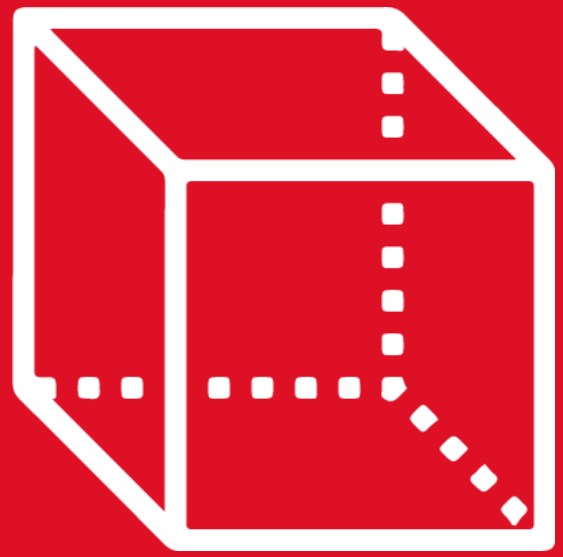
GEOMETRY

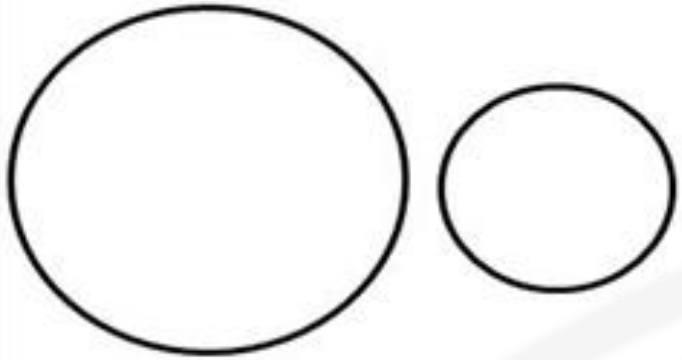
Capítulo 1



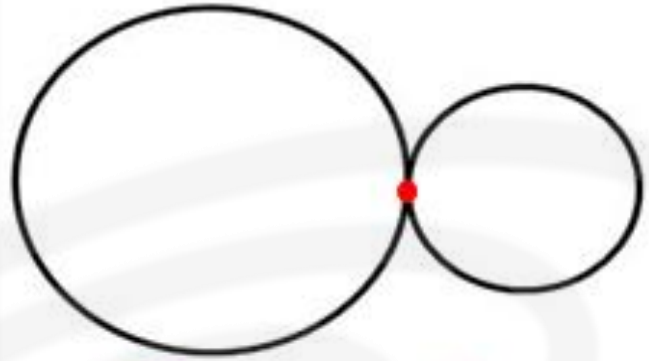
5th
SECONDARY

LÍNEAS ASOCIADAS A LA CIRCUNFERENCIA

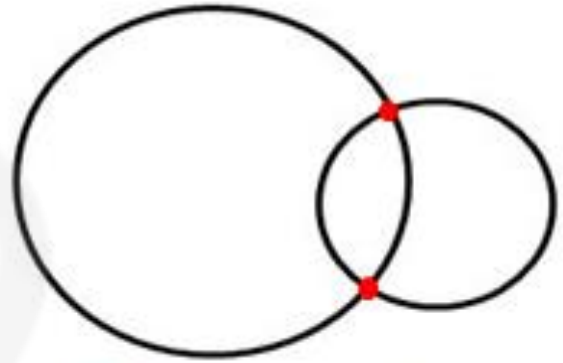
SACO OLIVEROS



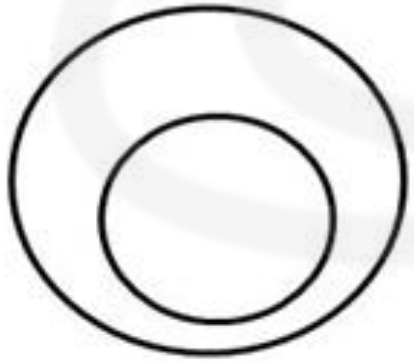
Exteriores



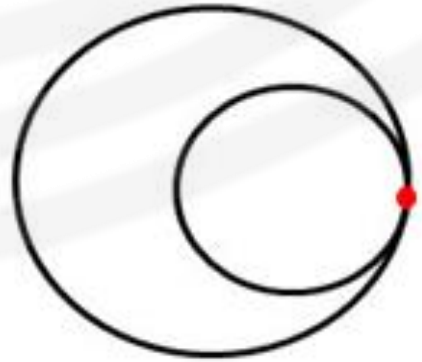
Tangentes exteriores



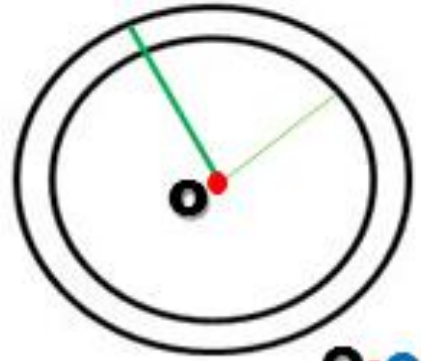
Secantes



Interiores



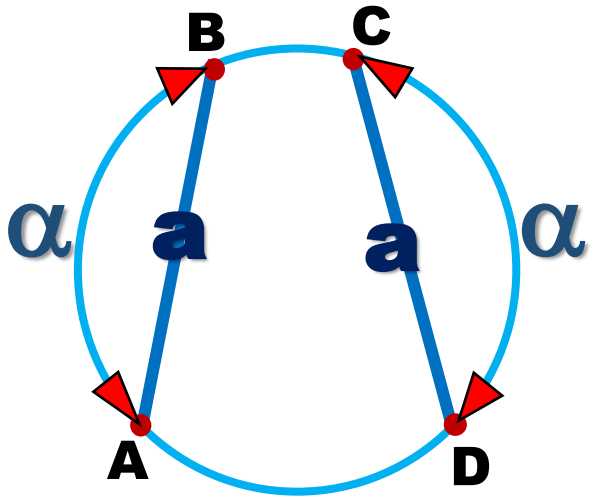
Tangentes interiores

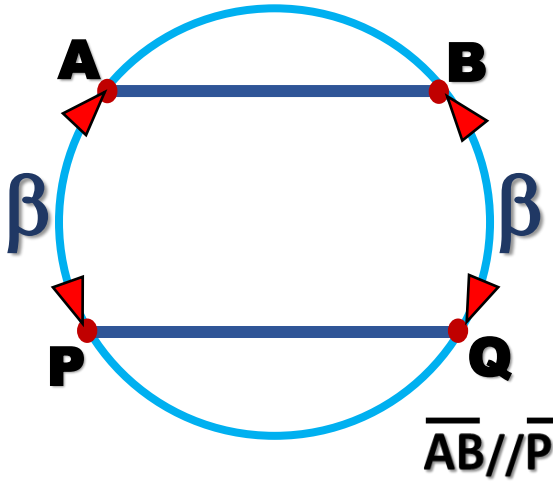


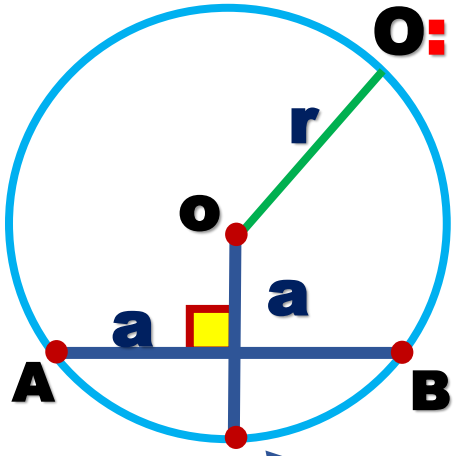
O:Centro

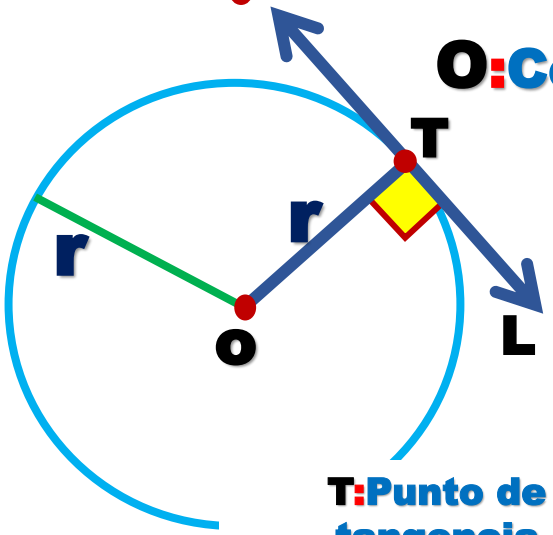
Concéntricas

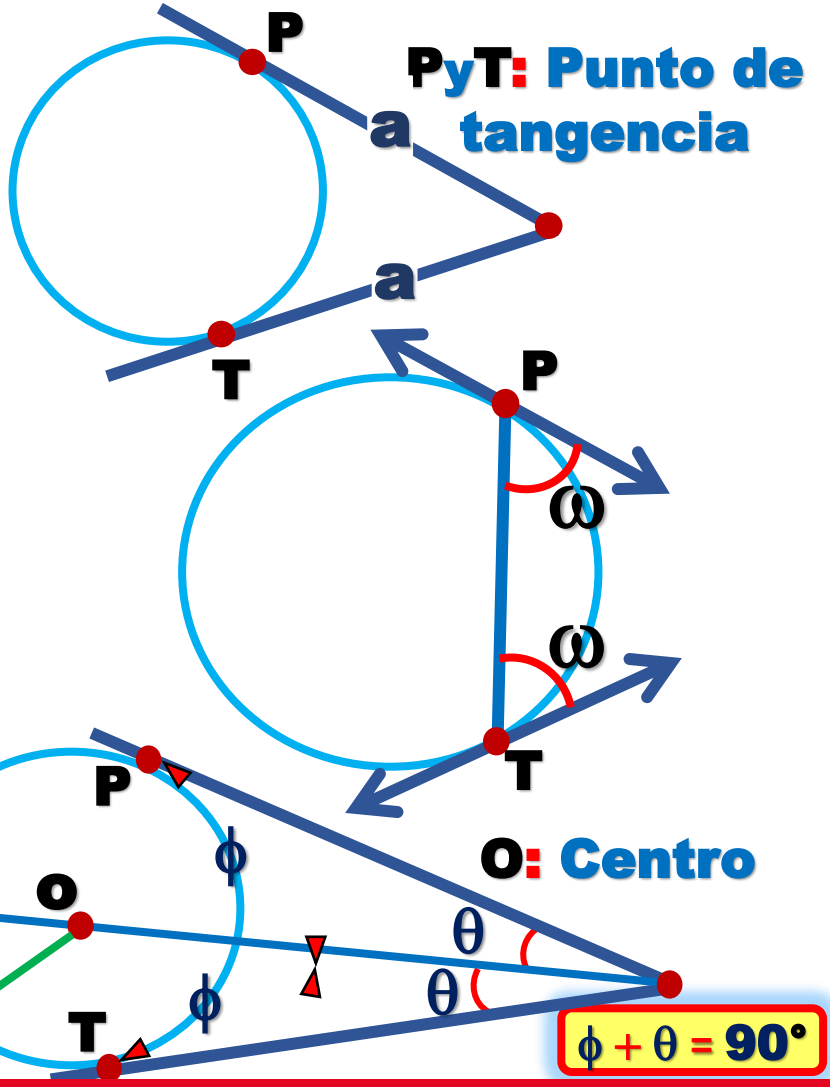
LÍNEAS ASOCIADAS A LA CIRCUNFERENCIA

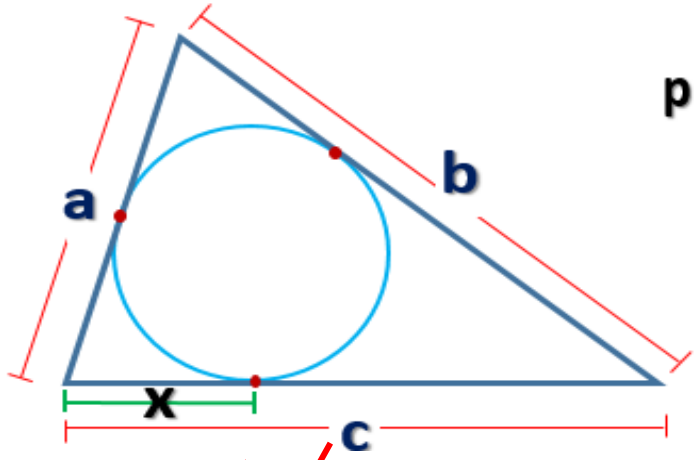








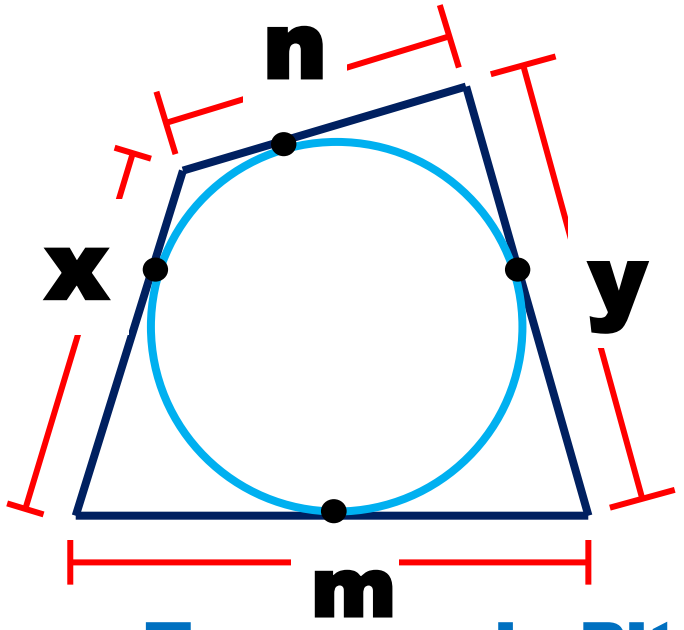




p : Semiperímetro

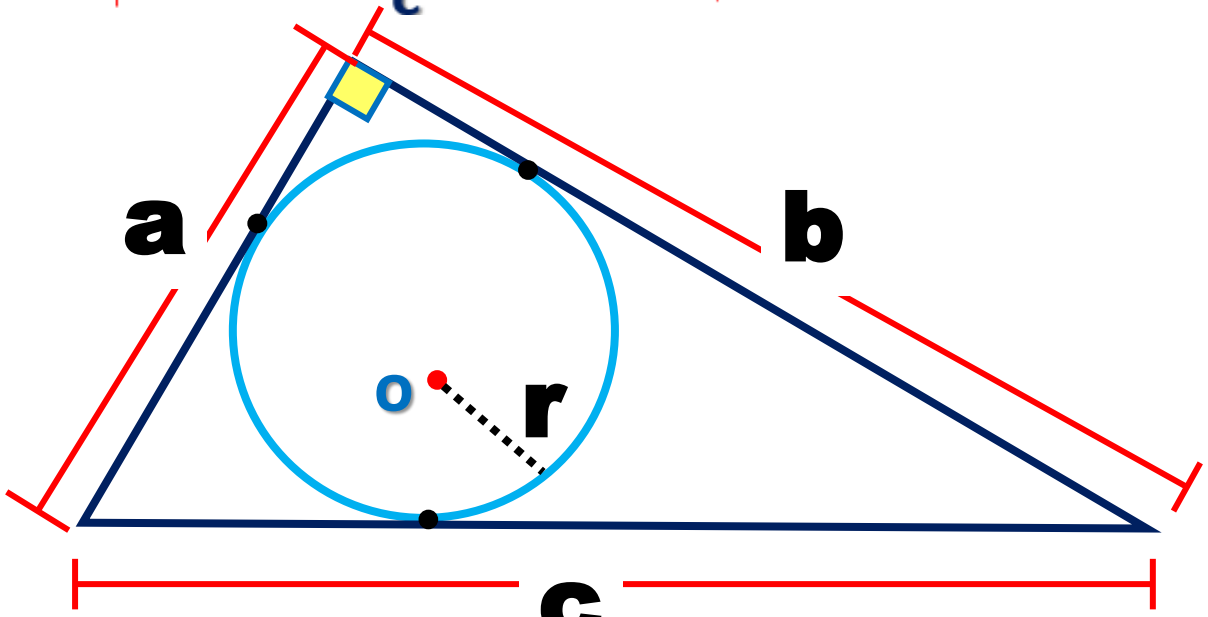
$$p = \frac{a+b+c}{2}$$

$$x = p - b$$



Teorema de Pitot

$$x + y = m + n$$

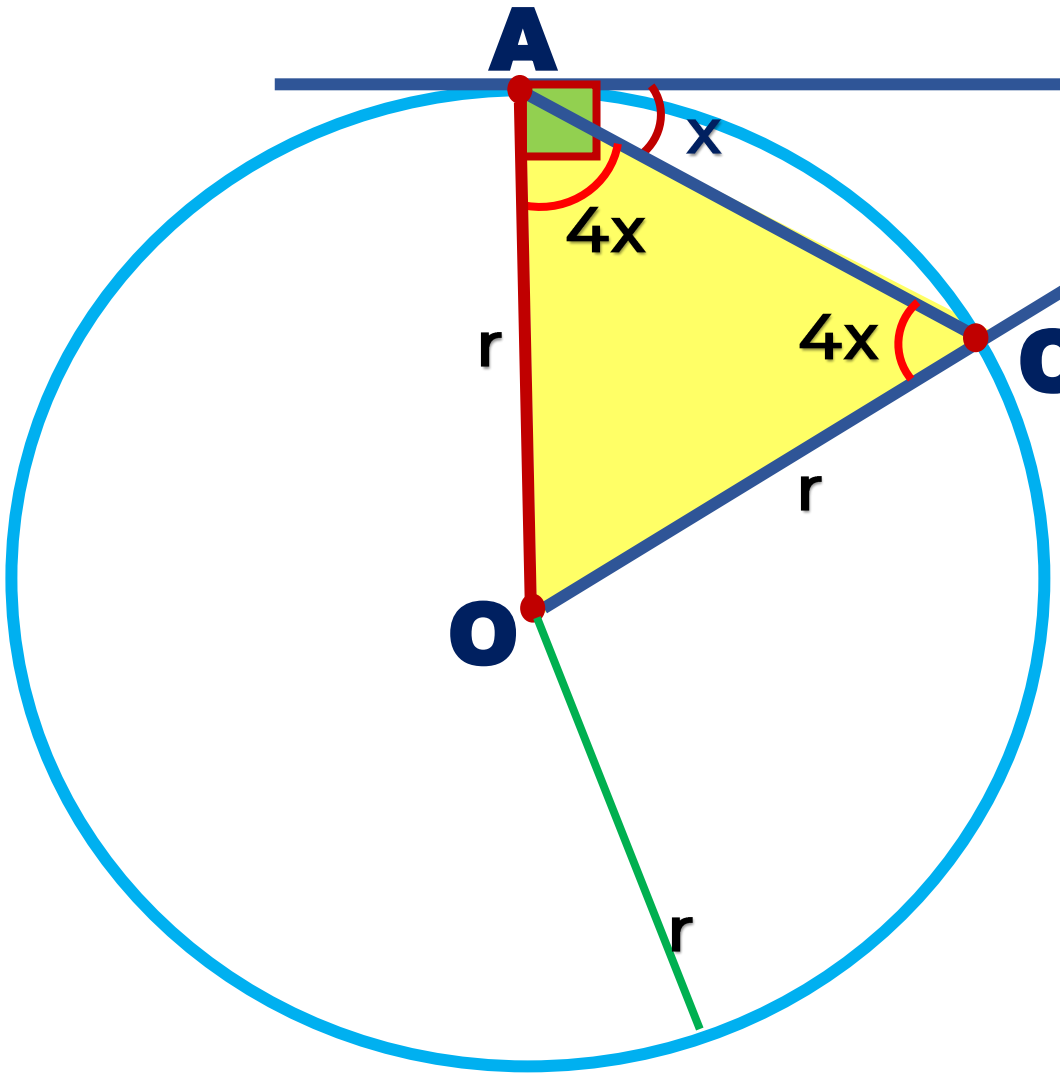


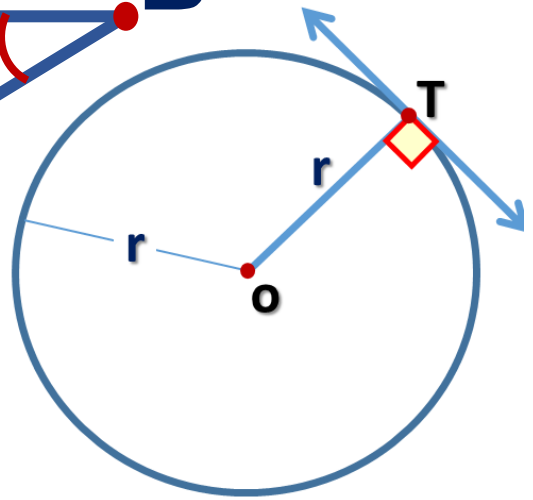
r: medida del inradio

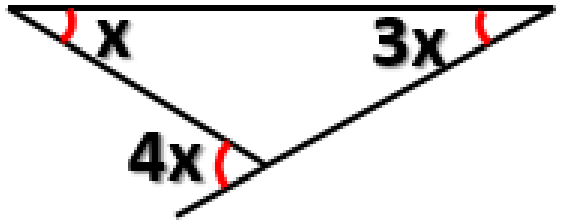
Teorema de Poncelet

$$a + b = c + 2r$$

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







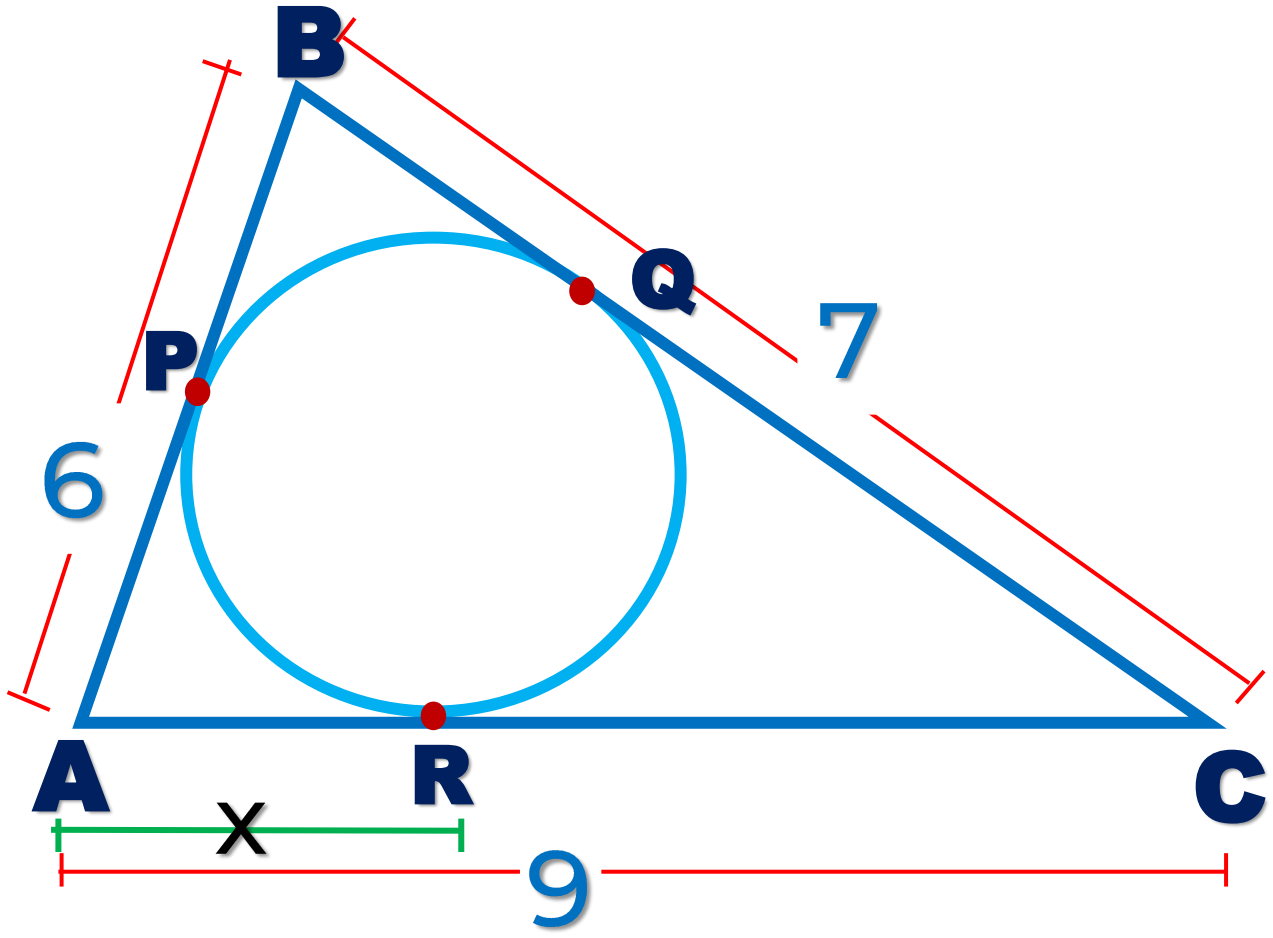
△ **AOC**: Isósceles

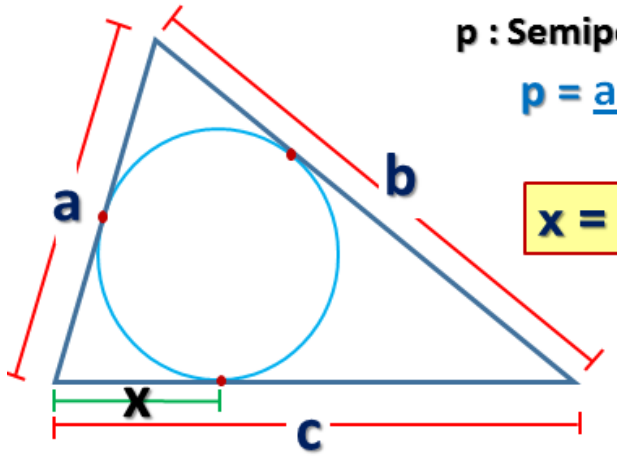
$4x + x = 90°$

$5x = 90°$

$x = 18°$

2. En un△ ABC, donde AB = 6, BC = 7 y AC = 9, la circunferencia inscrita es tangente a AB, BC y AC en los puntos P, Q y R, respectivamente. Halle AR.





p : Semiperímetro

$$p = \frac{a + b + c}{2}$$

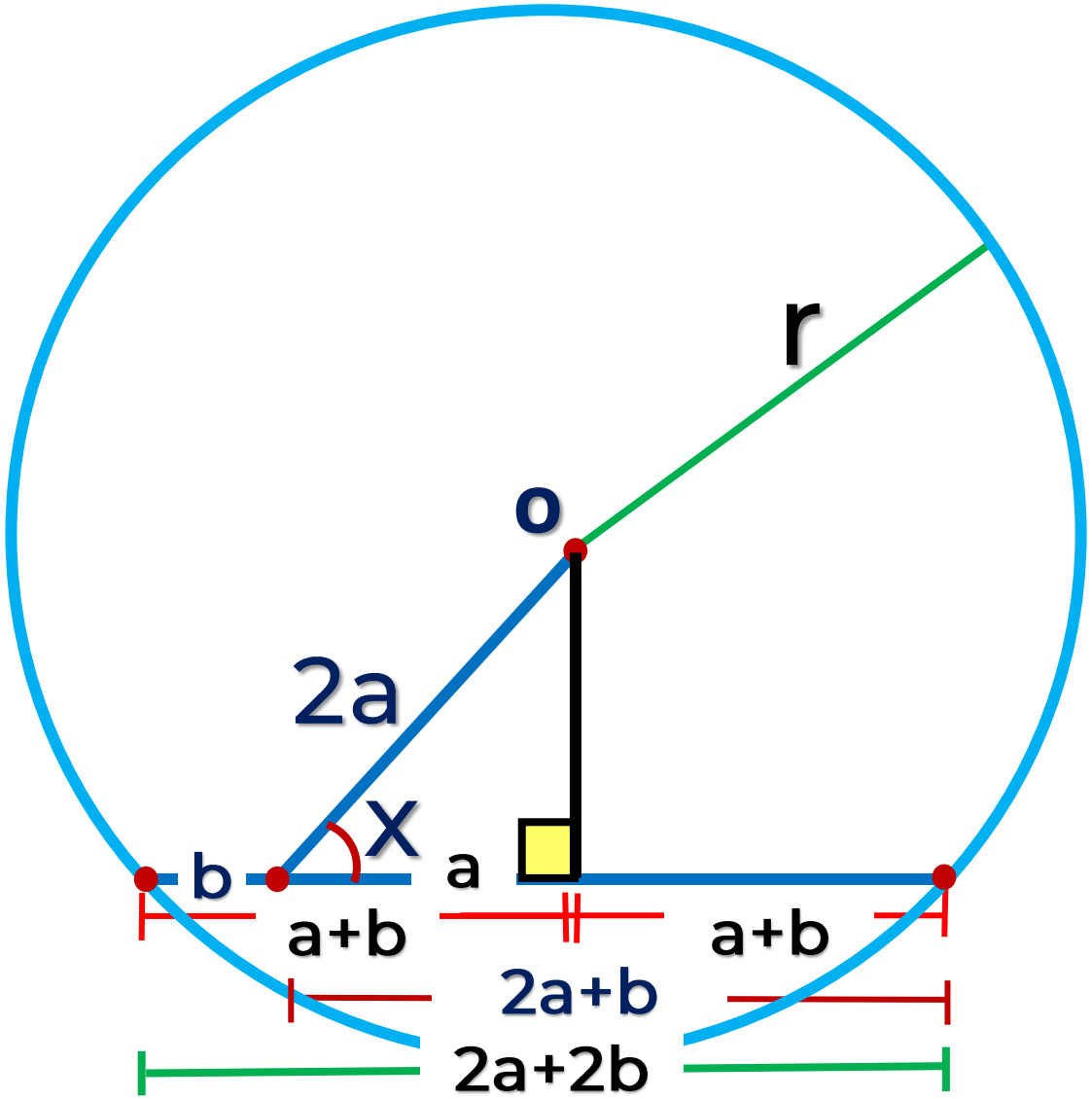
$$x = p - b$$

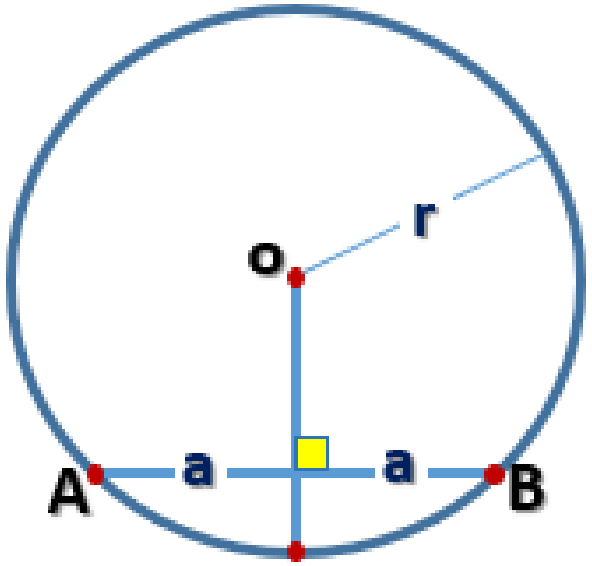
- $p = \frac{6 + 7 + 9}{2}$ → $p = 11$
- $x = p - b$ (Reemplazando)

$$x = 11 - 7$$

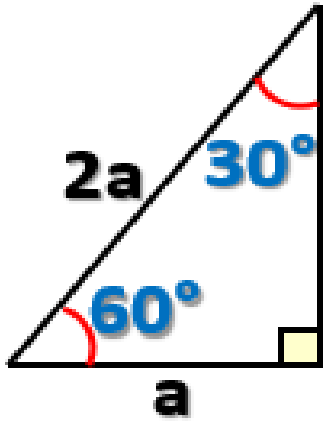
$$x = 4$$

3. Halle el valor de x , si O es centro.



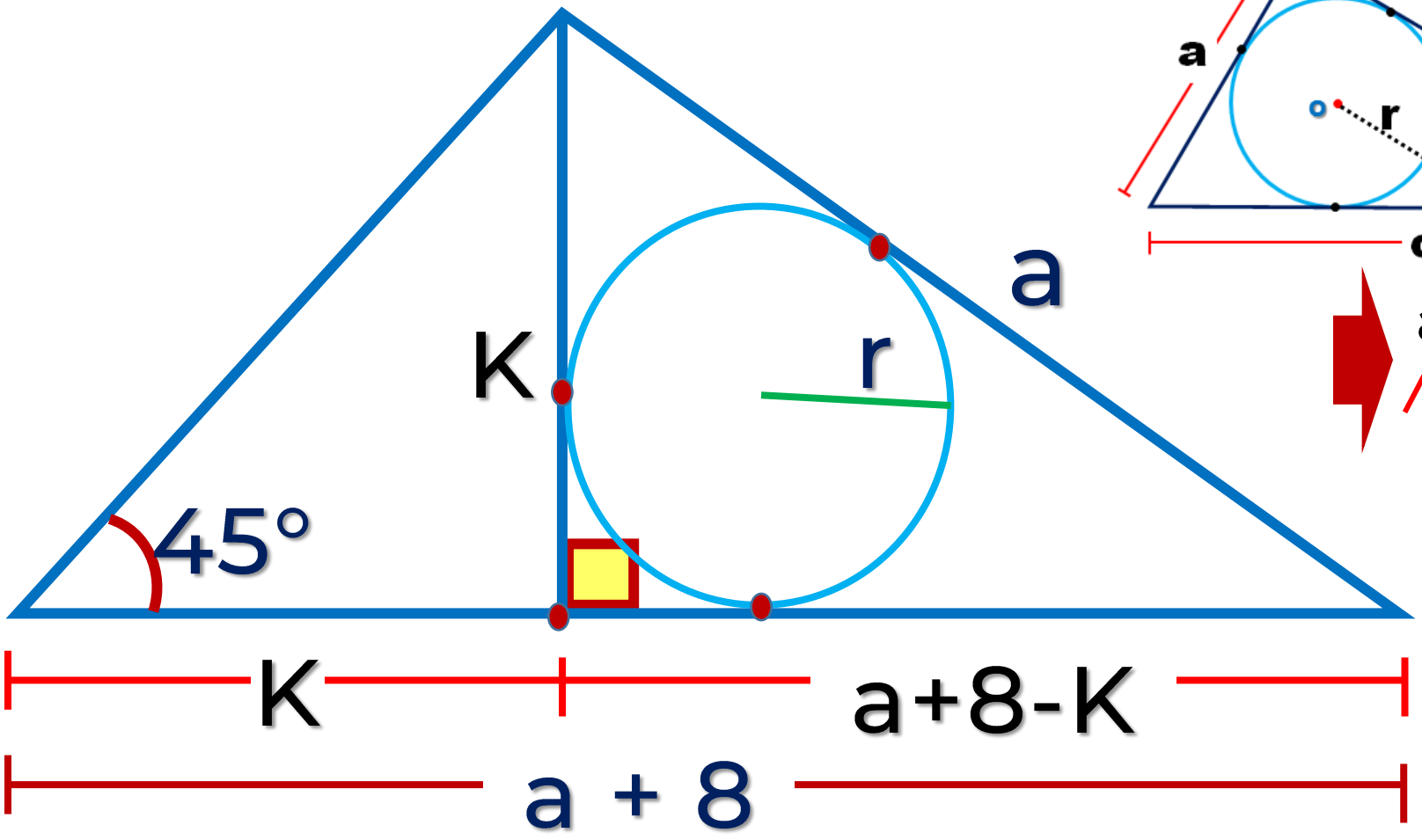


- Notable (30° y 60°)



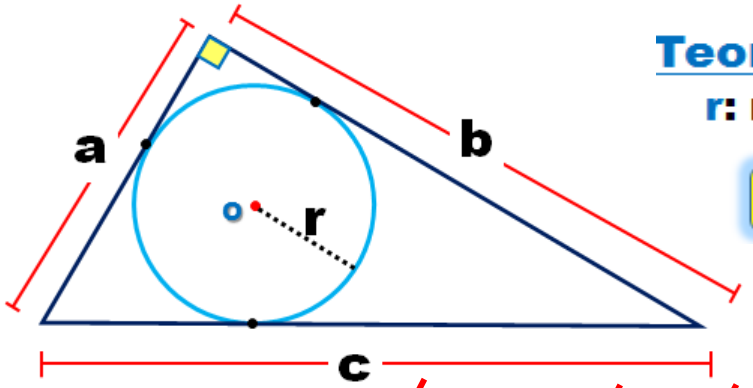
$x = 60°$

4. Halle la longitud del radio de la circunferencia inscrita.



Teorema de Poncelet

r: medida del inradio



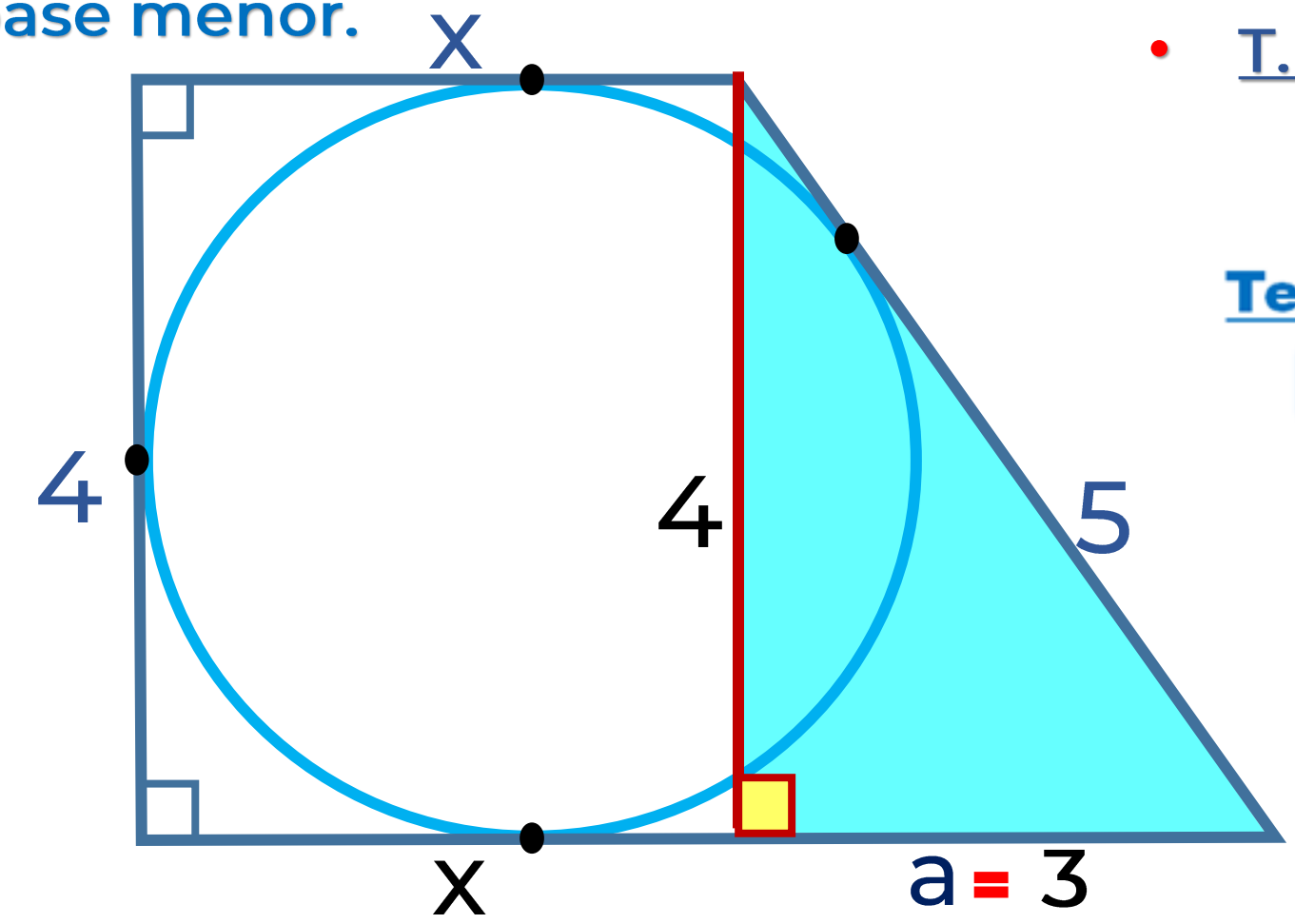
a + b = c + 2r

$a + 8 - K + K = a + 2r$

$8 = 2r$

r = 4

5. Se tiene un trapecio rectángulo circunscrito a una circunferencia. Si las longitudes de sus lados no paralelos son 4 y 5, halle la longitud de su base menor.

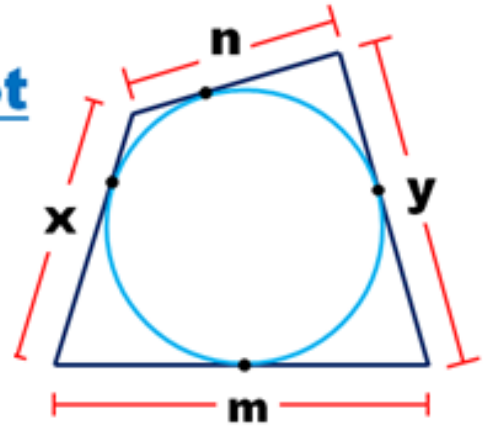


- T. Pitágoras $5^2 = a^2 + 4^2$

$a = 3$

Teorema de Pitot

$x + y = m + n$

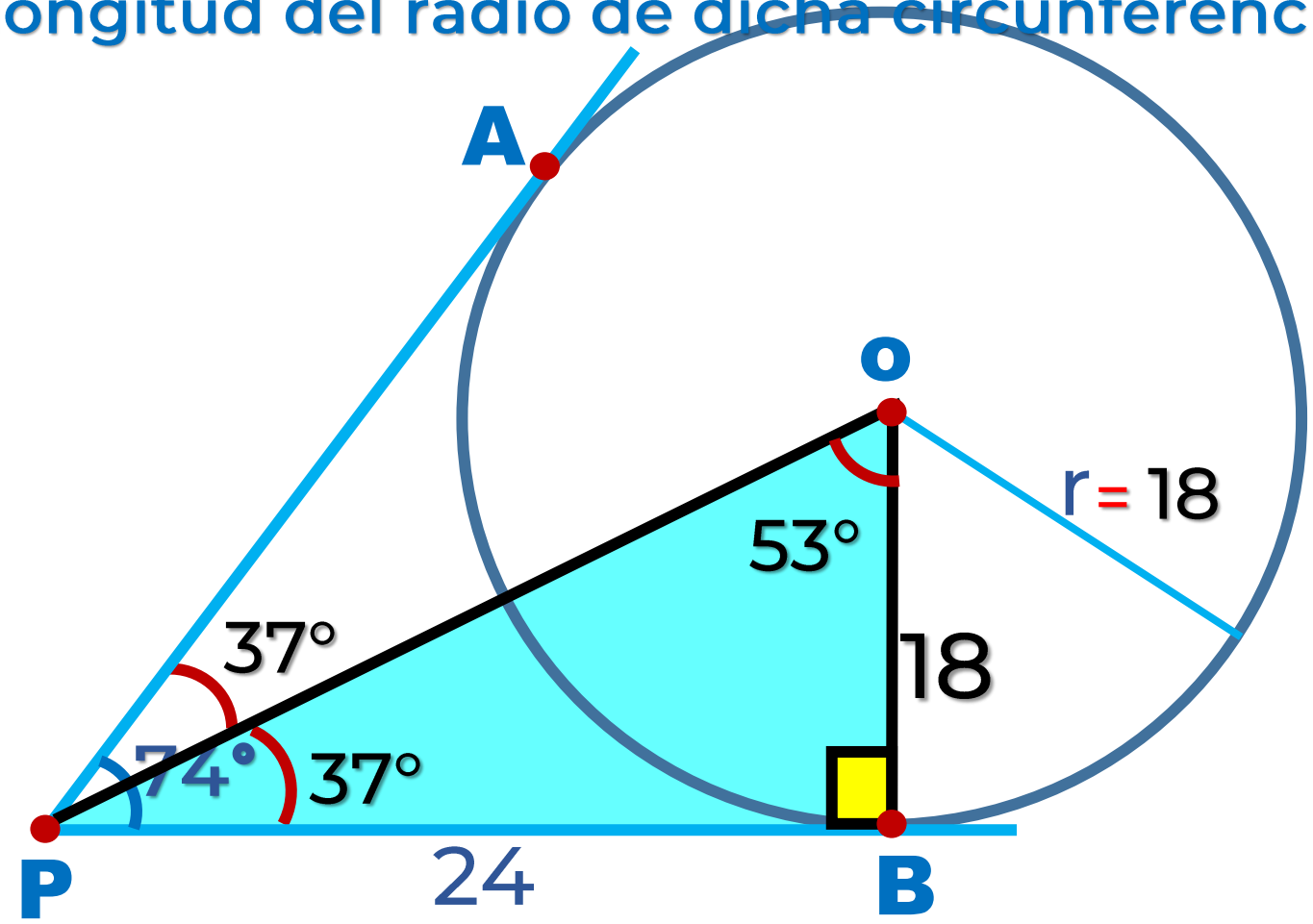


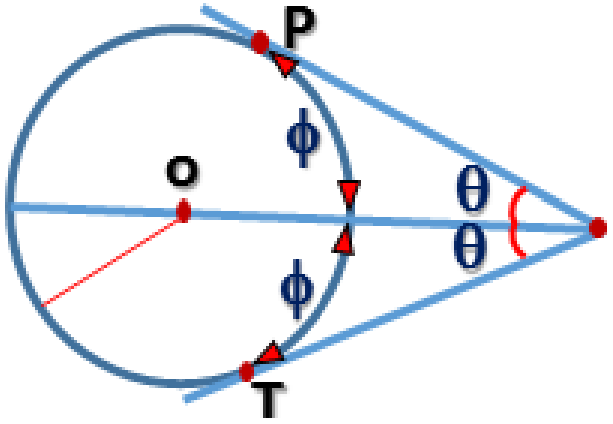
$x + (x + 3) = 4 + 5$

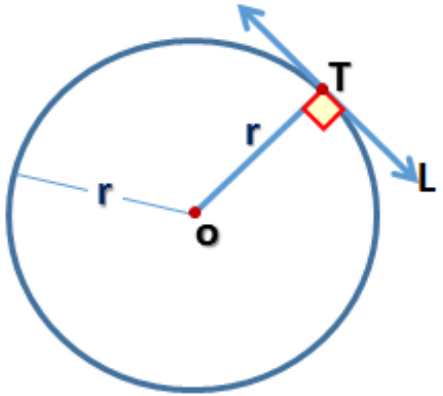
$2x = 6$

$x = 3$

6. Desde un punto P exterior a una Circunferencia, se trazan los segmentos tangentes PA y PB. Si la m<APB = 74° y PB = 24, halle la longitud del radio de dicha circunferencia.



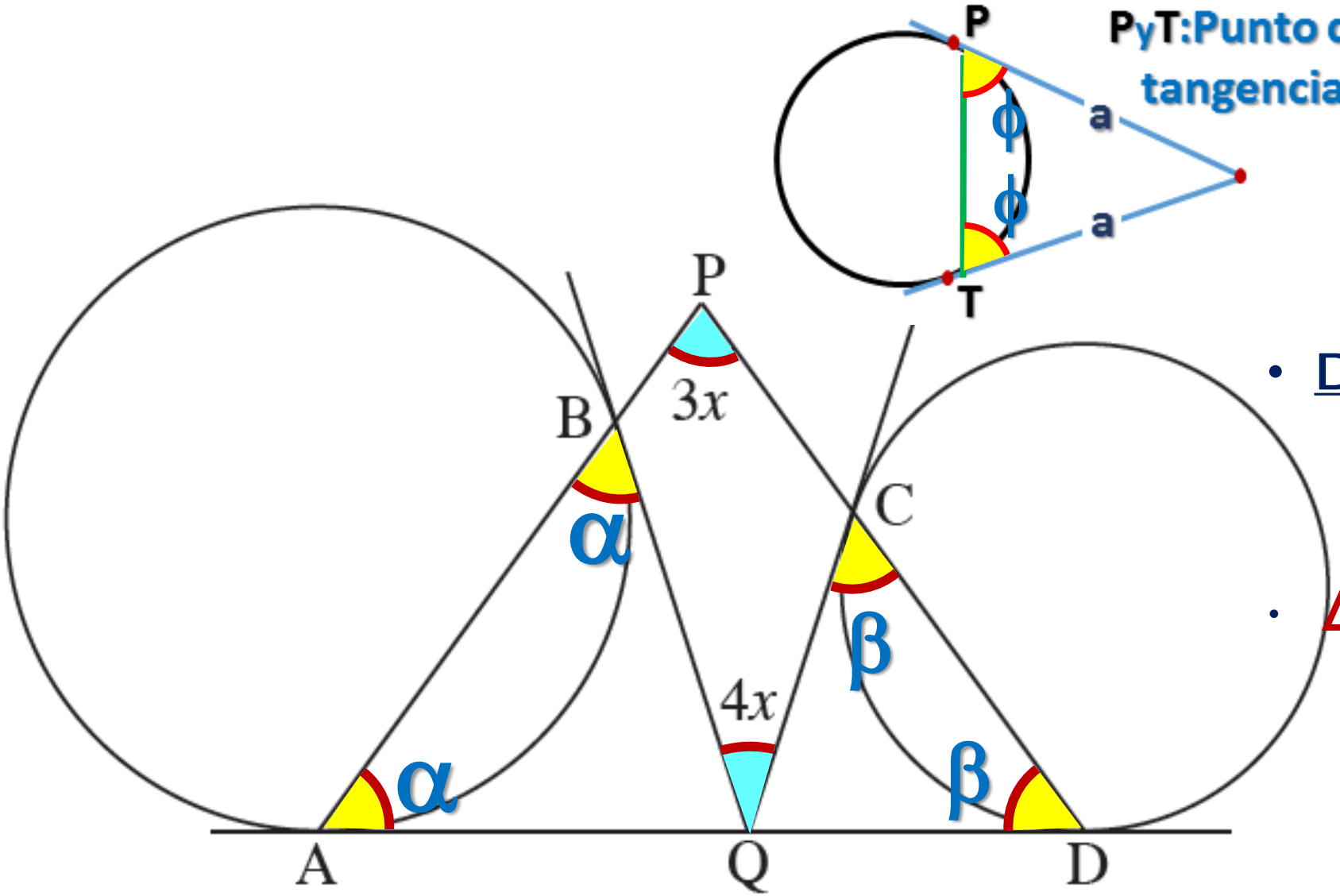


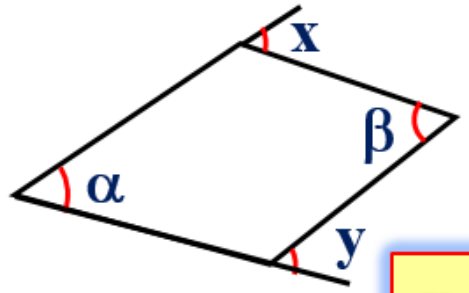


- Por notable 37°y 53°

$r = 18$

7. Halle el valor de *x* si A, B, C y D son puntos de tangencia.





$x + y = \alpha + \beta$

- Del gráfico

$\alpha + \beta = 4x + 3x$

$\alpha + \beta = 7x$

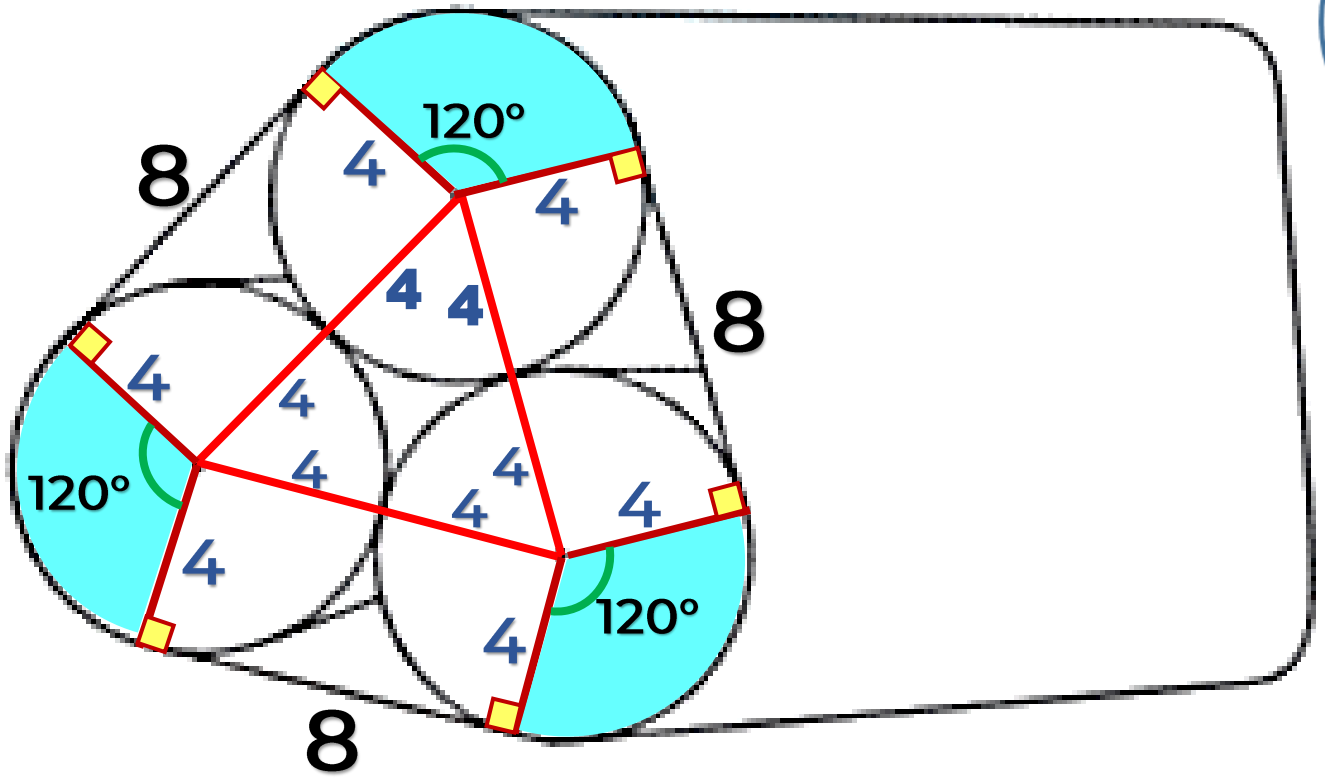
- $\triangle APD$:

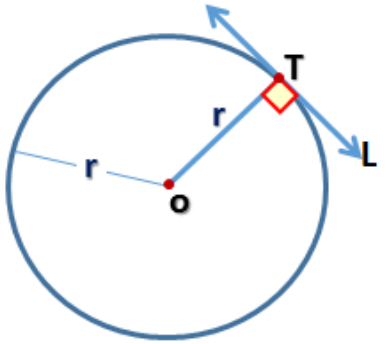
$\alpha + \beta + 3x = 180°$

$7x \quad 10x = 180°$

$x = 18°$

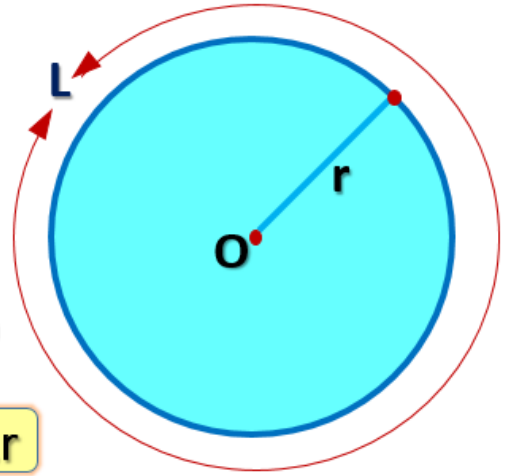
8. En la figura, halle la longitud de la faja que rodea a los tres rodillos mostrados si sus radios miden 4 cm.





L: longitud de la circunferencia

$L_o = 2\pi.r$



$L(faja) = \underbrace{8 + 8 + 8}_{24} + \underbrace{L_o}_{2p.(4)}$

$L(faja) = 24 + 2p.(4)$

$L(faja) = 24 + 8p$

$L(faja) = 8(3 + p)cm$


SACO
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