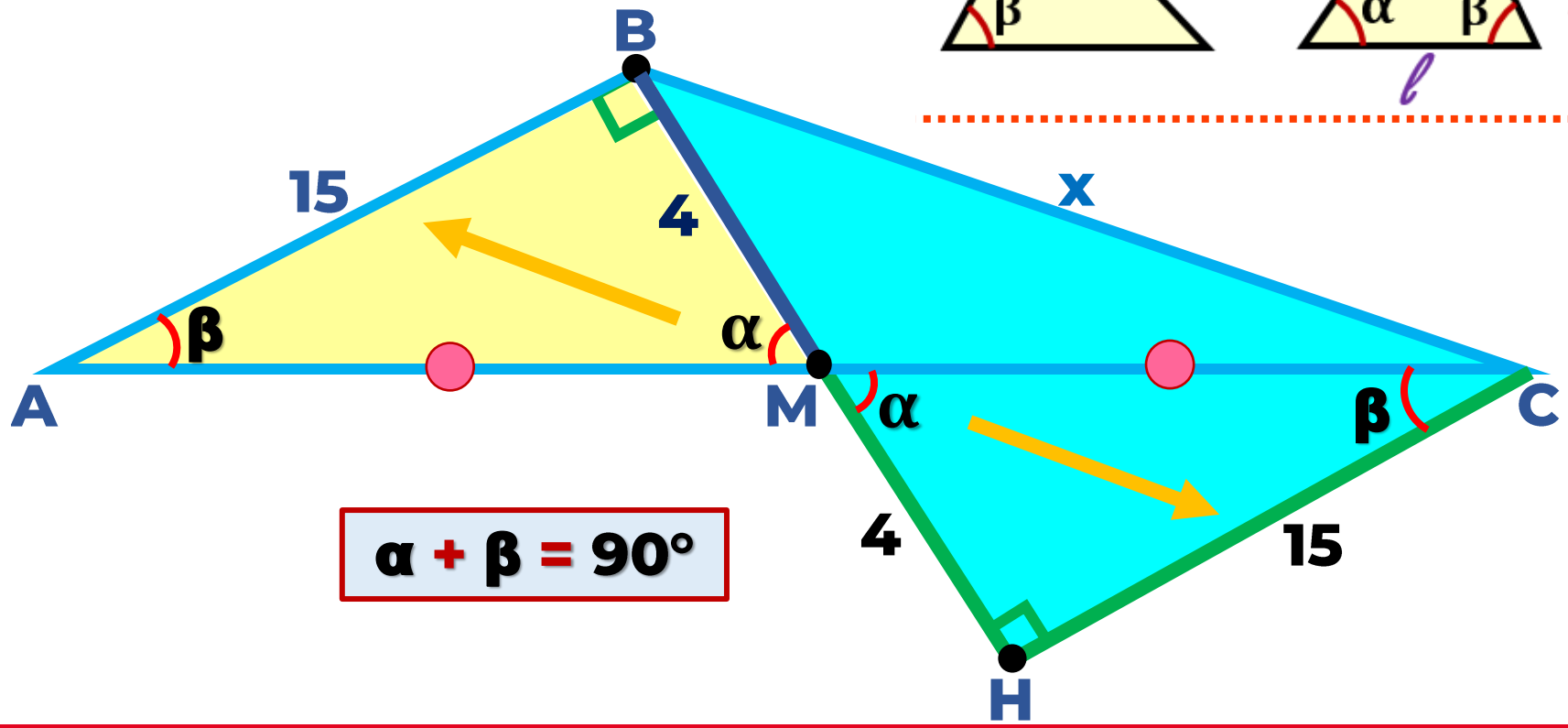
**A – L – A**




**Teorema de Pitágoras**




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




$\alpha + \beta = 90°$

$\triangle ABM \cong \triangle CHM$

(A-L-A)

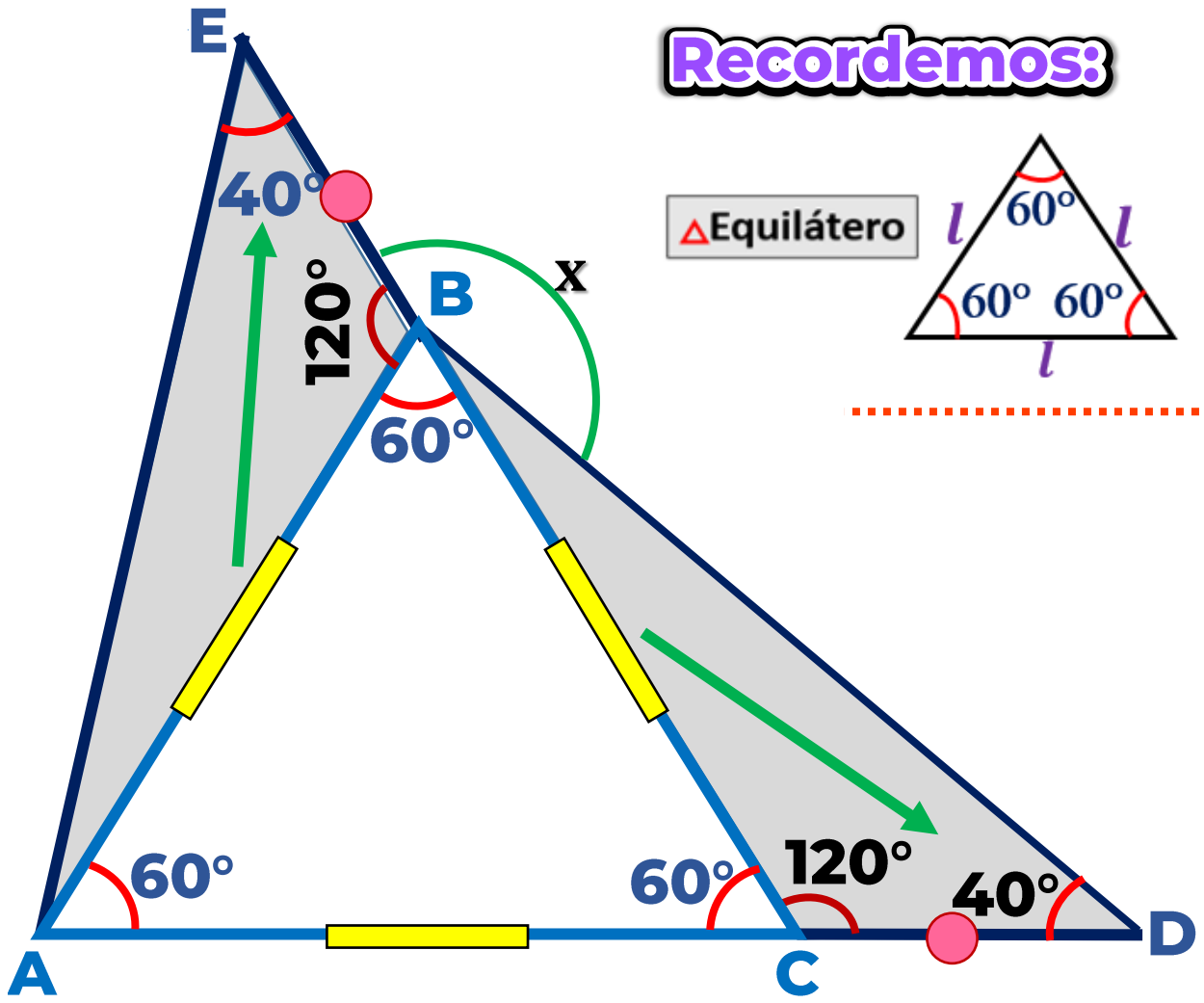
$\triangle BCH$: Pitágoras

$x^2 = 8^2 + 15^2$

$x^2 = 289$

$x = 17$

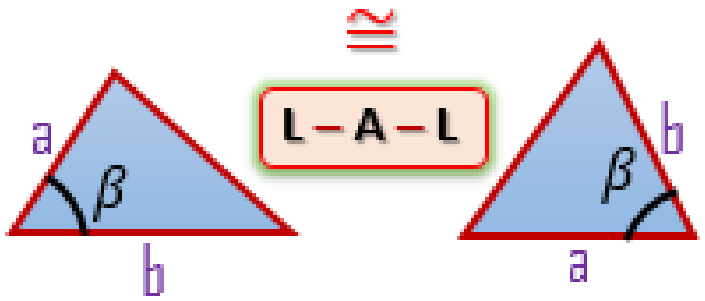
**9. En un triángulo equilátero ABC, se prolonga $\overline{AC}$ hasta D y $\overline{CB}$ hasta E, tal que EB = CD y m∢AEB = 40°. Halle m∢EBD.**

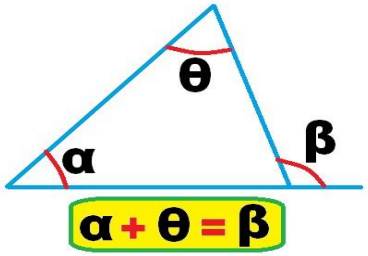



**Recordemos:**

△Equilátero




- △ABE ≅ △BCD

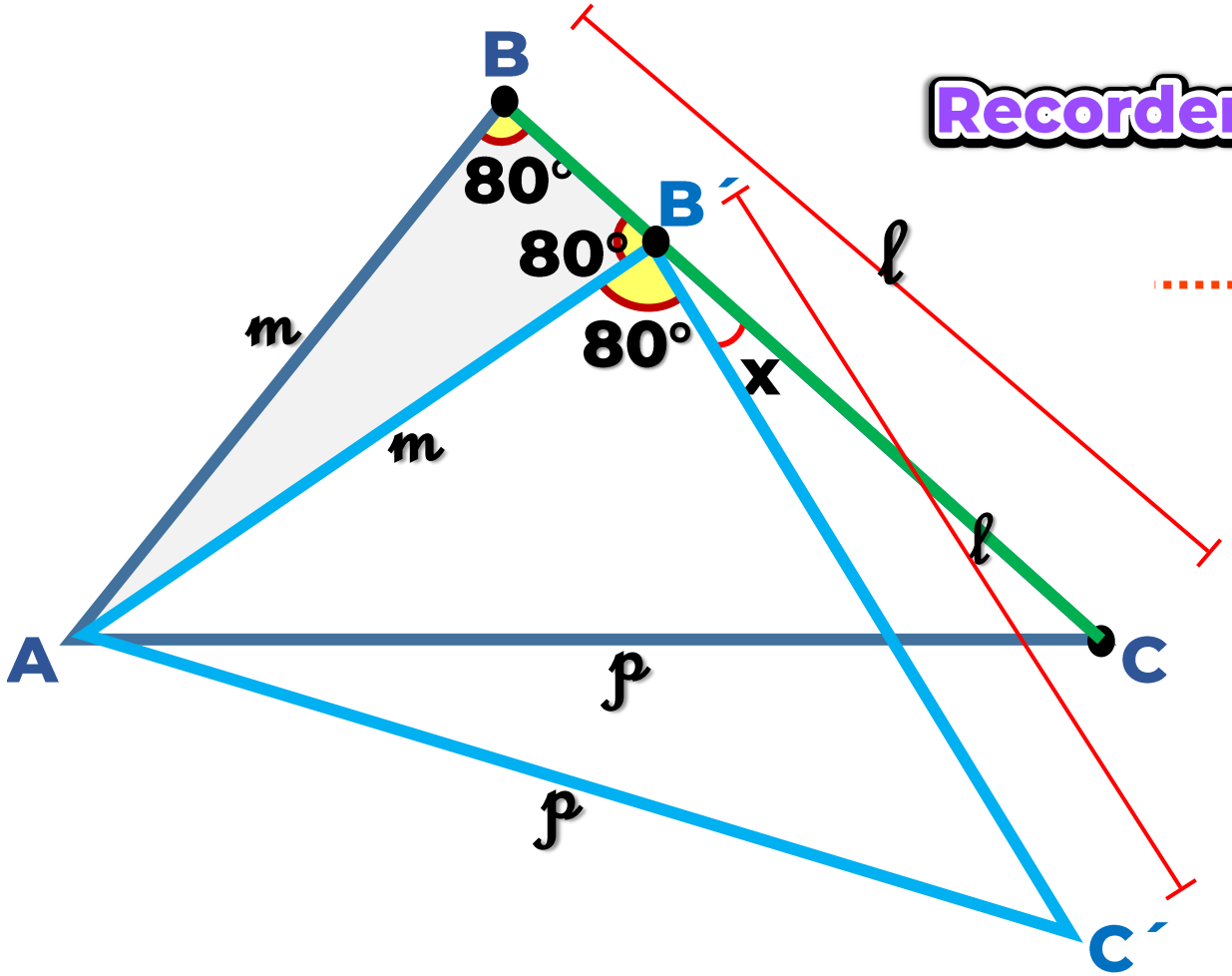
  **L-A-L**

- En el △BCD:

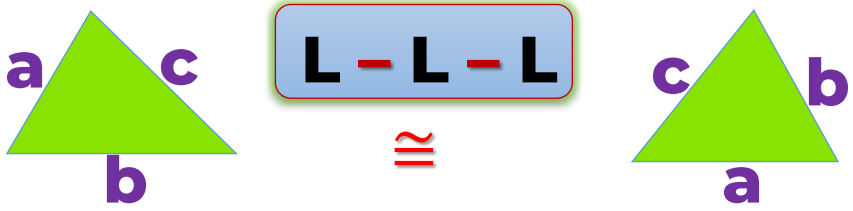
  x = 120° + 40°

  **x = 160°**

**10. Se tiene un triángulo escaleno ABC donde la m∢ABC= 80°. Luego se lo hace girar manteniendo fijo el vértice A hasta la posición AB'C' y B, B' y C son colineales. Halle m∢CB'C'.**




**Recordemos:**




△ABC ≅ △AB´C´

(L-L-L)

△ABB´ : isósceles

80° + 80° + x = 180°

160° + x = 180°

**x = 20°**