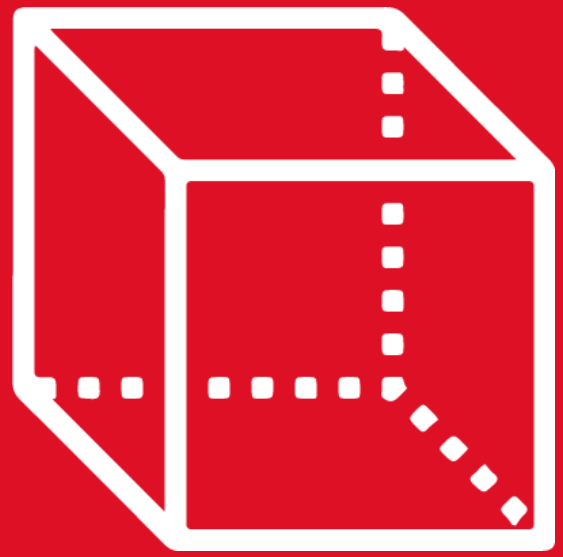
GEOMETRÍA

Tomo 2

5th
SECONDARY



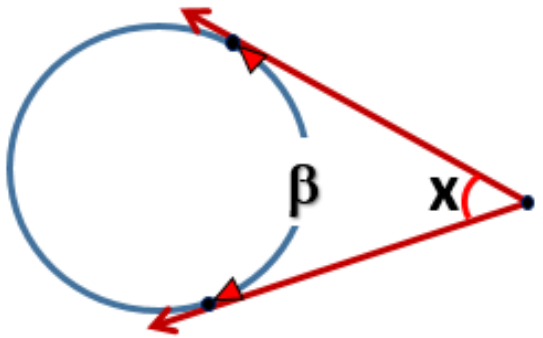
Retroalimentación

SACO OLIVEROS

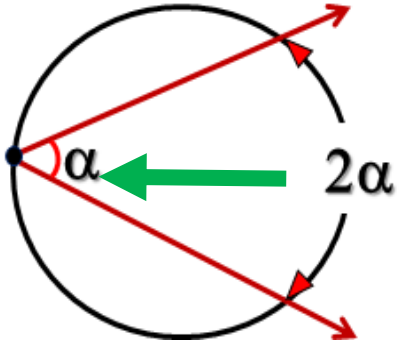
1. En la figura ABCD es un rombo, B y D son puntos de tangencia y la m<BCD = 30°. Halle el valor de x.

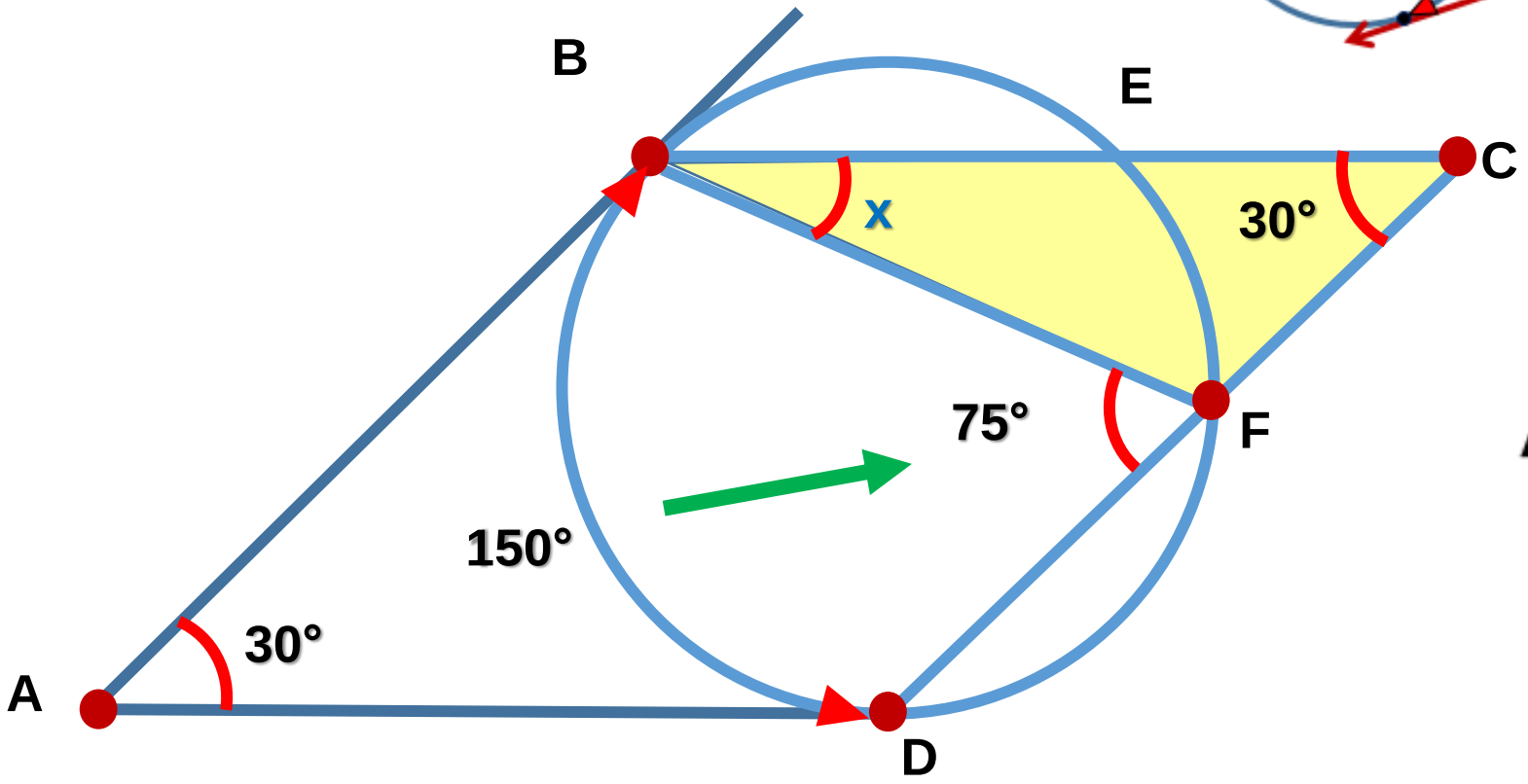
- **Ángulo exterior**

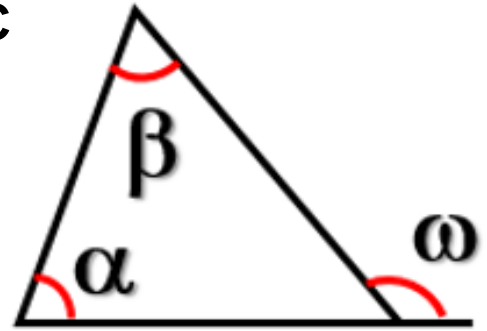
$$x + \beta = 180°$$



- **Ángulo inscrito**







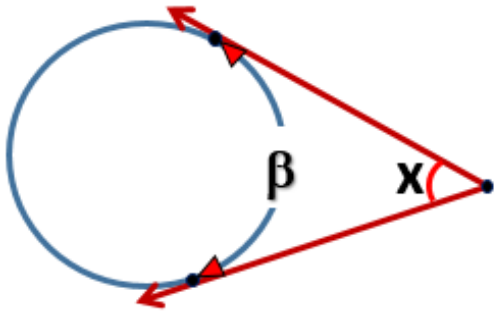
$$\omega = \alpha + \beta$$

$$x + 30° = 75°$$

$$x = 45°$$

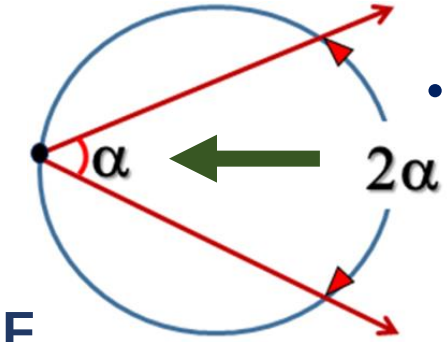
2. En la figura P, Q, B y C son puntos de tangencias. Halle la medida del arco QF.

- **Ángulo exterior**

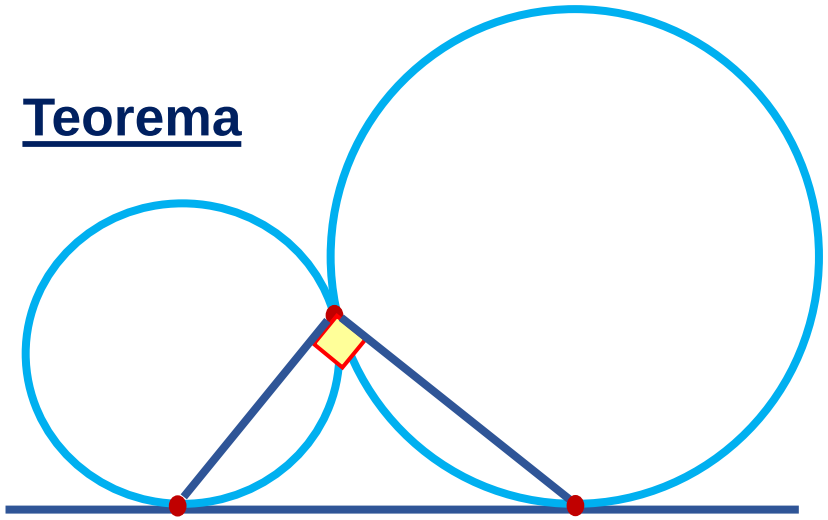


$x + \beta = 180°$

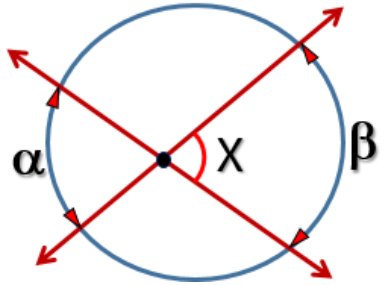
- **Ángulo inscrito**



- **Teorema**



Ángulo interior

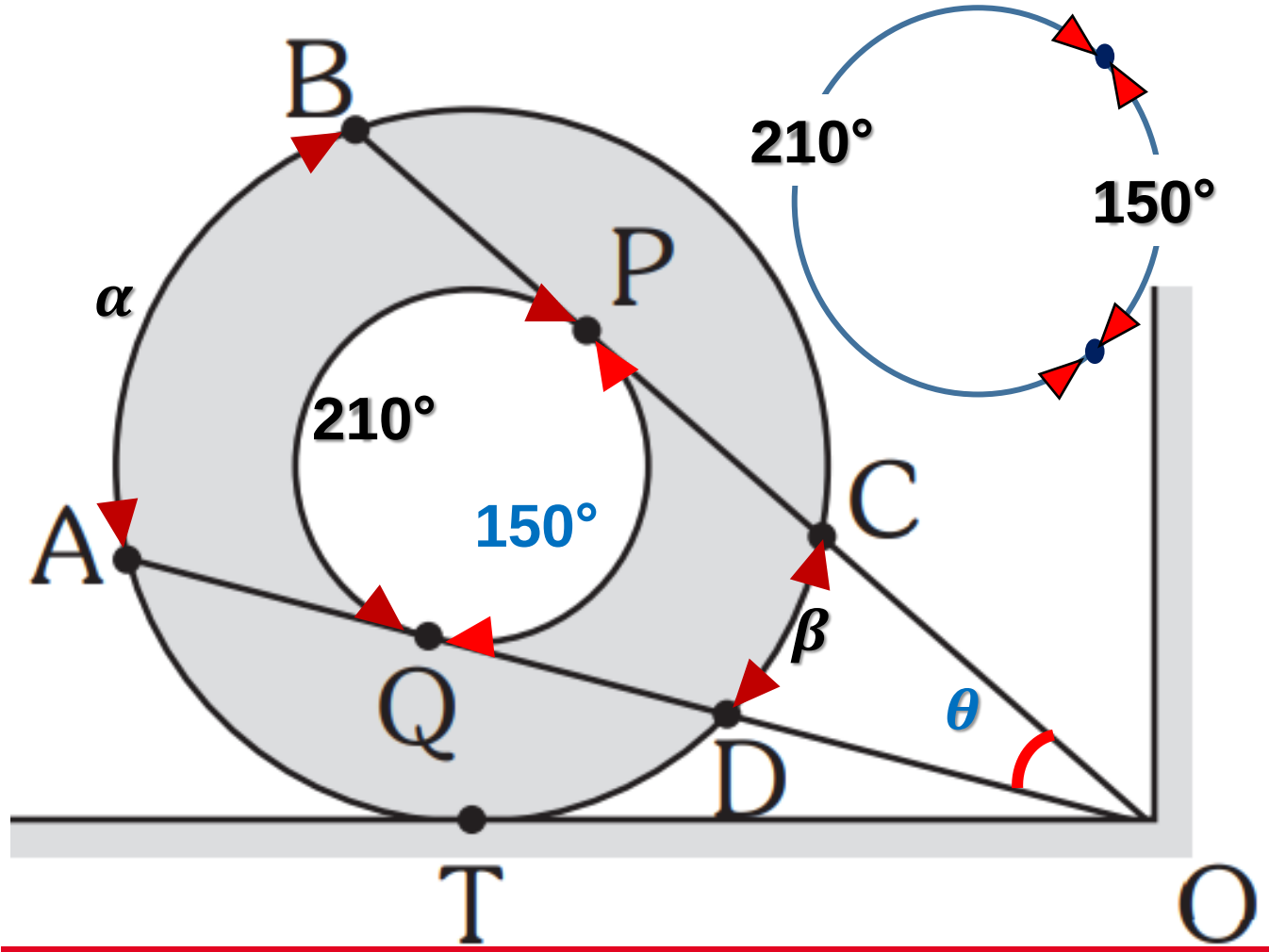


$$x = \frac{\alpha+\beta}{2}$$

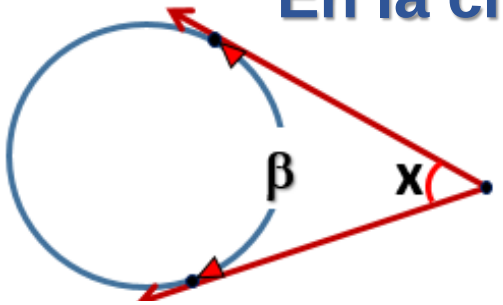
$$55° = \frac{x + 40°}{2}$$

$$x = 70°$$

3. La rueda de un automóvil esta sostenida por las cuerdas representadas por $\overline{OB}$ y $\overline{OA}$ como vemos en la figura. Si la medida del mayor arco PQ mide 210°. Halle el valor de la diferencia de las medidas de los arcos AB y CD.



En la circunferencia menor

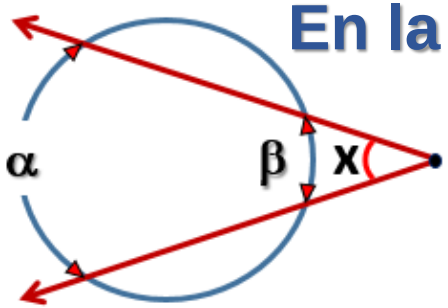


$$x + \beta = 180°$$

$$\theta + 150° = 180$$

$$\theta = 30°$$

En la circunferencia mayor



$$X = \frac{\alpha - \beta}{2}$$

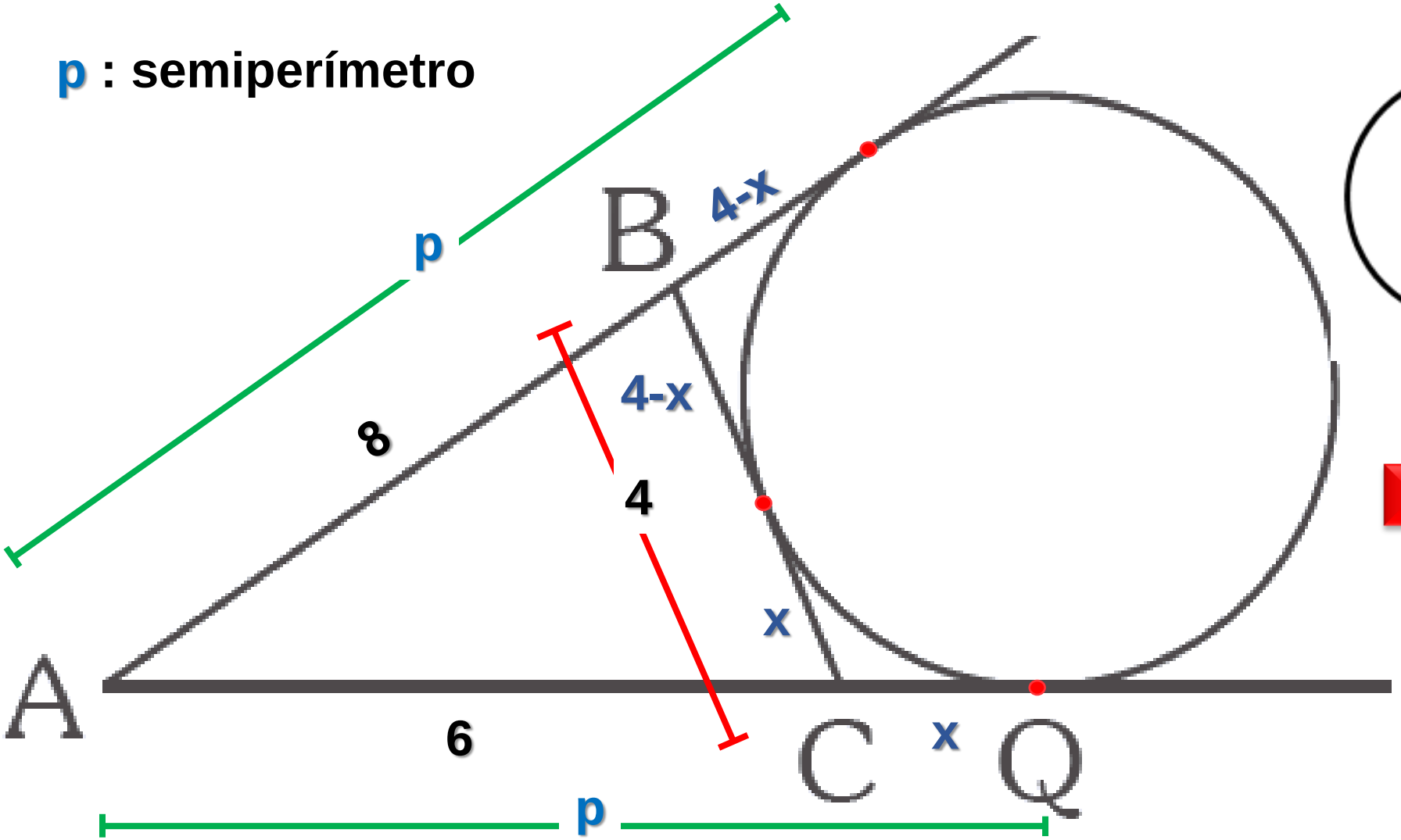
$$\theta = \frac{\alpha - \beta}{2}$$

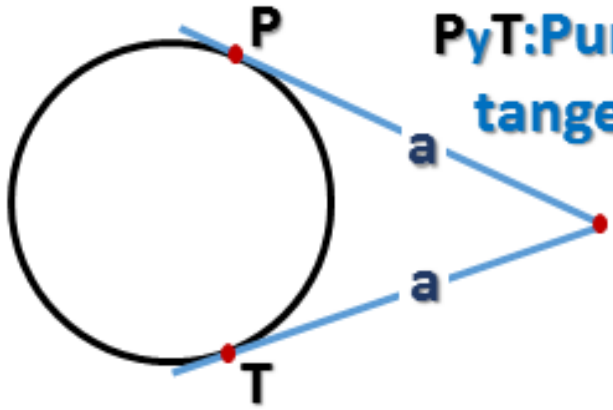
$$30° = \frac{\alpha - \beta}{2}$$

$$\alpha - \beta = 60°$$

4. Halle CQ si AB = 8 m, BC = 4 m y AC = 6 m.

p : semiperímetro





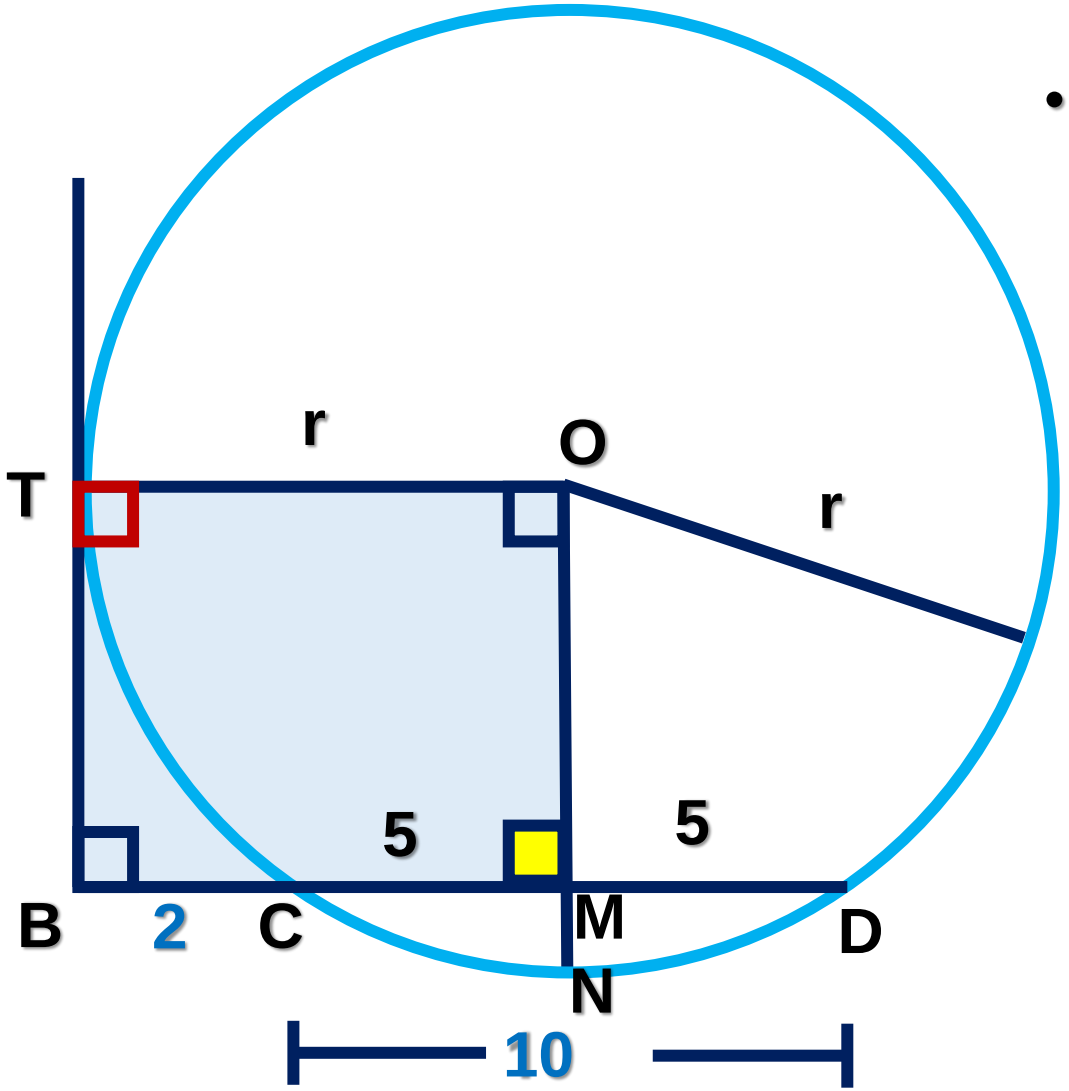
PyT:Punto de tangencia

$6 + x = 8 + 4 - x$

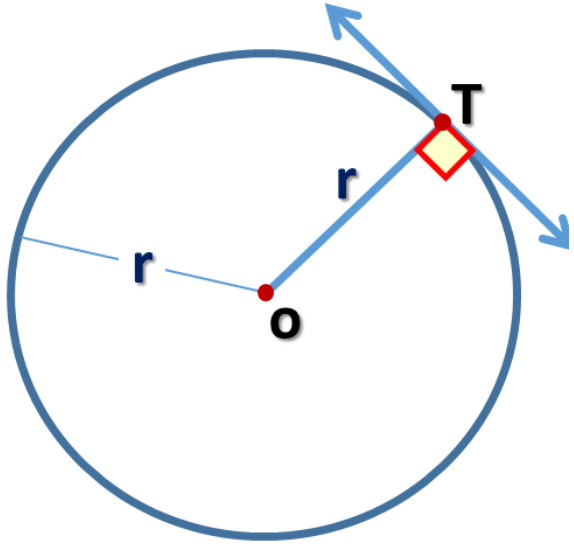
$2x = 6$

$x = 3$

5. Si O es centro, BC = 2, CD = 10 y T es punto de tangencia, halle el valor de r.



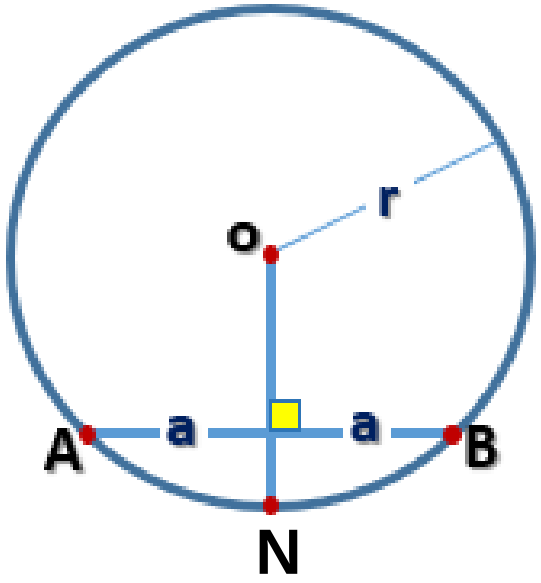
- Trazamos $\overline{OT}$



□ BTOM :

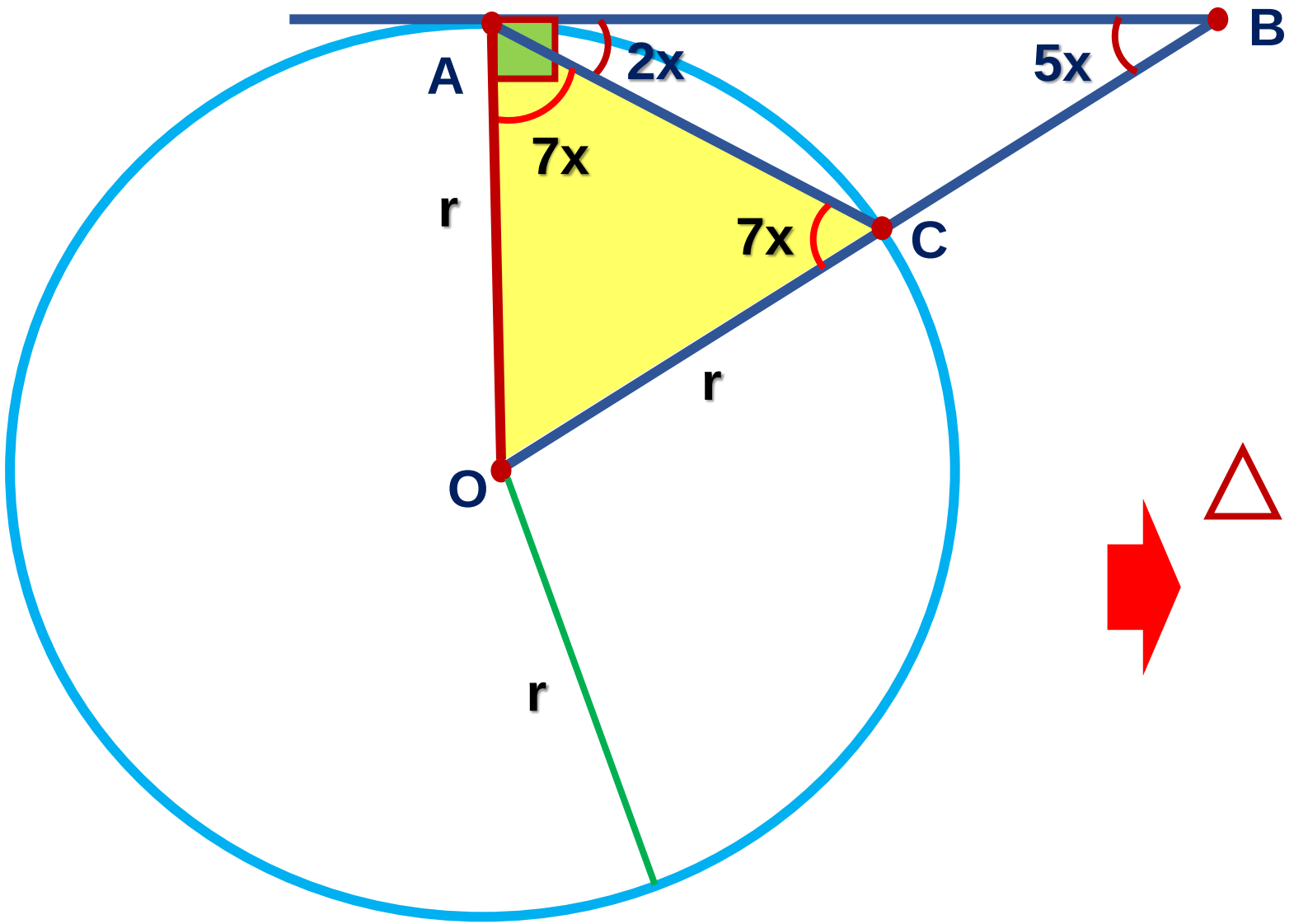
➡ r = 2 + 5

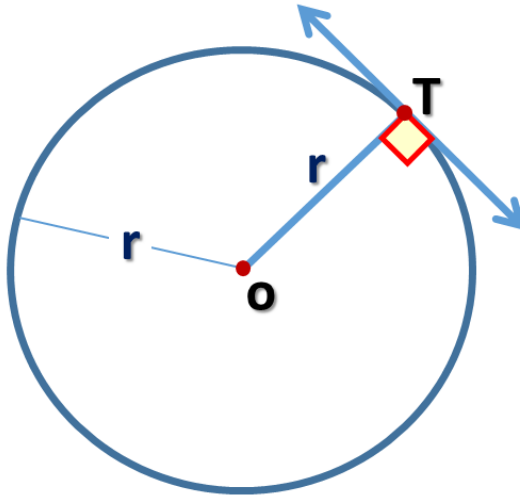
- Trazamos $\overline{ON} \perp \overline{CD}$



r = 7

6. Halle el valor de x si O es centro y A es punto de tangencia.





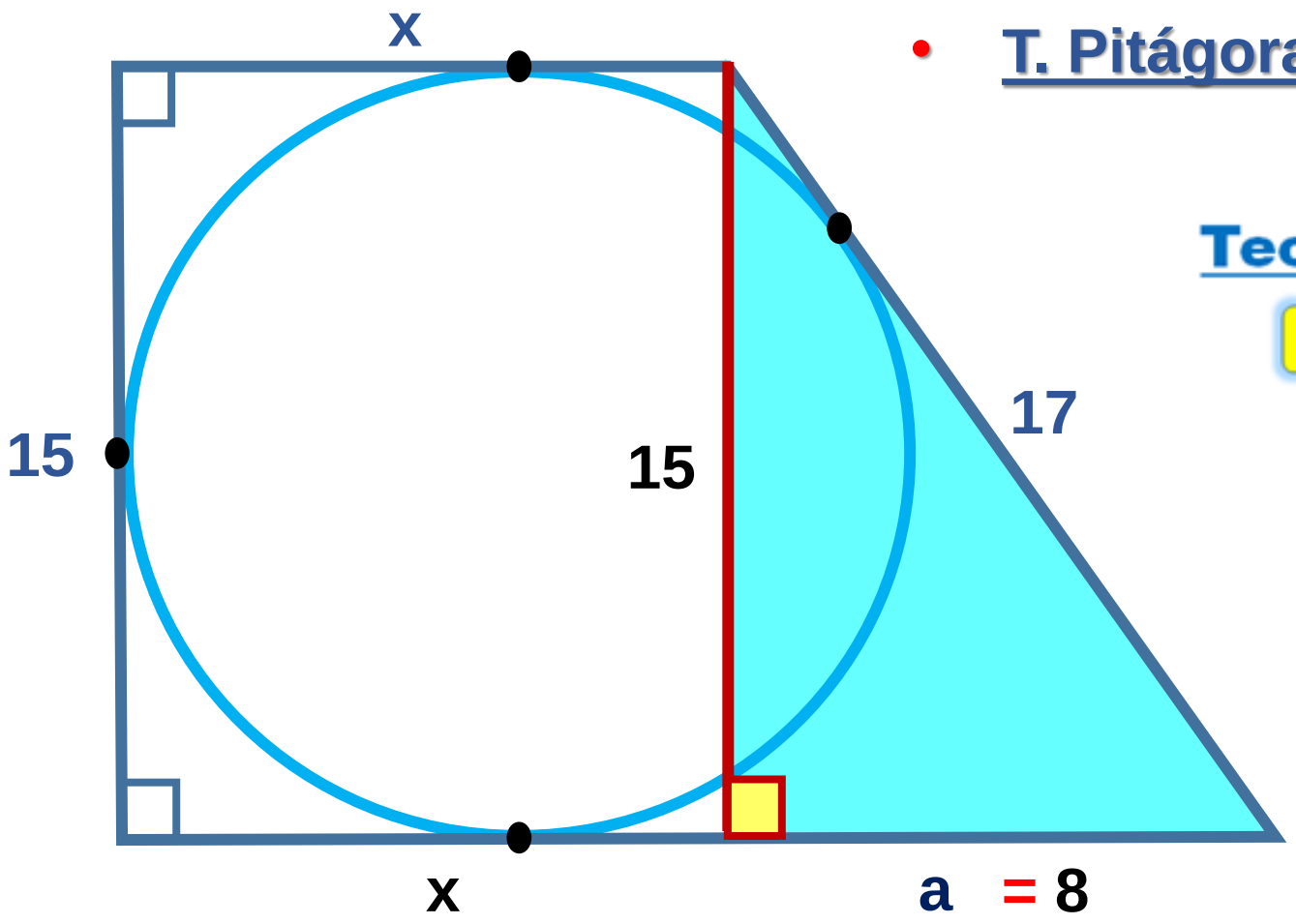
△ AOC : Isósceles

$7x + 2x = 90°$

$9x = 90°$

$x = 10°$

7. Se tiene un trapecio rectángulo circunscrito en la circunferencia mostradas. Las longitudes de sus lados no paralelos son 15 y 17, halle la longitud de su base menor.



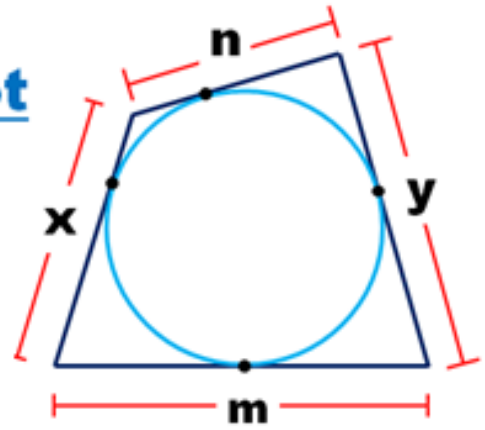
- **T. Pitágoras**

$$17^2 = a^2 + 15^2$$

$$a = 8$$

Teorema de Pitot

$$x + y = m + n$$

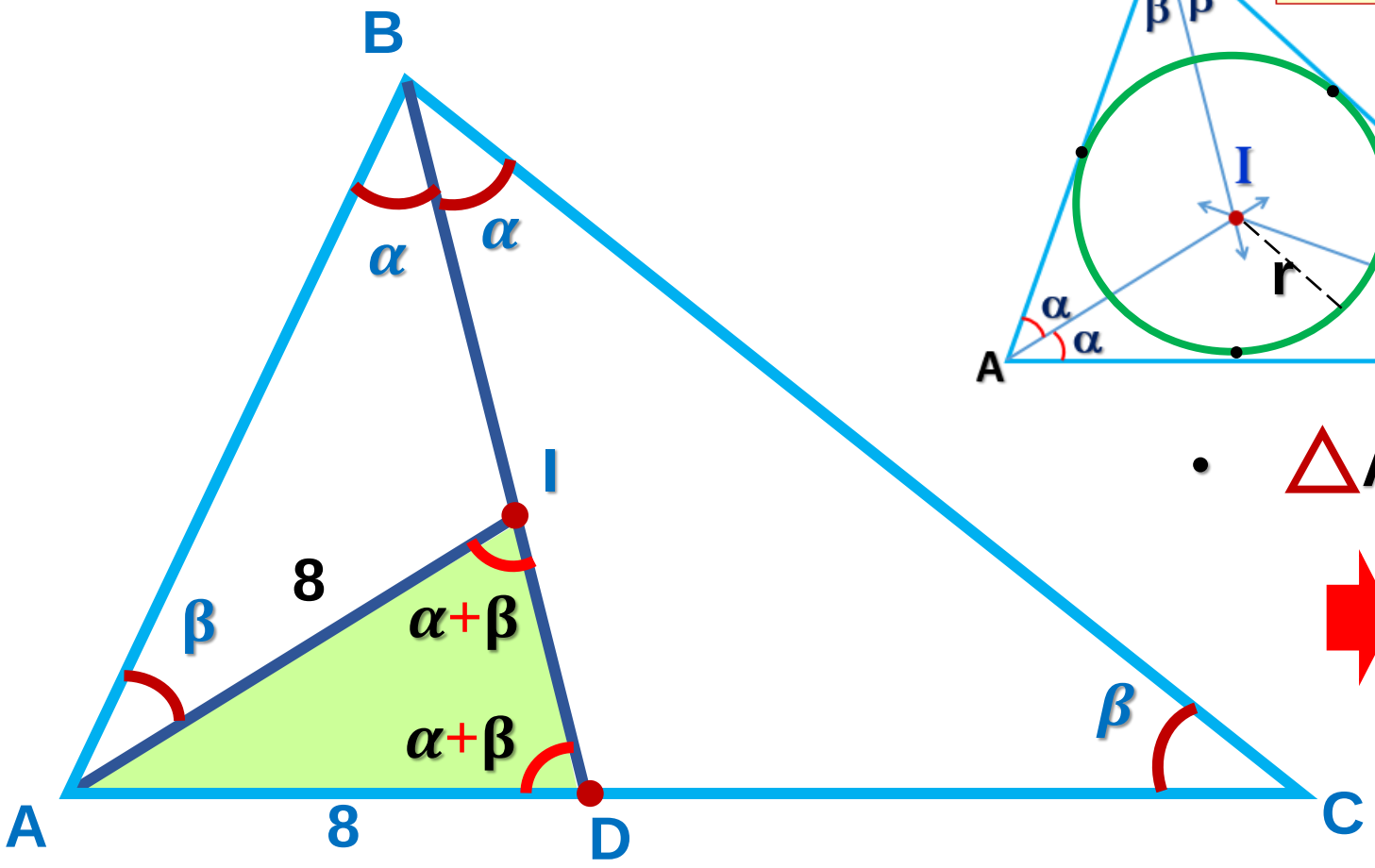


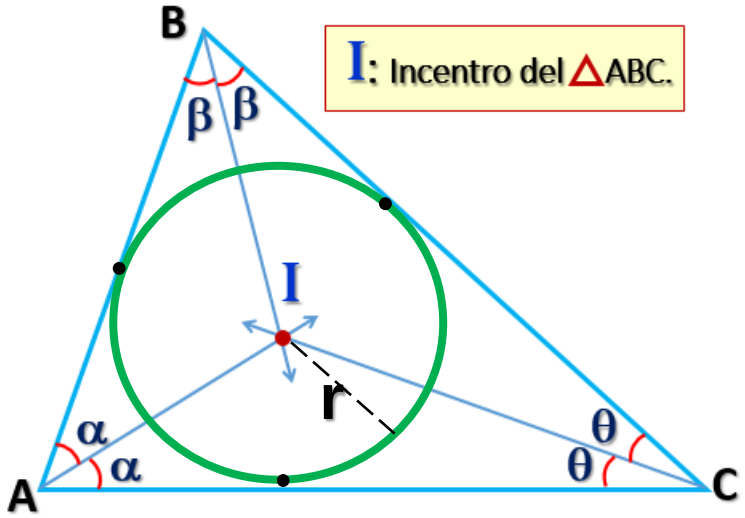
$$x + (x + 8) = 15 + 17$$

$$2x = 24$$

$$x = 12$$

8. En un triángulo ABC de incentro I, se traza la bisectriz interior $\overline{BD}$. Halle AI, si AD = 8 y m<BAI = m<BCD.

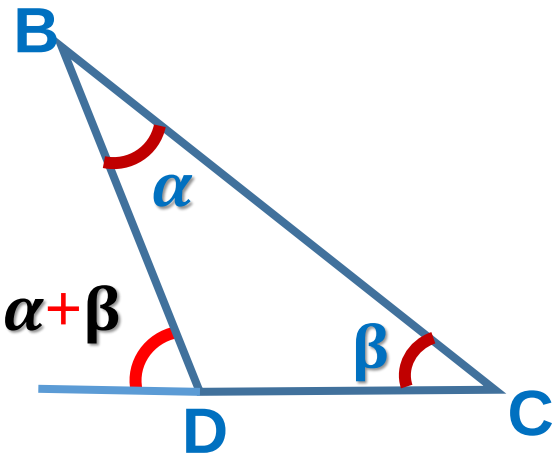


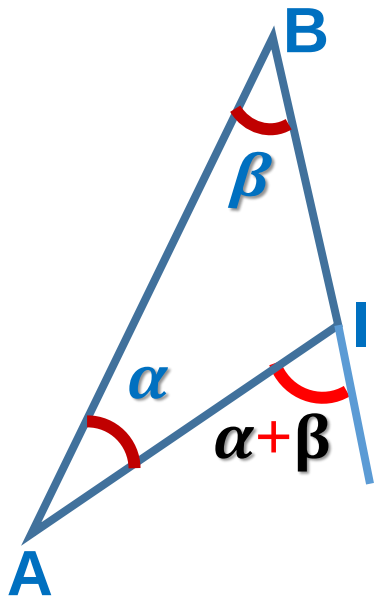


- △AID: Isósceles

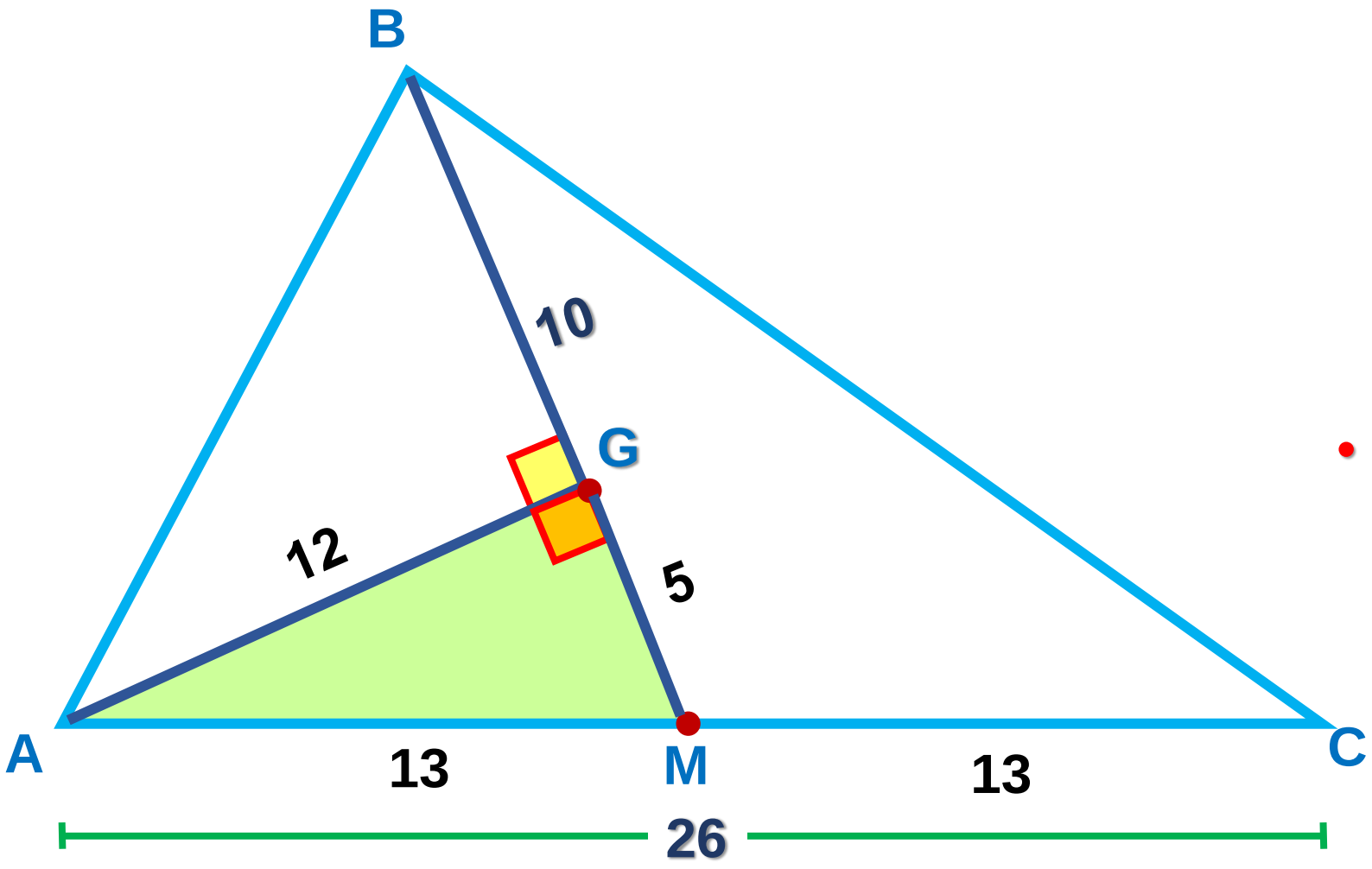
➡ AI = AD = 8

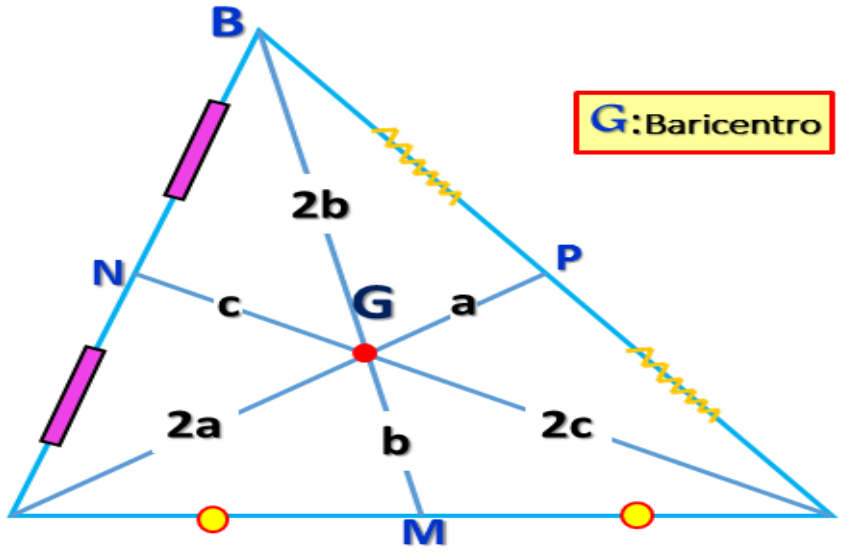
AI = 8





9. Si G es baricentro del triángulo ABC, BG = 10 y AC = 26. Halle AG.





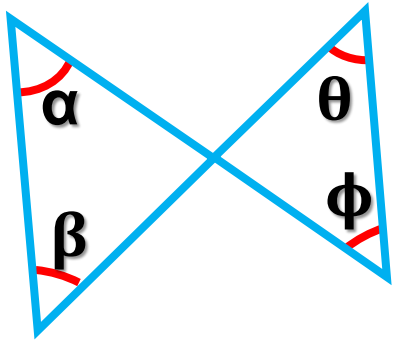
- **T. Pitágoras**

$\triangle AGM$: $13^2 = (AG)^2 + 5^2$

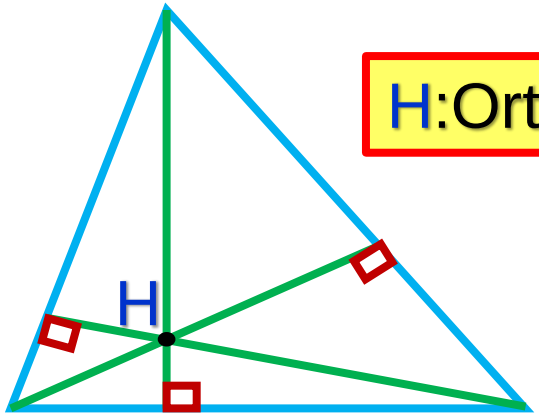
$144 = (AG)^2$

AG = 12

10. Halle el valor de x.



$\alpha + \beta = \theta + \phi$



H:Ortocentro

H es ortocentro del Δ ABC

$x + 90° = 40° + 90°$

$x = 40$