



# GEOMETRÍA

## RETROALIMENTACIÓN

**4th**  
SECONDARY

**TOMO 2**

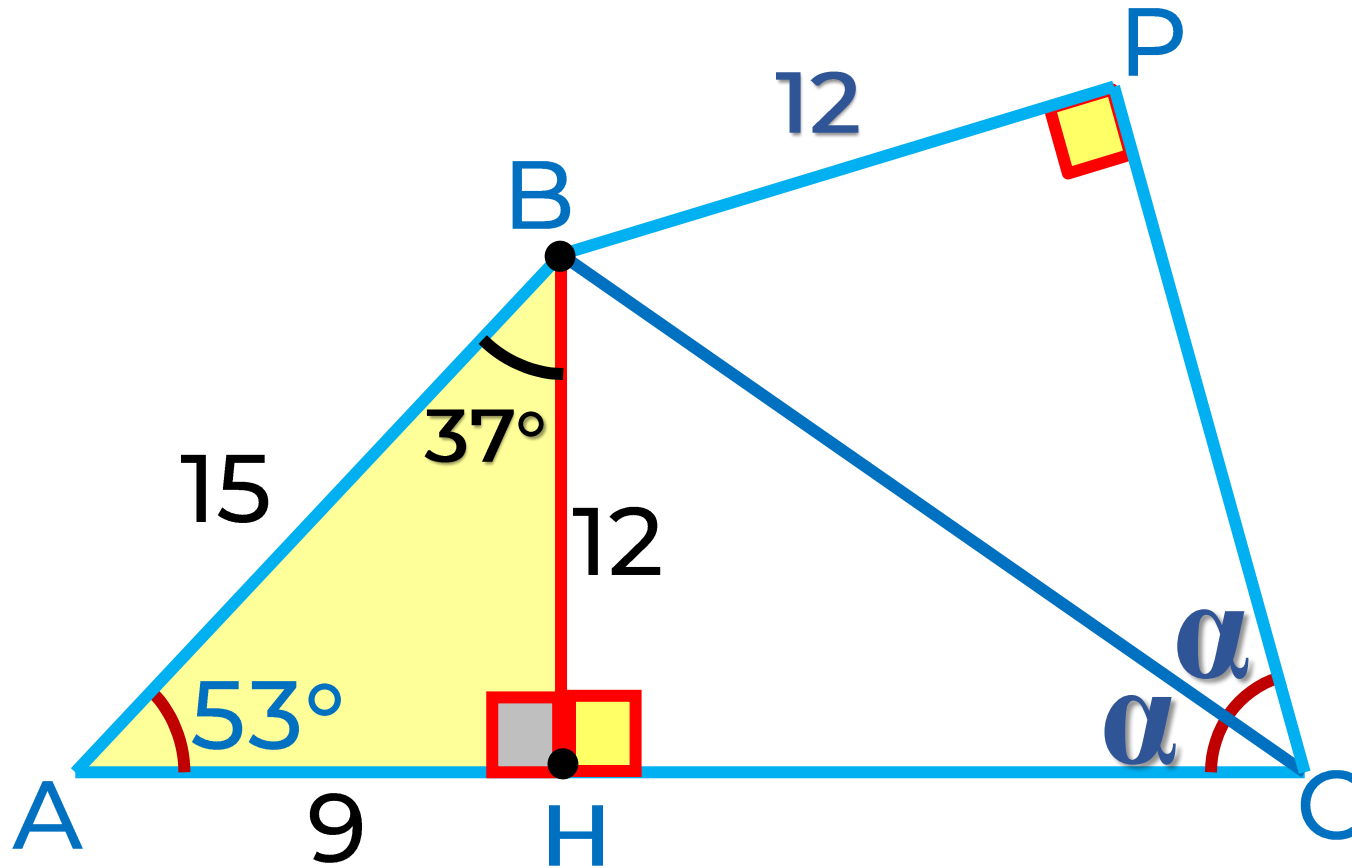
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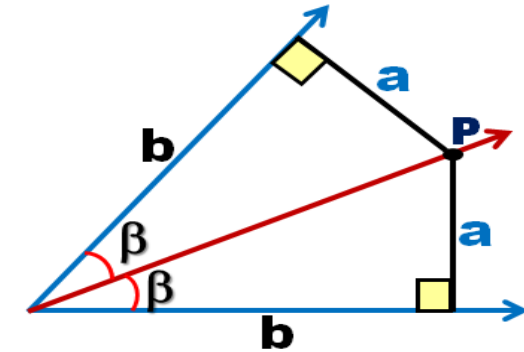
 **SACO OLIVEROS**



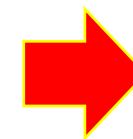
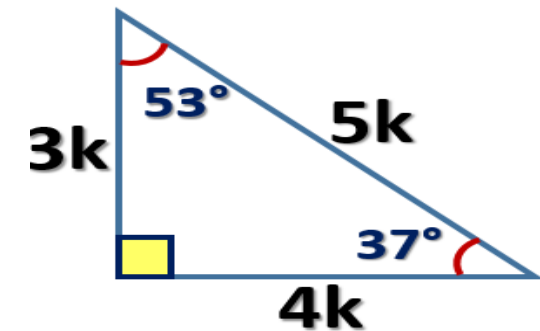
1. En el gráfico, halle AB.



• Teorema de la bisectriz



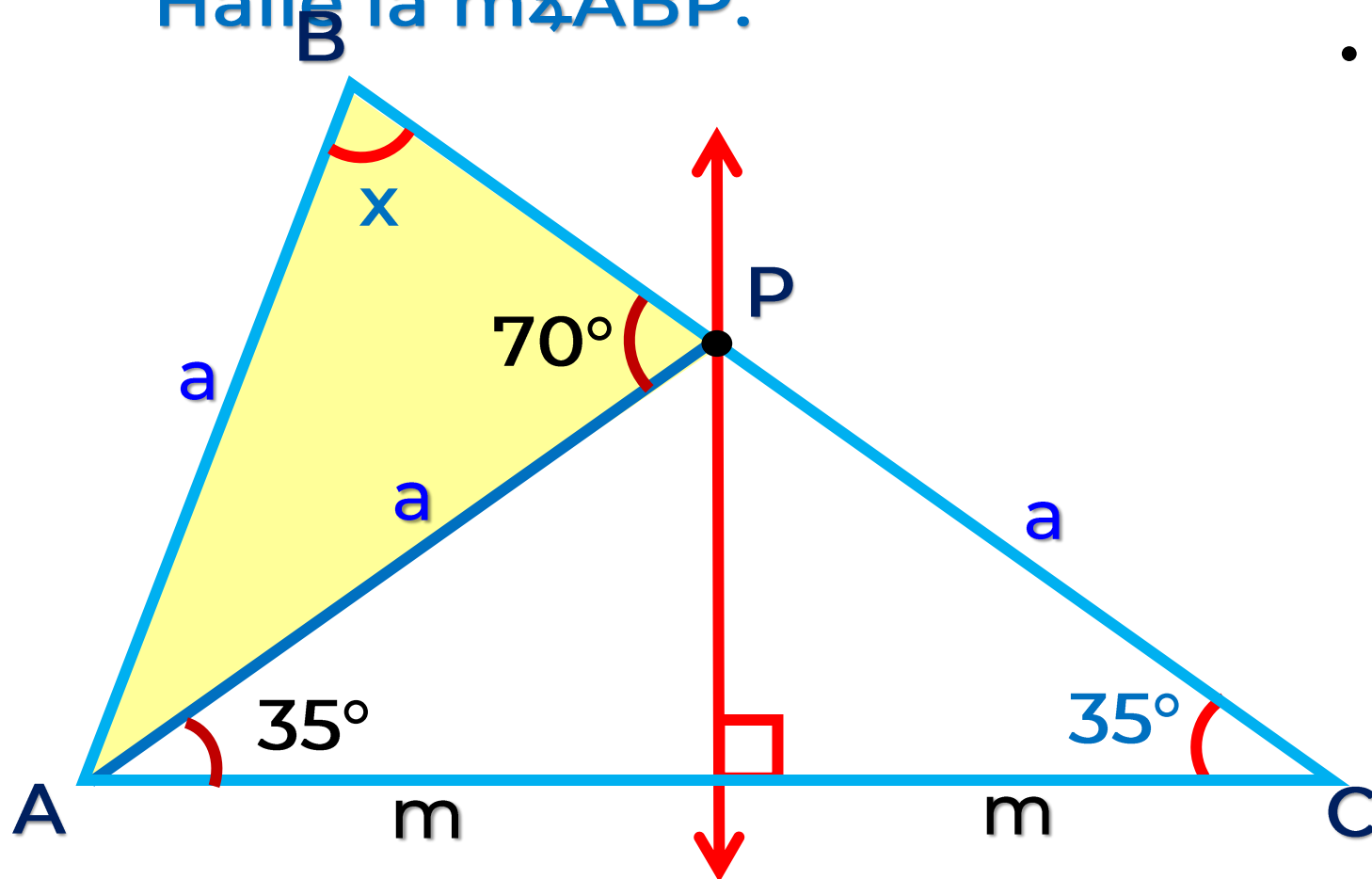
•  $\Delta$  Aproximado ( $37^\circ - 53^\circ$ )



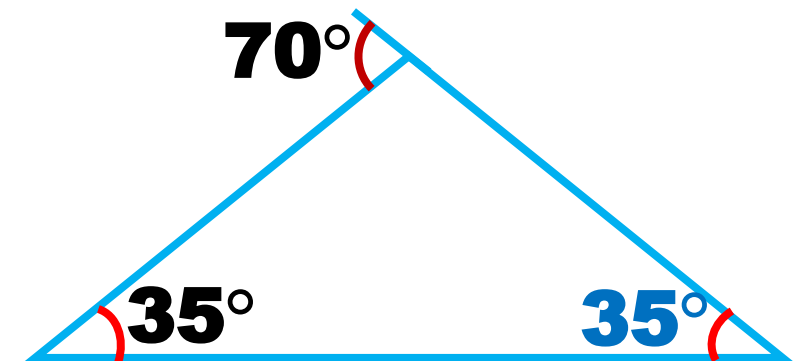
**AB = 15**



2. En un triángulo  $ABC$ , donde la  $m\angle BCA = 35^\circ$ , la mediatriz de  $\overline{AC}$  intersecta a  $\overline{BC}$  en  $P$ , tal que  $AB = PC$ . Halle la  $m\angle ABP$ .



- Teorema de la mediatriz.



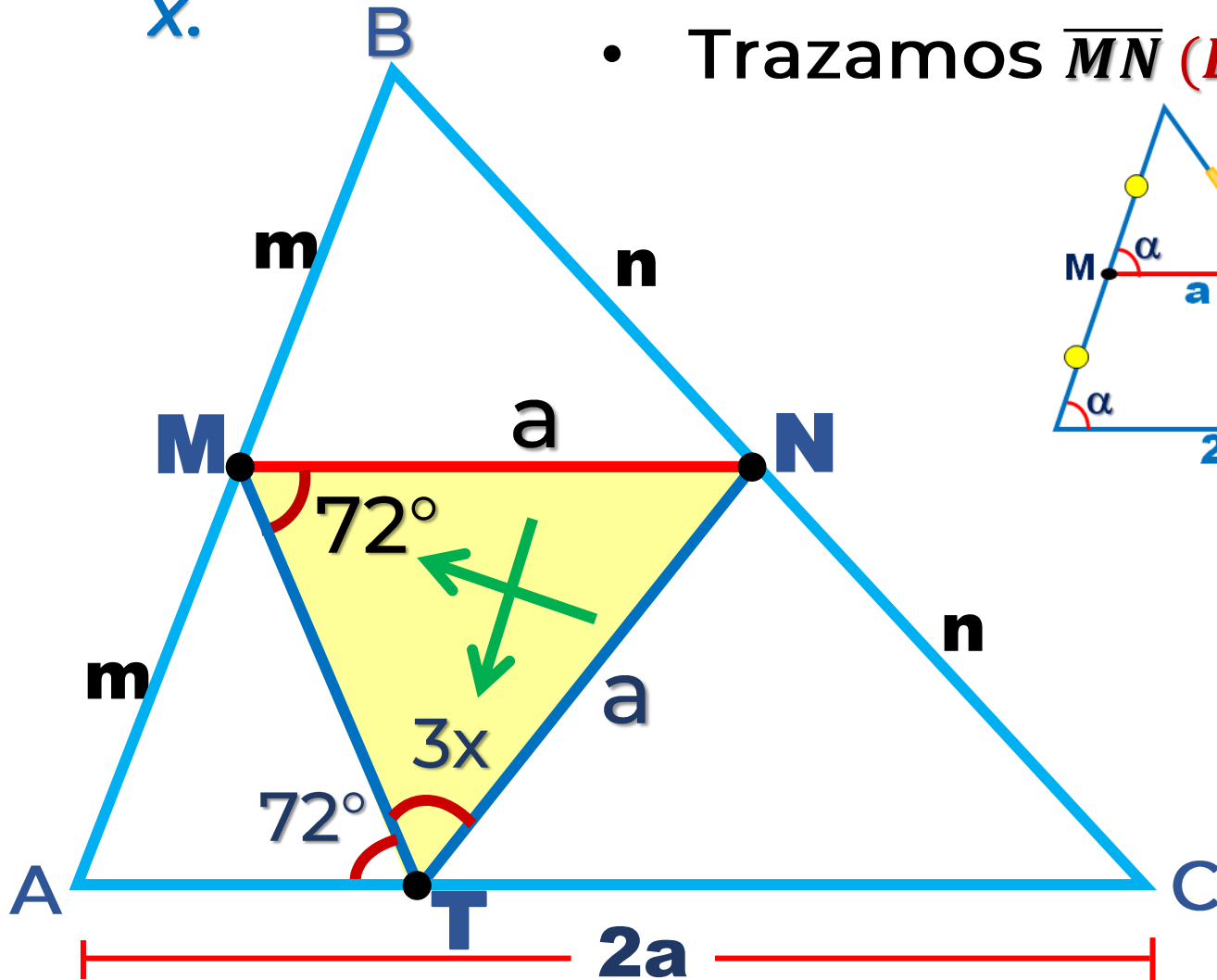
- $\triangle PAB$ : Isósceles



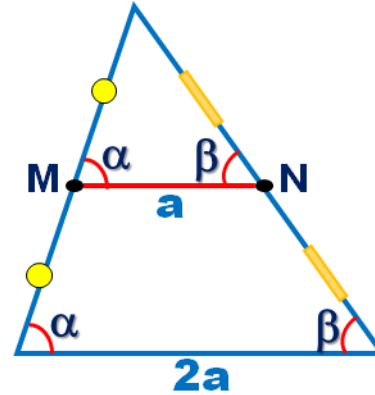
$$x = 70^\circ$$

3. En el gráfico, halle el valor de

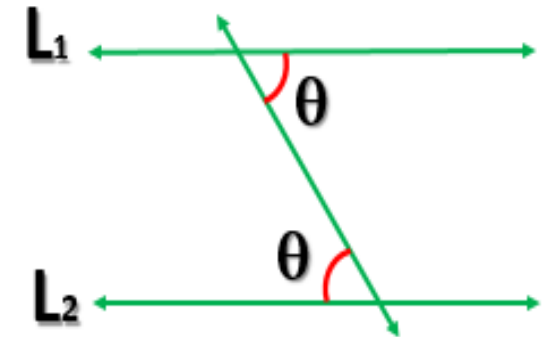
x.



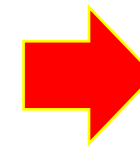
- Trazamos  $\overline{MN}$  (*Base media*)



Ángulos alternos internos



- $\triangle MNT$ : Isósceles

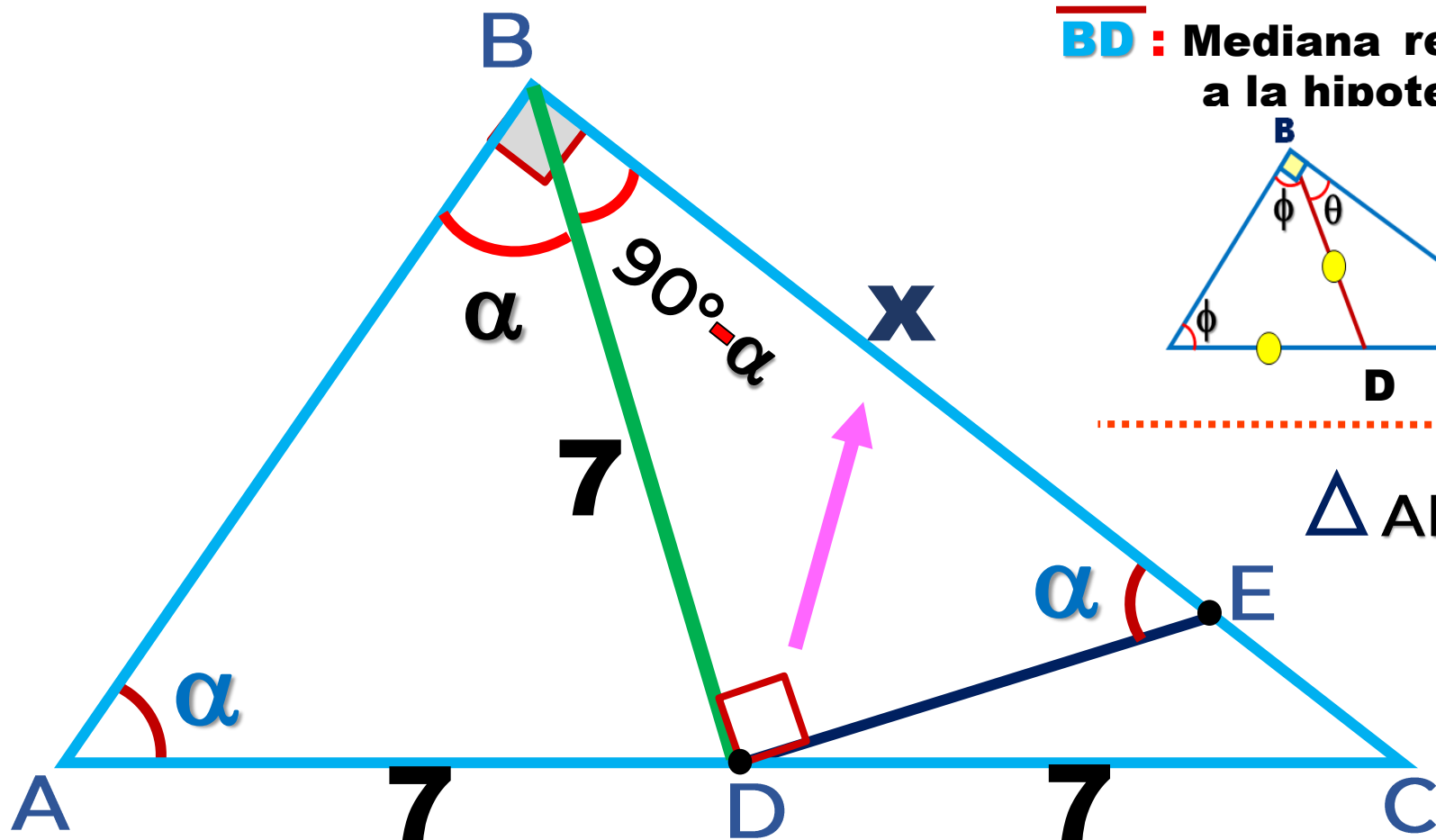


$$3x = 72^\circ$$

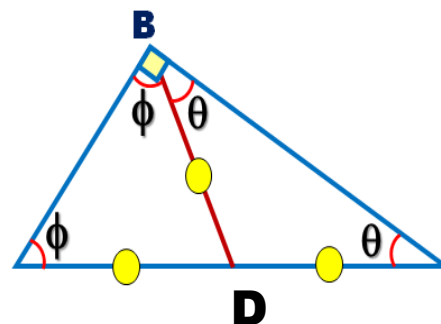
$$x = 24^\circ$$



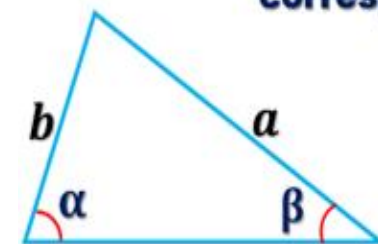
4. En un triángulo rectángulo ABC recto en B, en  $\overline{AC}$  y  $\overline{BC}$  se ubican los puntos D y E respectivamente, tal que:  $AD = DC = 7$  y  $m\angle BAD = m\angle BED = \alpha$ , halle el mínimo valor que puede tomar  $\overline{BE}$ .



$\overline{BD}$  : Mediana relativa a la hipotenusa.



• Teorema de la correspondencia



Si:  $\beta < \alpha$

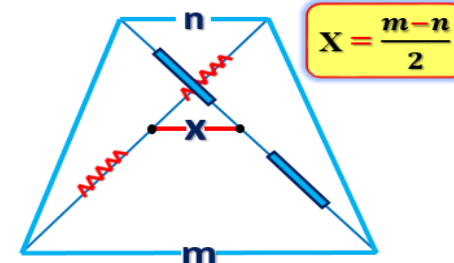
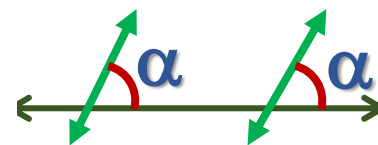
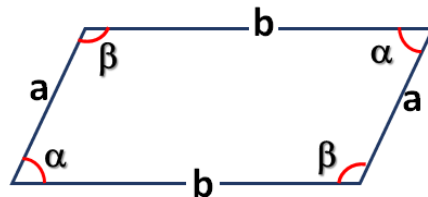
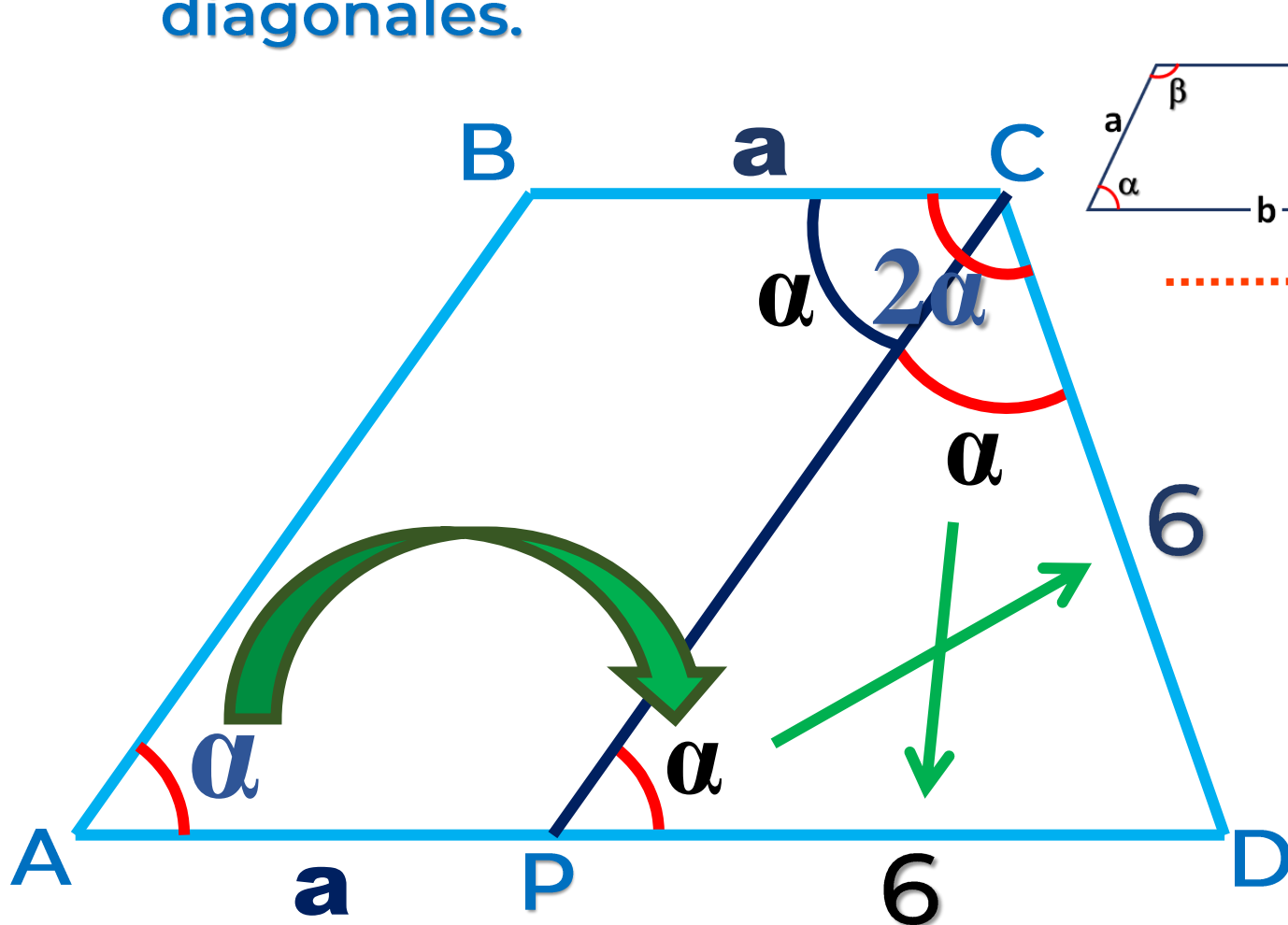
$$b < a$$

$\triangle ABD$  y  $\triangle BCD$  : Isósceles

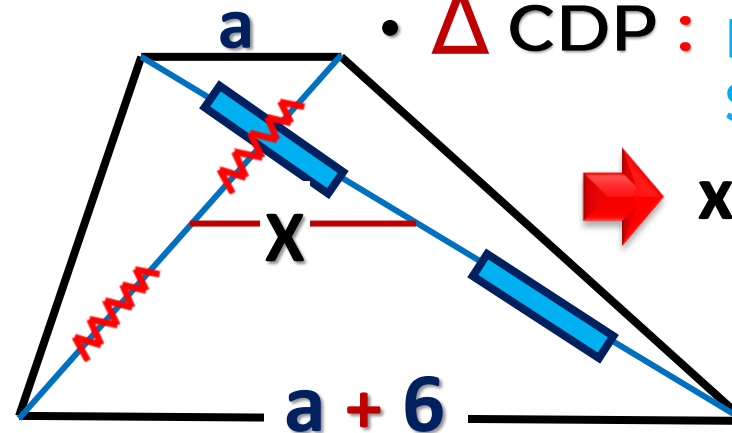
•  $\triangle BDE$  :  $7 < x$

$$X_{(\min)} = 8$$

5. En un trapezio ABCD donde  $\overline{BC} \parallel \overline{AD}$ ,  $m\angle BCD = 2(m\angle BAD)$  y  $CD = 6$ . Halle la longitud del segmento que une los puntos medios de sus diagonales.



- Trazamos  $\overline{CP} \parallel \overline{BA}$
- $\square$  ABCP (PARALELOGRAMO)
- $\triangle CDP$  : ISÓSCELES

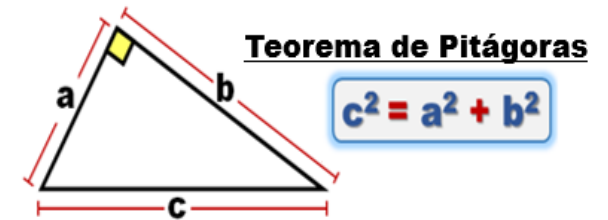
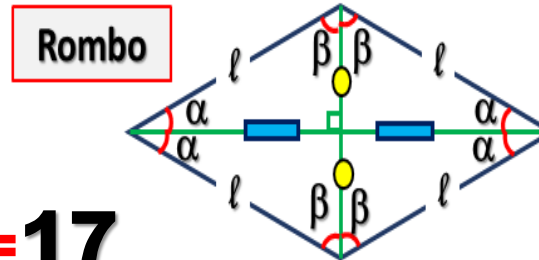
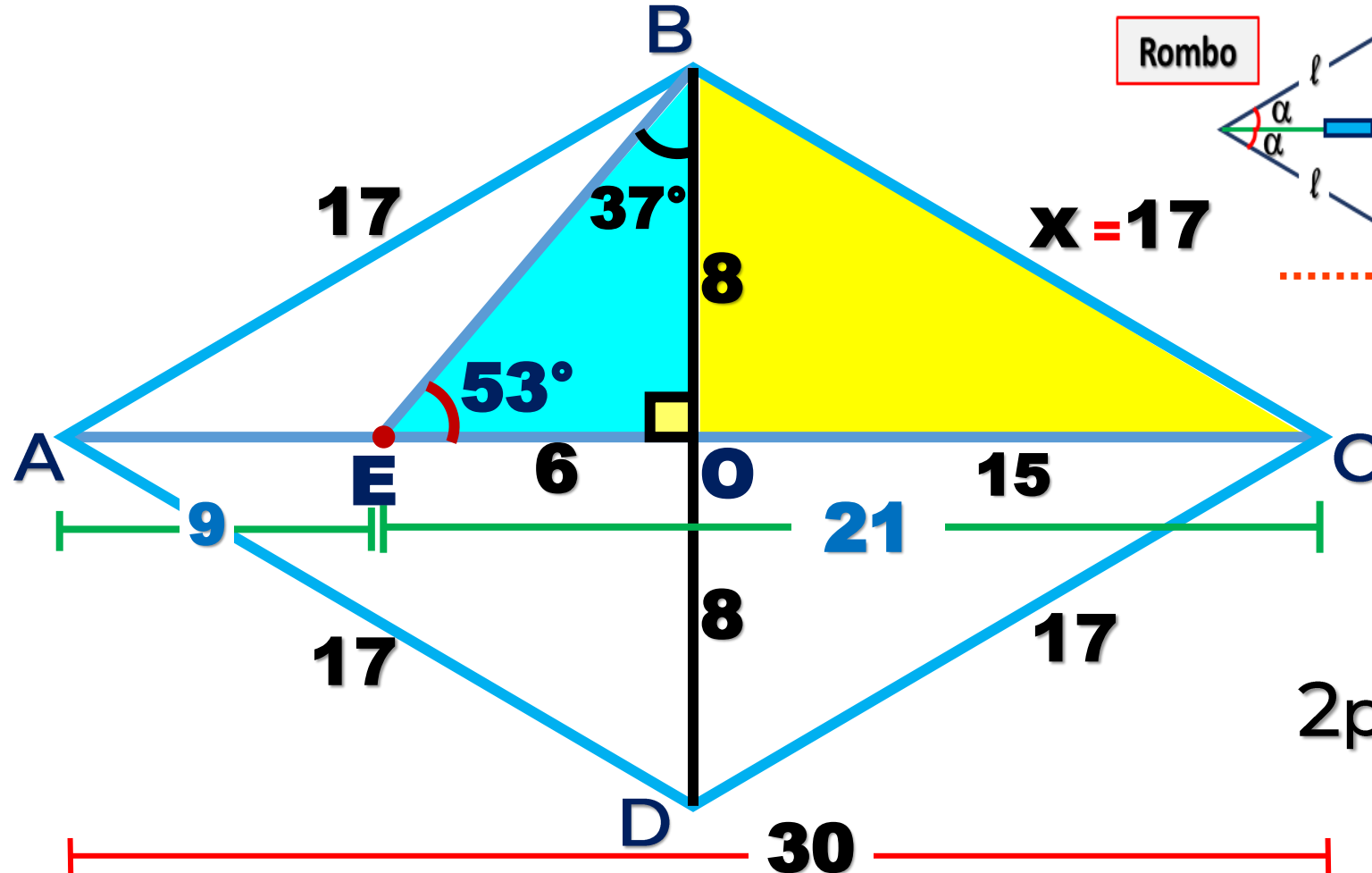


$$x = \frac{(6+a) - a}{2}$$

$$x = 3$$



6. En un rombo ABCD, en  $\overline{AC}$  se ubica el punto E, tal que  $m\angle BEC = 53^\circ$ ,  $AE = 9$  y  $EC = 21$ . Calcular el perímetro de dicha figura.



△ BOC: Pitágoras



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

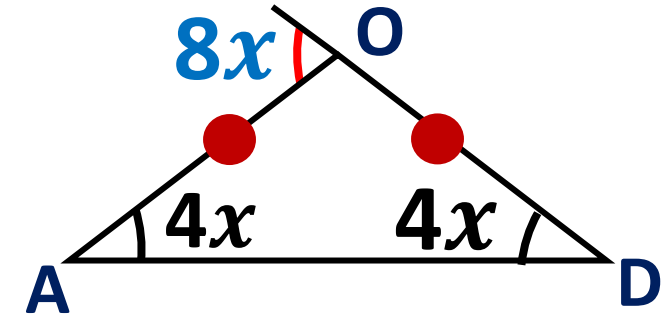
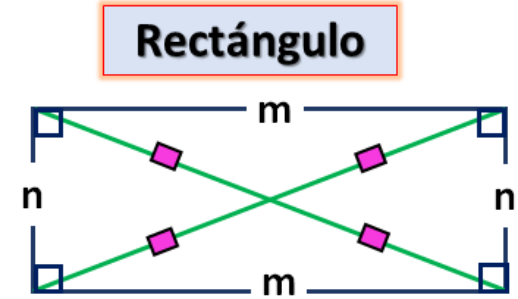
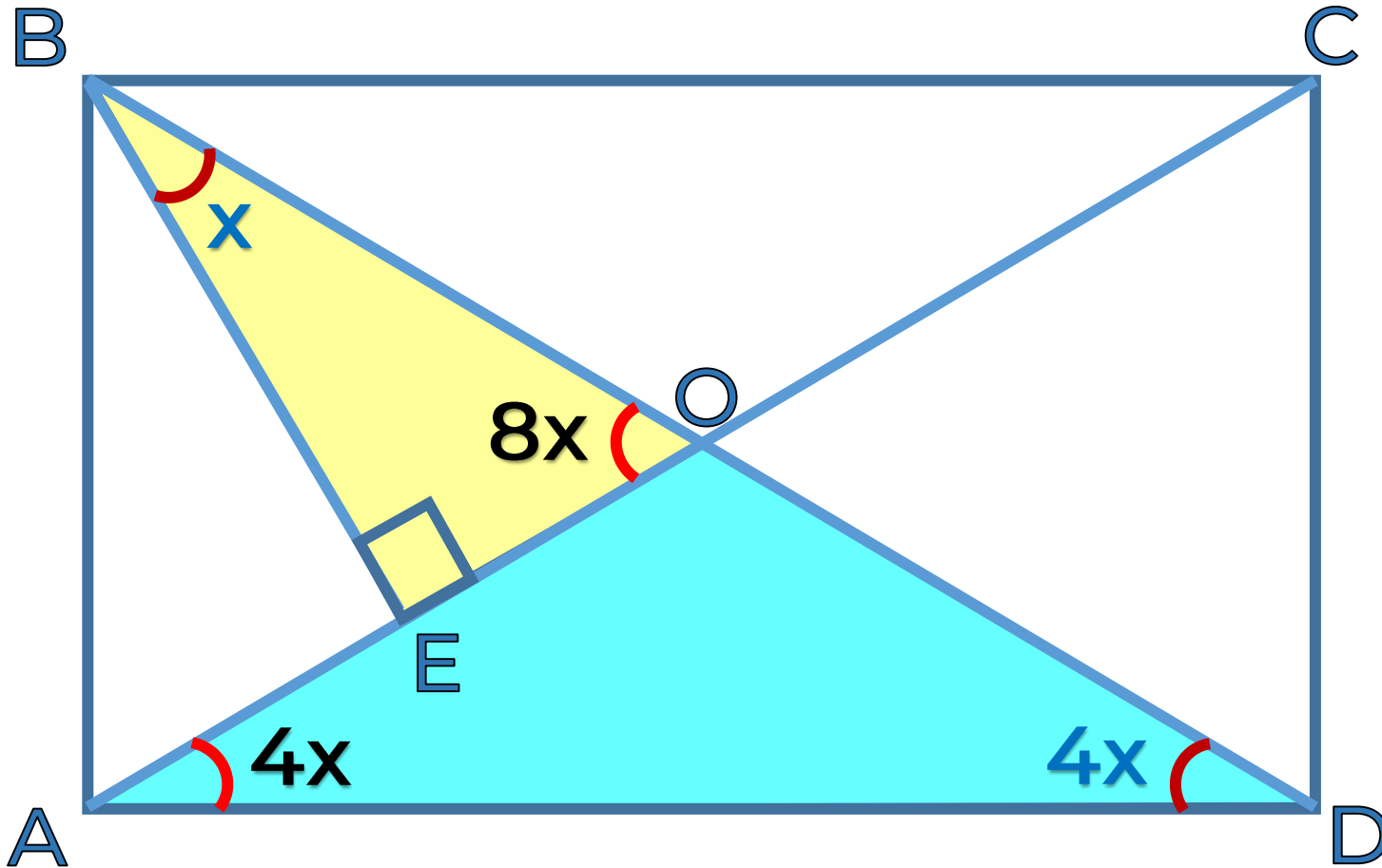
$$x^2 = 289$$

$$x = 17$$

$$2p_{\diamond} = 17 + 17 + 17 + 17$$

$$2p_{\diamond} = 68$$

7. En la figura, ABCD es un rectángulo. Halle el valor de  $x$ .

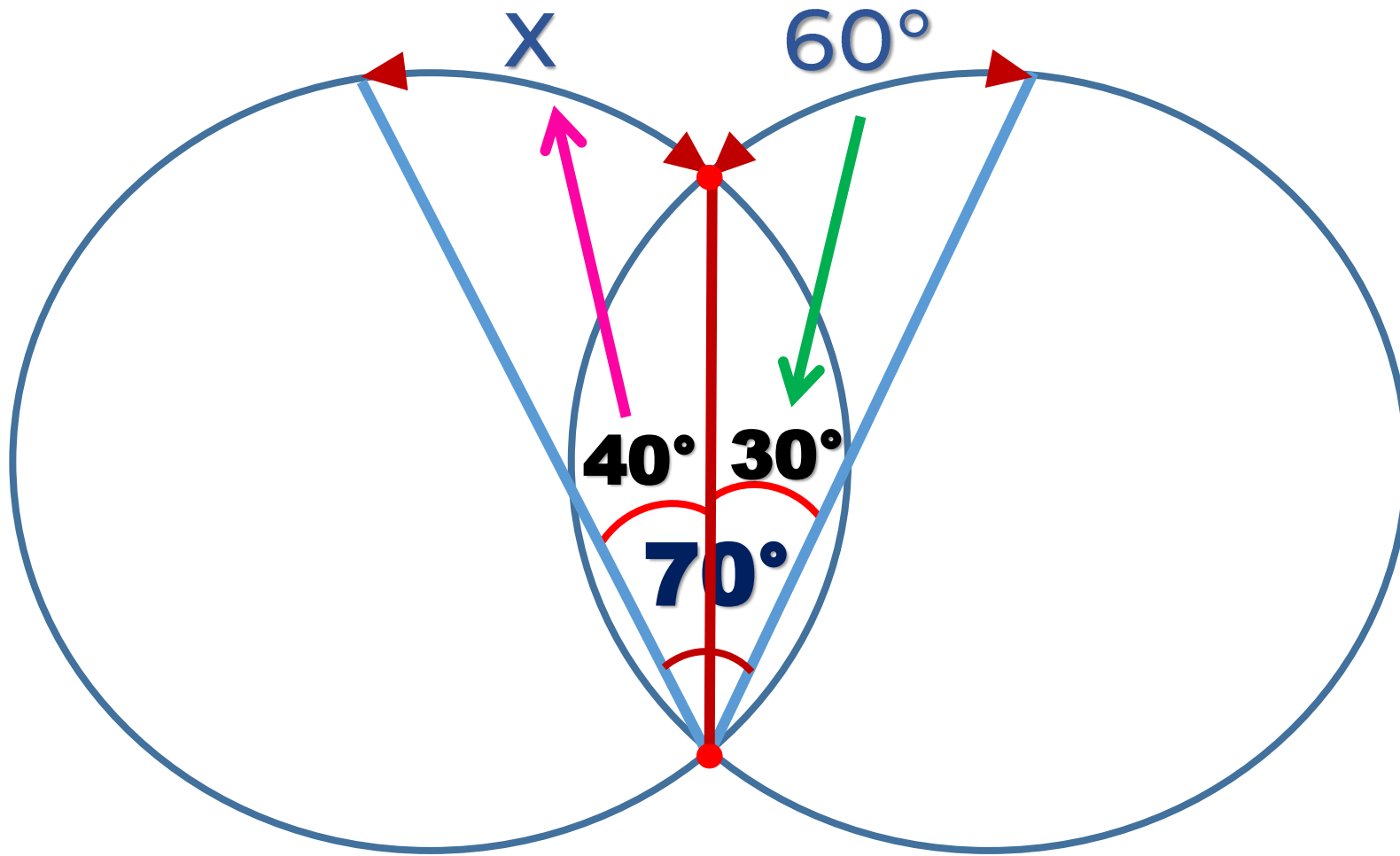


$\triangle EBO : x + 8x = 90^\circ$   
 $9x = 90^\circ$

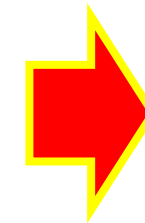
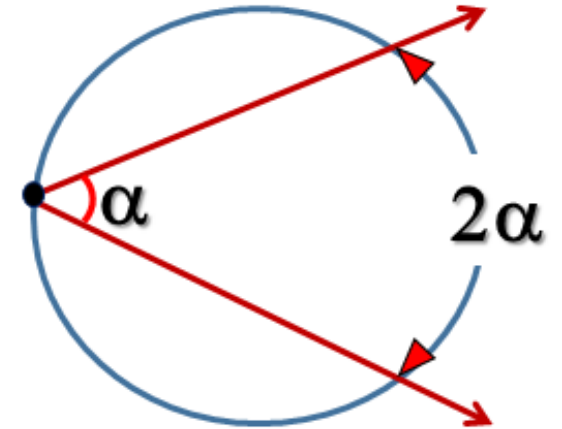
**$x = 10^\circ$**



8. En la figura, halle el valor de X.



Ángulo inscrito

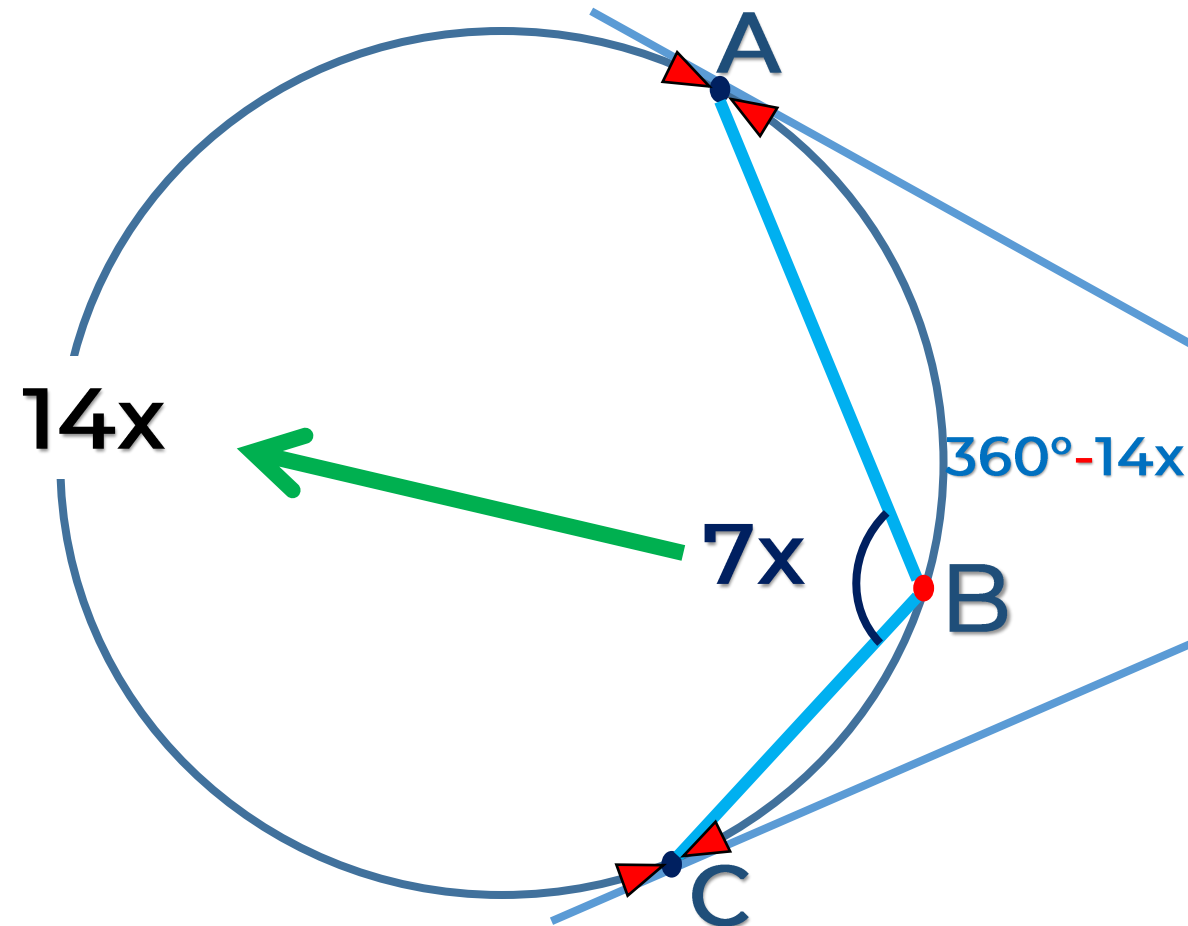


$$X = 2 \\ (40^\circ)$$

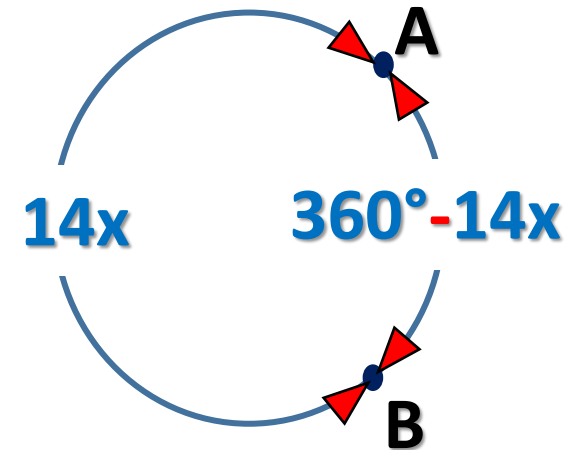
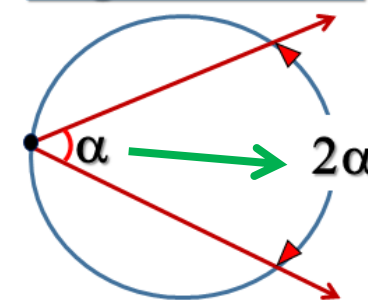
$$\mathbf{X = 80^\circ}$$



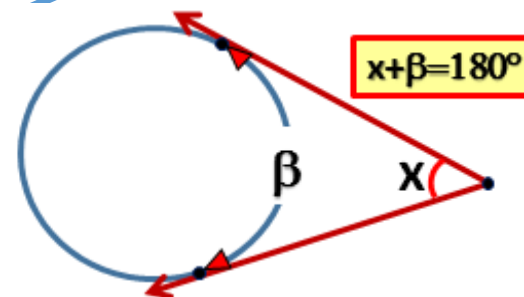
9. Desde un punto P, exterior a una circunferencia, se trazan las tangentes  $\overline{PA}$  y  $\overline{PC}$ . Luego en el menor  $\widehat{AC}$  se ubica el punto B, tal que  $m\angle ABC = 7x$  y  $m\angle APC = 4x$ . Halle el valor de x.



Ángulo inscrito



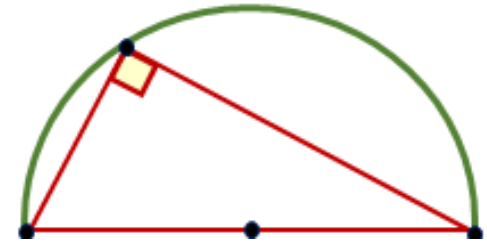
$$\begin{aligned}
 &4x \quad \text{at point P} \quad \Rightarrow \quad 360^\circ - 14x + 4x = 180^\circ \\
 &360^\circ - 10x = 180^\circ \\
 &180^\circ = 10x
 \end{aligned}$$



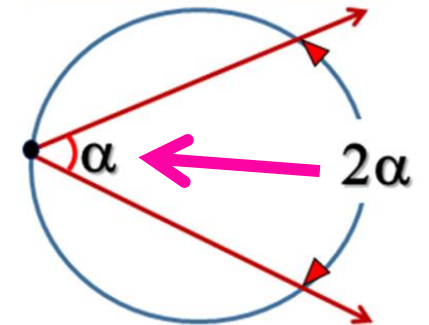
$$\boxed{x = 18^\circ}$$

10. Halle el valor de  $x$  si  $O$  es centro.

Por teorema



Ángulo inscrito



$$4x + 90^\circ = 13x$$

$$90^\circ = 9x$$

$$\mathbf{x = 10^\circ}$$

