



GEOMETRÍA

1er bimestre

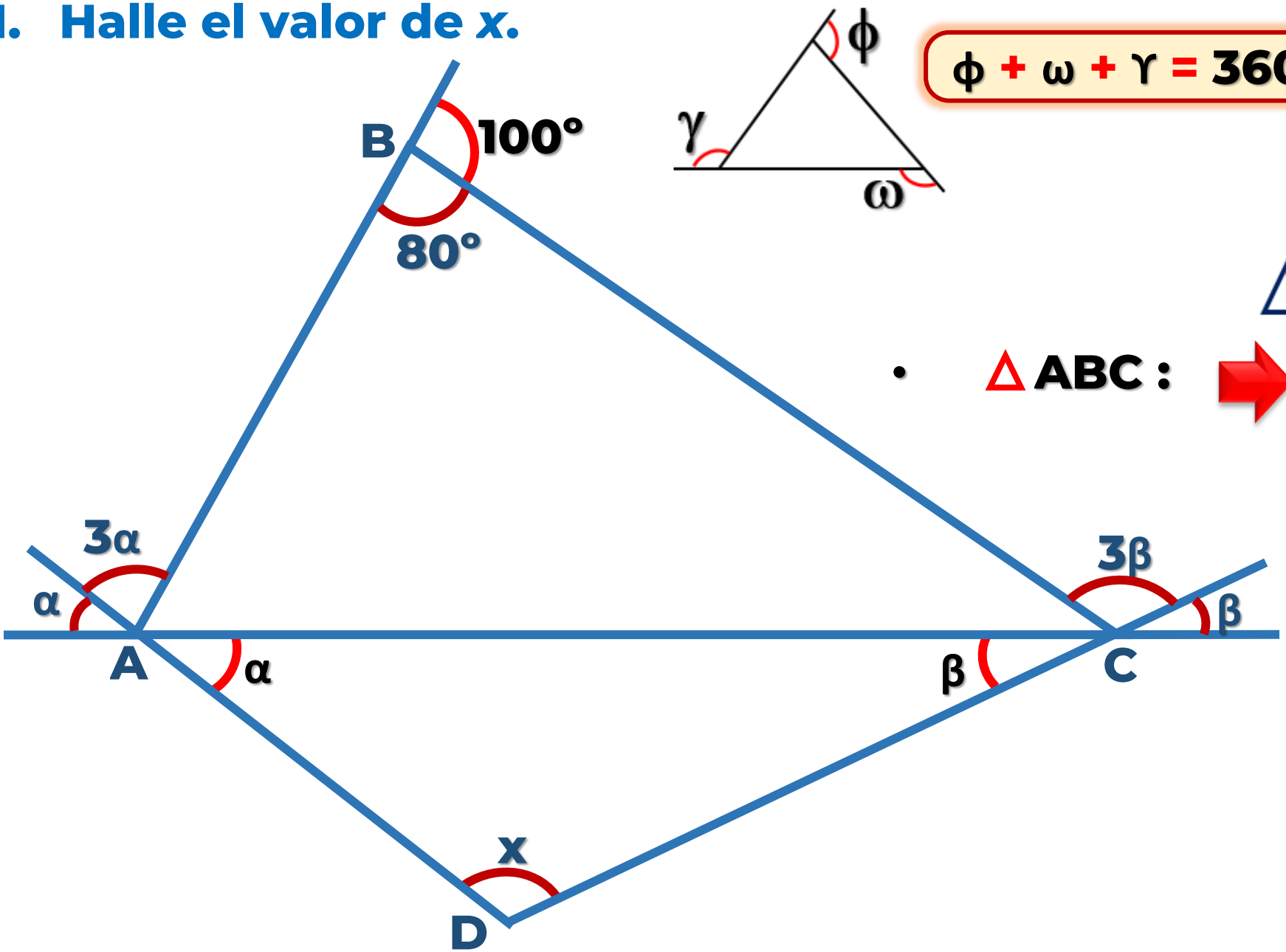
4st
SECONDARY

Asesoría



 **SACO OLIVEROS**

1. Halle el valor de x.



$\phi + \omega + \gamma = 360^\circ$

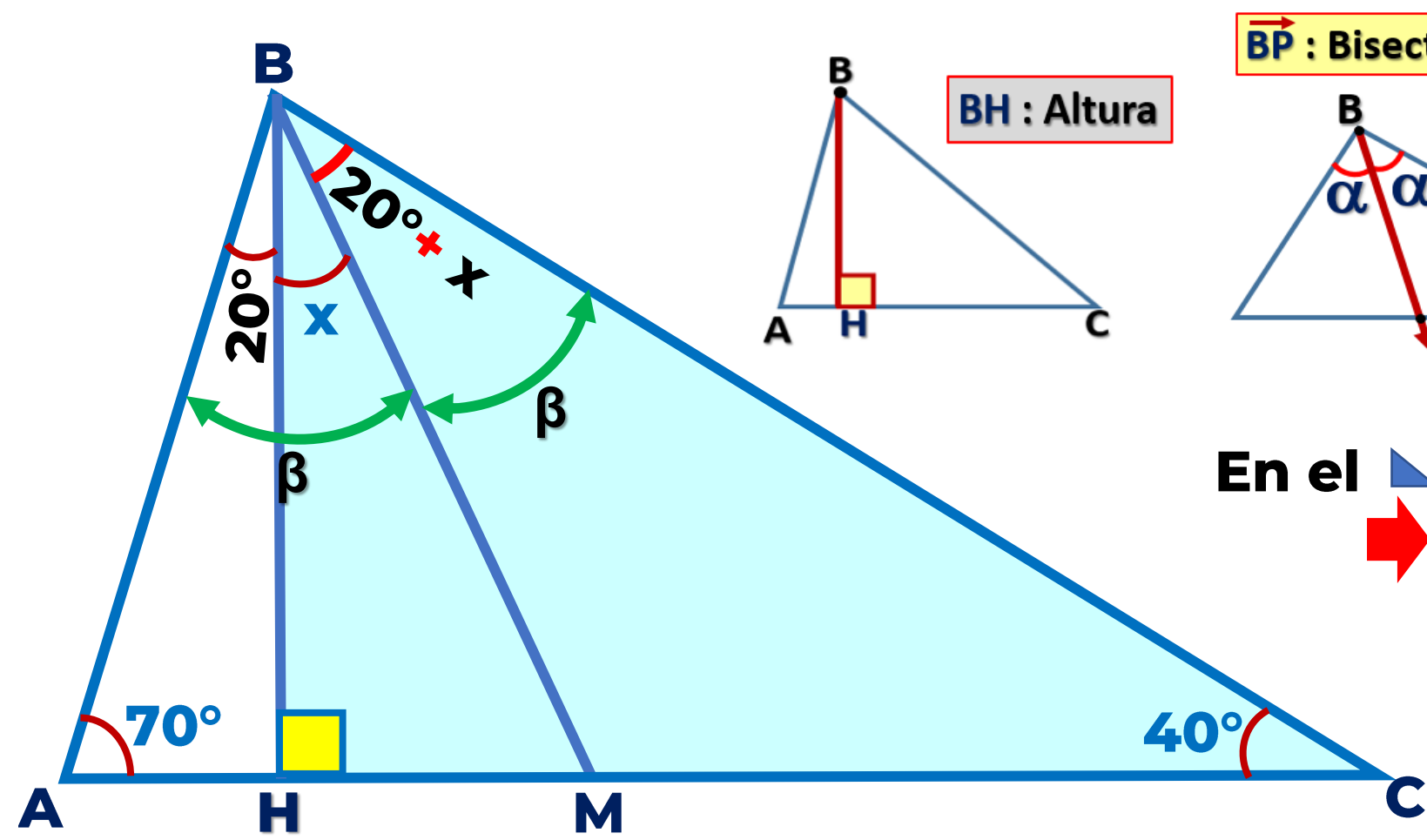
$\alpha + \beta + \theta = 180^\circ$

• $\triangle ABC :$ $\Rightarrow 4\alpha + 4\beta + 100^\circ = 360^\circ$
 $4\alpha + 4\beta = 260^\circ$
 $\alpha + \beta = 65^\circ$

• $\triangle ACD :$
 $\Rightarrow \underbrace{\alpha + \beta}_{65^\circ} + x = 180^\circ$

$x = 115^\circ$

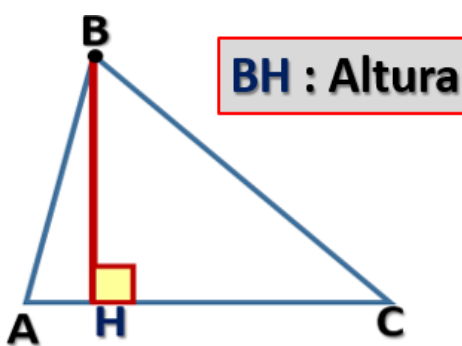
2. Halle el valor de x , si \overline{BH} y \overline{BM} son altura y bisectriz respectivamente de triángulo ABC.



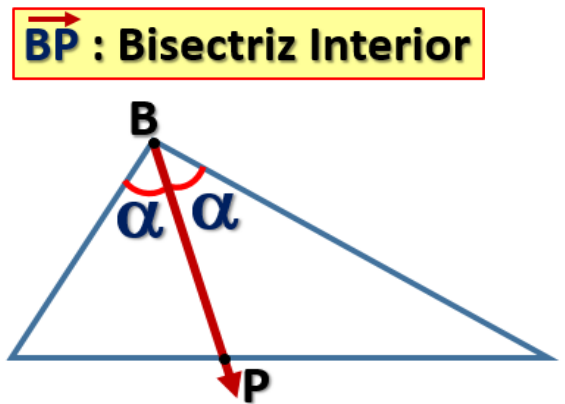
$\angle A = 70^\circ$, $\angle C = 40^\circ$

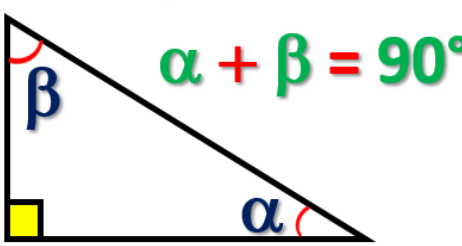
$\angle ABH = 20^\circ$, $\angle HBM = x$, $\angle MBC = \beta$, $\angle BMC = \beta$, $\angle HMC = 20^\circ + x$

BH : Altura



BP : Bisectriz Interior





$\alpha + \beta = 90^\circ$

En el $\triangle BHC$:

$\Rightarrow x + 20^\circ + x + 40^\circ = 90^\circ$

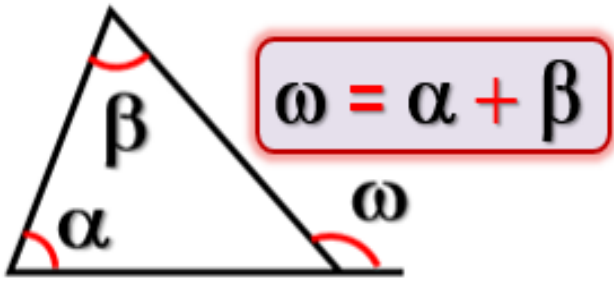
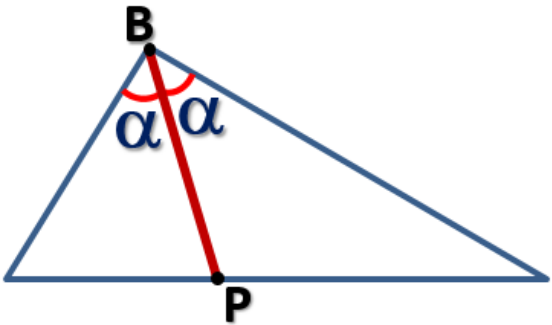
$2x + 60^\circ = 90^\circ$

$2x = 30^\circ$

$x = 15^\circ$

3. En la figura, $AB = BD = CD$, además \overline{BD} es bisectriz del $\triangle ABC$. Calcule la $m\angle BAD$

\overline{BP} : Bisectriz Interior



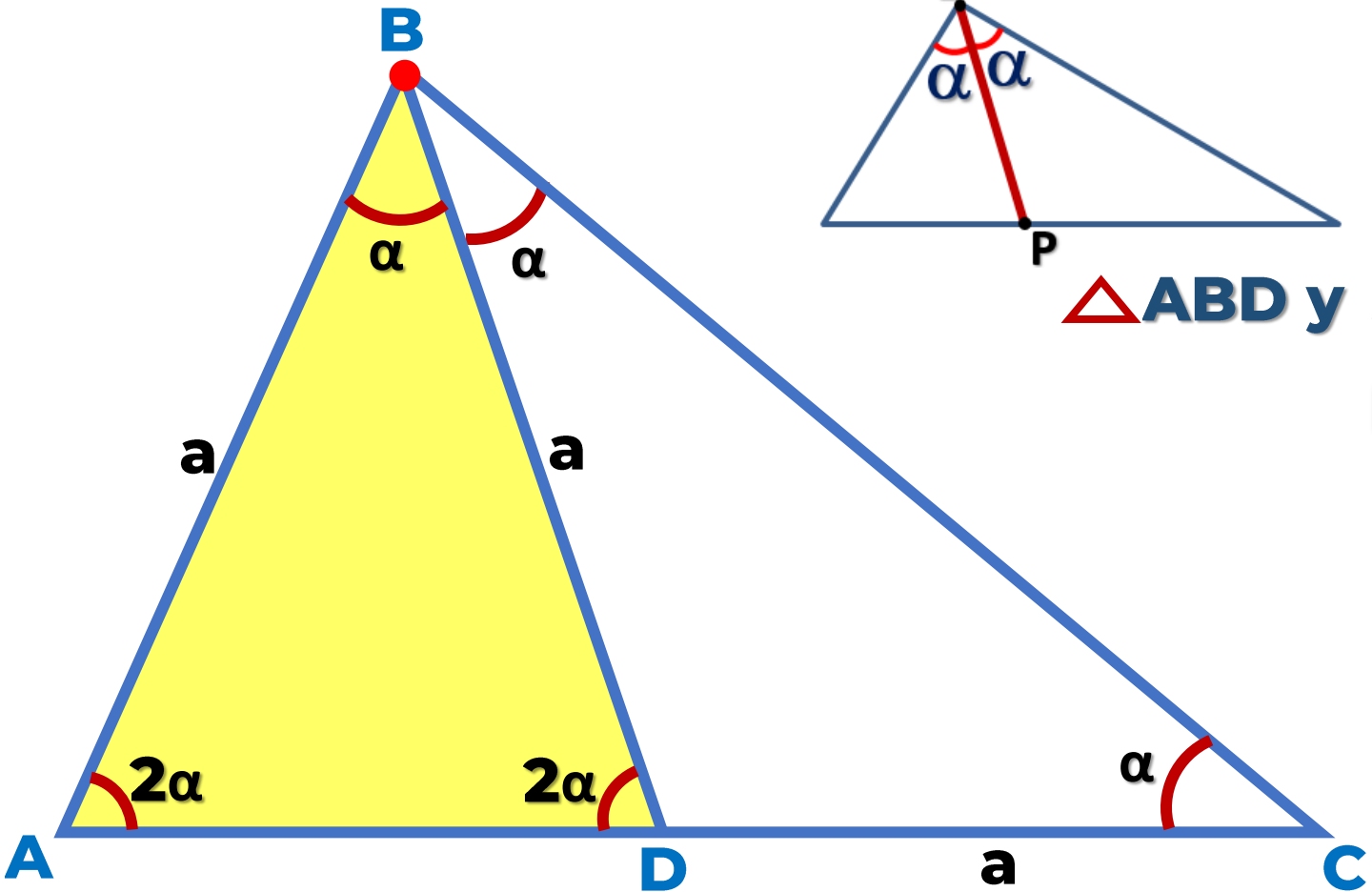
$\triangle ABD$ y $\triangle BCD$: ISÓSCELES

$\alpha + 2\alpha + 2\alpha = 180^\circ$
 $5\alpha = 180^\circ$
 $\alpha = 36^\circ$

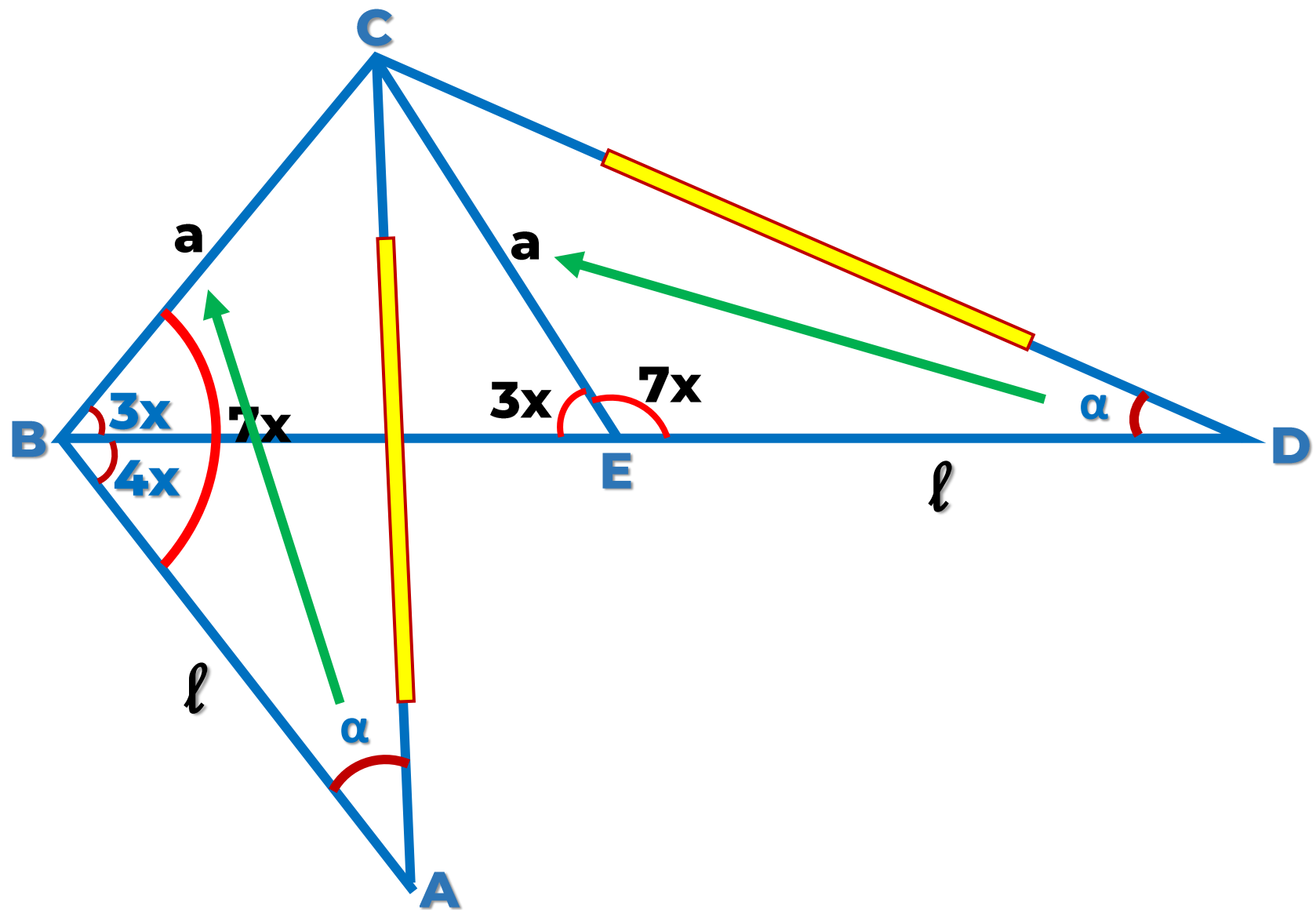
Nos piden

$m\angle BAD = 2 (36^\circ)$

$m\angle BAD = 72^\circ$



4. En la figura, halle el valor de x si $AB = ED$ y $AC = CD$.



- $\triangle ABC \cong \triangle CDE$
L-A-L
- El $\triangle BCE$: Isósceles

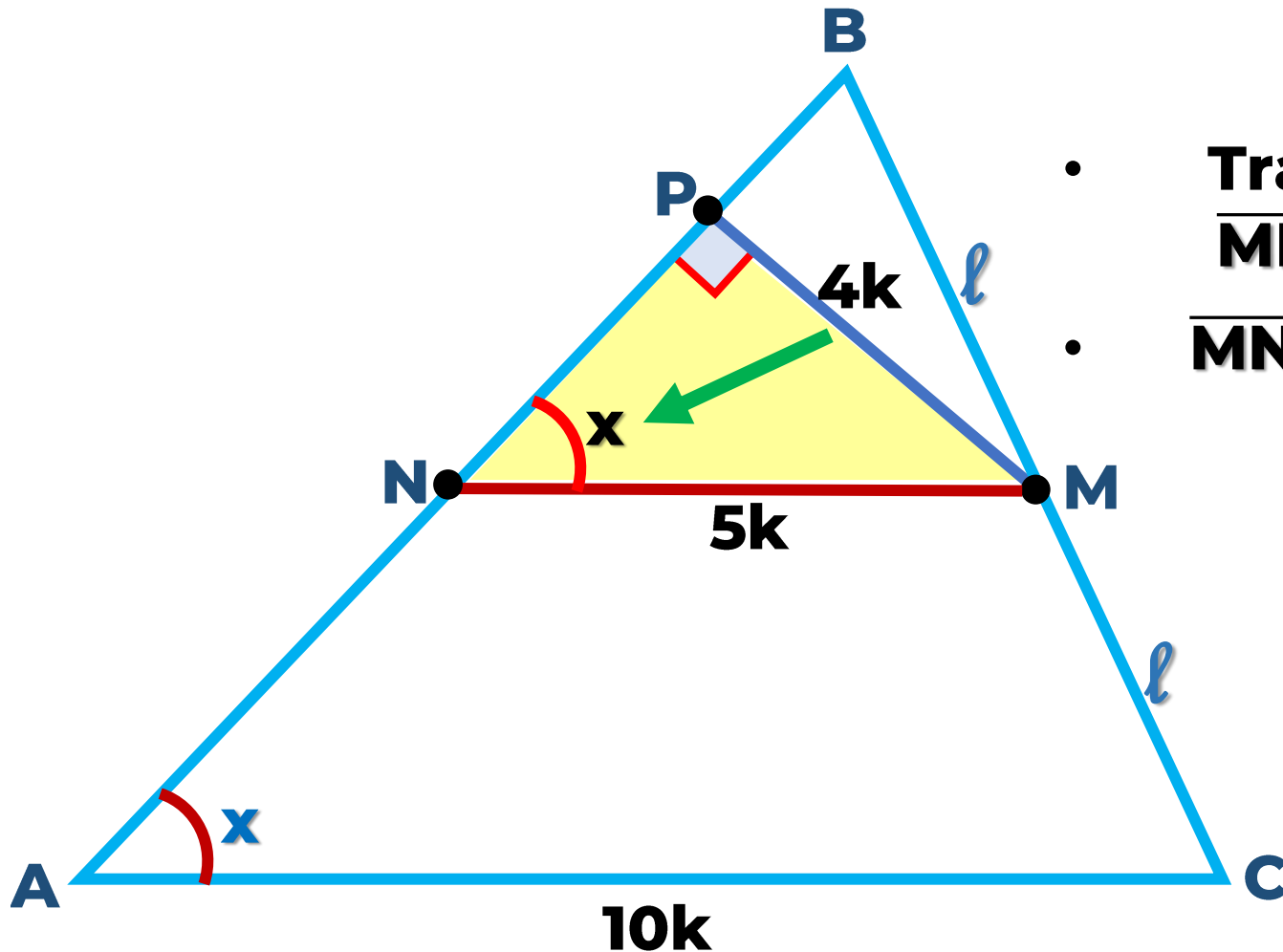
Del gráfico

➡ $3x + 7x = 180^\circ$

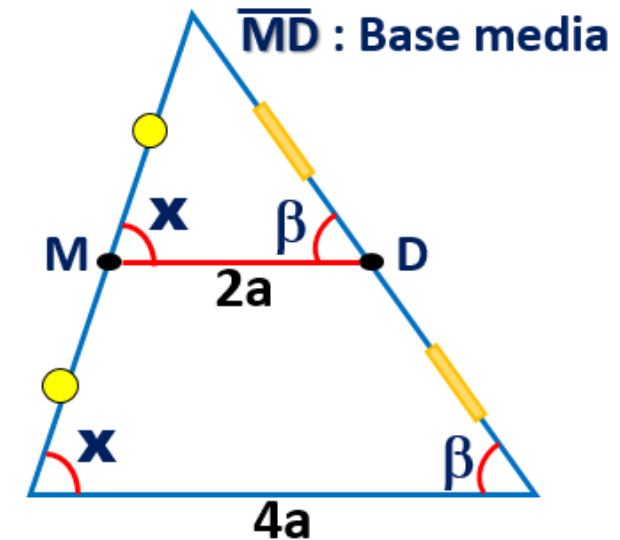
$10x = 180^\circ$

$x = 18^\circ$

5. En el triángulo ABC, M es punto medio de \overline{BC} , $PM = 4k$ y $AC = 10k$, halle $m\angle BAC$.



- Trazamos \overline{MN} paralela a \overline{AC}
- \overline{MN} : **Base media**

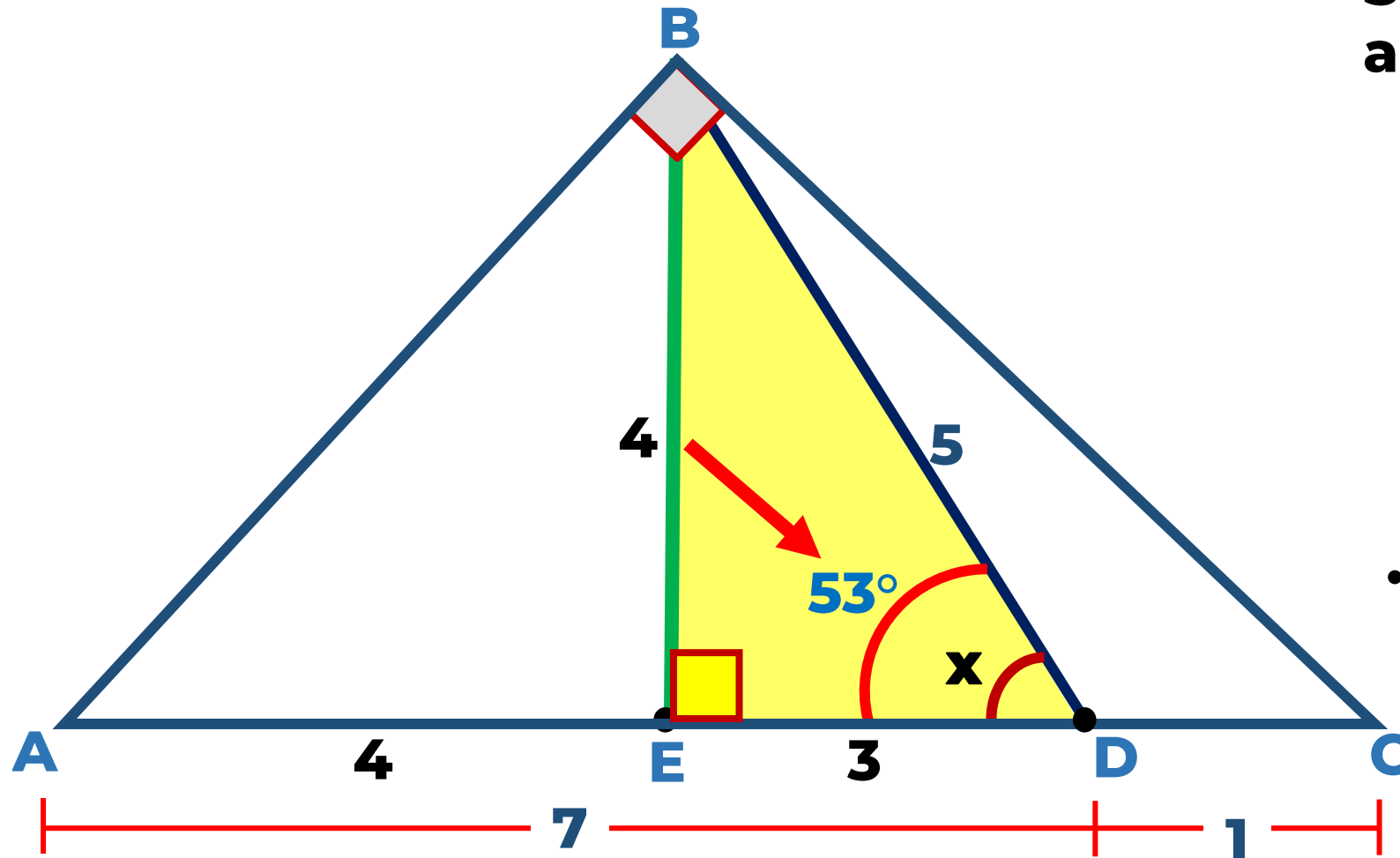


▢ **NPM**: Notable de 37° y 53°

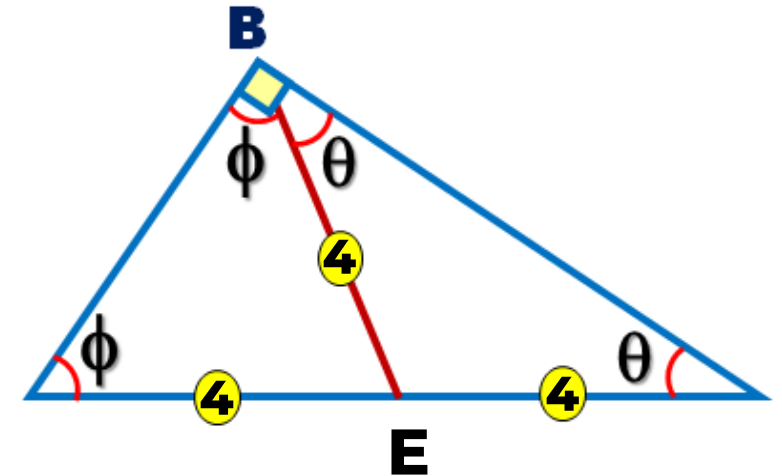


$$x = 53^\circ$$

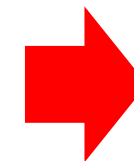
6. En un triángulo rectángulo ABC recto en B, en \overline{AC} se ubican el punto D, de modo que: respectivamente, $AD = 7$, $DC = 1$ y $BD = 5$. Halle la $m\angle BDA$.



Se traza la mediana relativa a la hipotenusa \overline{BE} .

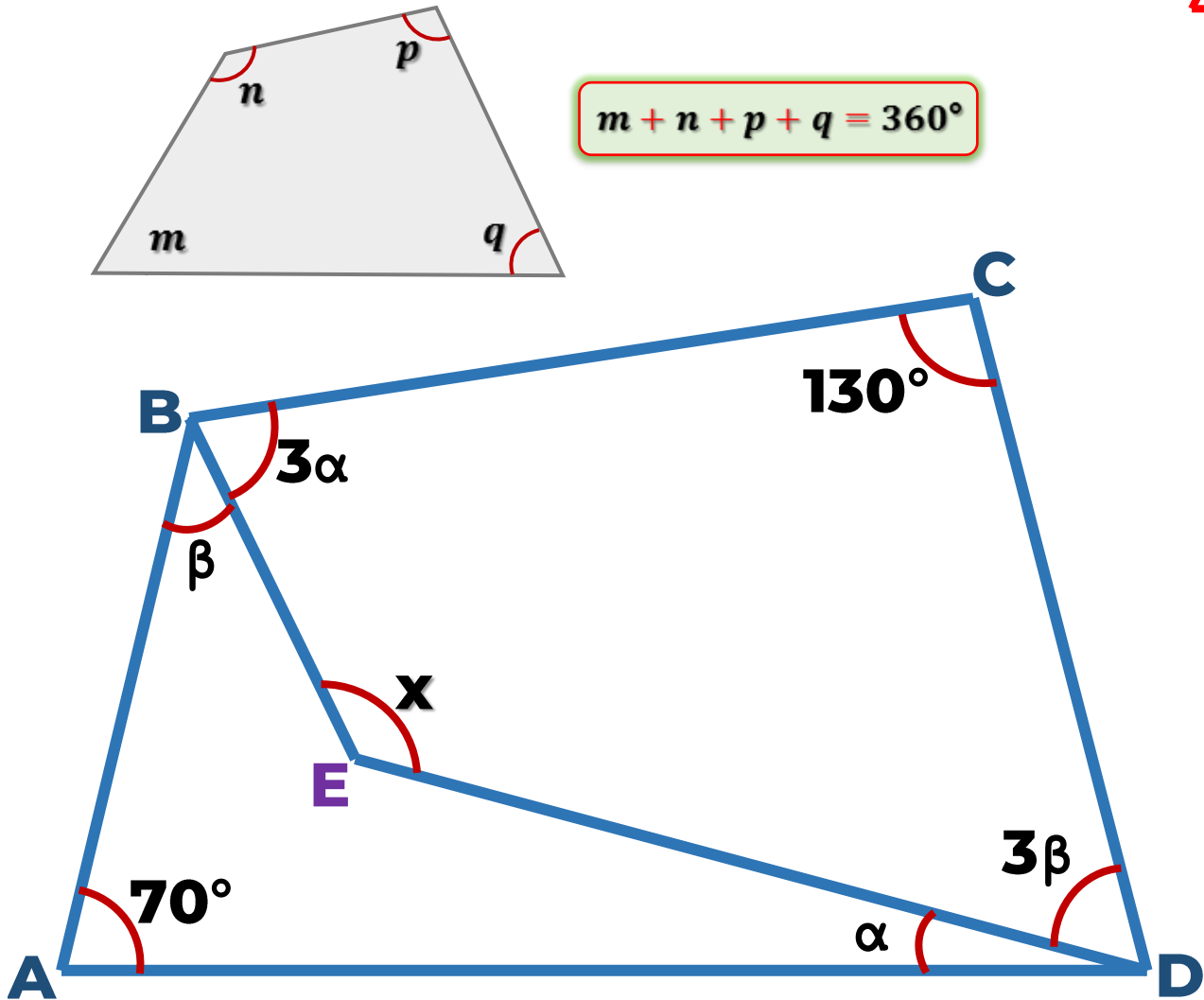


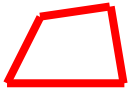
• $\triangle BDE$: Notable de 37° y 53°



$x = 53^\circ$

7. En la figura, halle el valor de x.



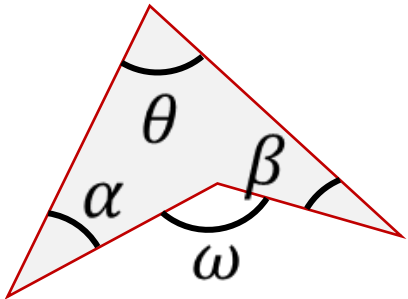
•  **ABCD :**

$$70^{\circ} + \beta + 3\alpha + 130^{\circ} + 3\beta + \alpha = 360^{\circ}$$


$$4\alpha + 4\beta + 200^{\circ} = 360^{\circ}$$

$$\cancel{4\alpha} + \cancel{4\beta} = \cancel{160^{\circ}}$$

$$\alpha + \beta = 40^{\circ}$$



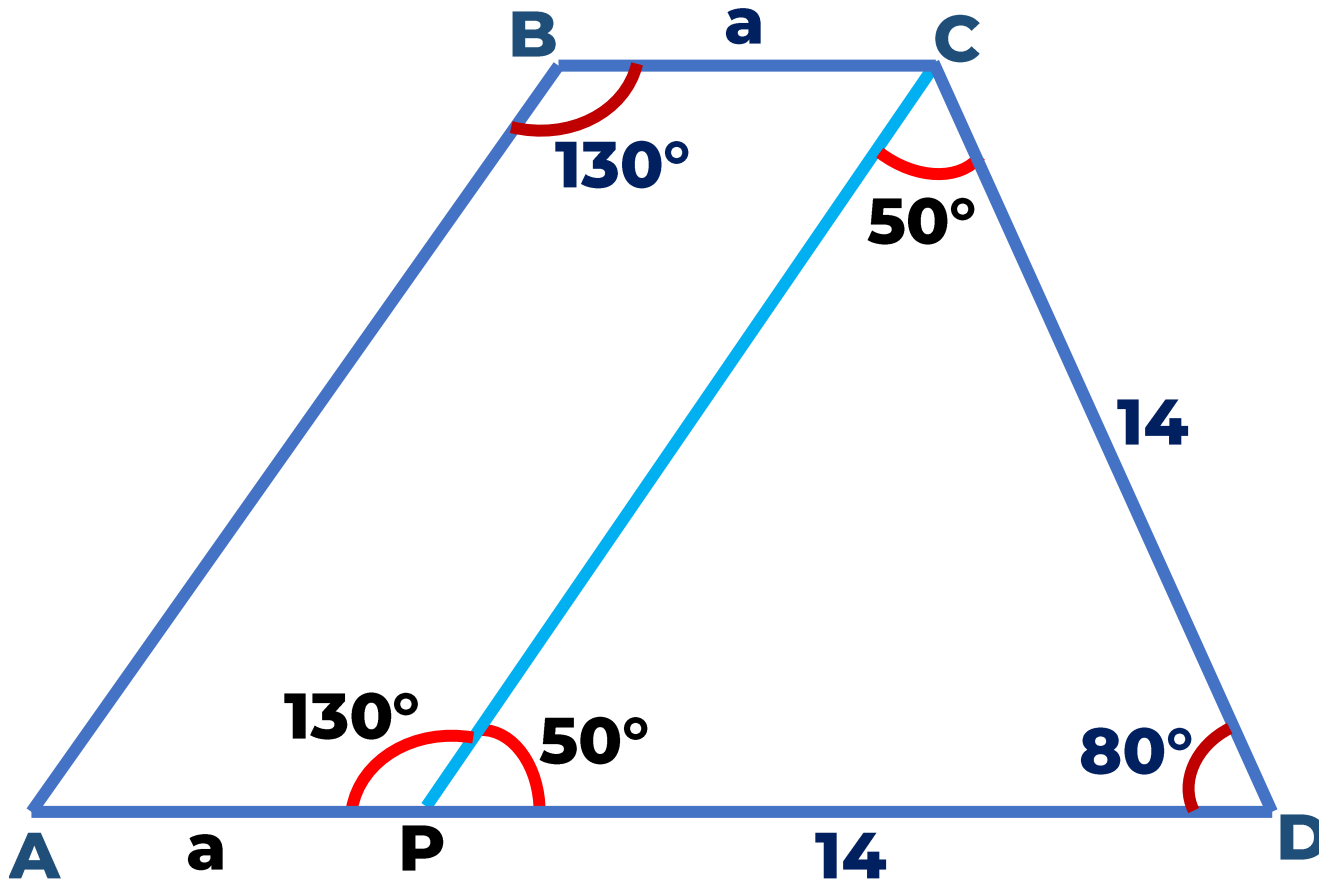
$$\omega = \alpha + \beta + \theta$$

•  **ABED :**

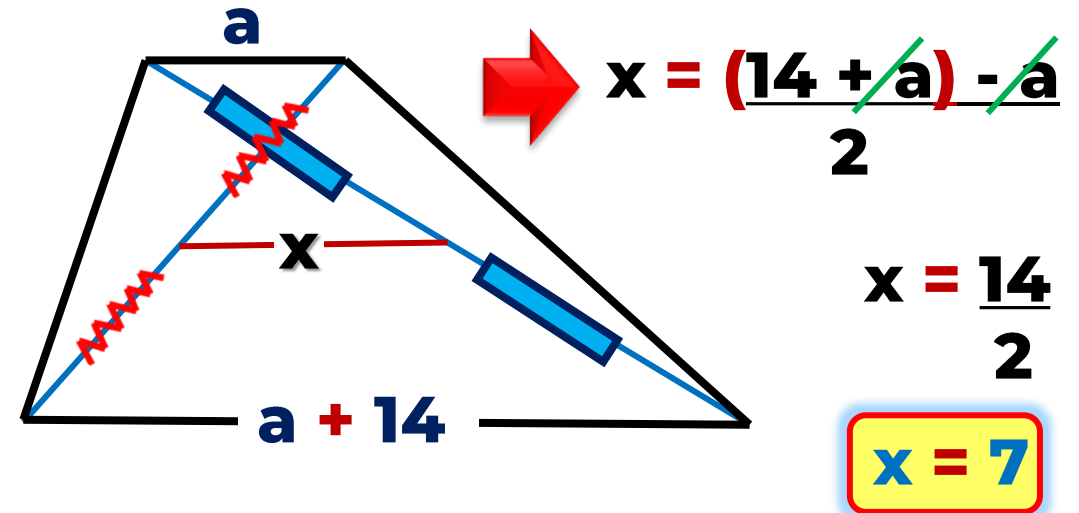
$$x = 70^{\circ} + \underbrace{\beta + \alpha}_{40^{\circ}}$$

$$x = 110^{\circ}$$

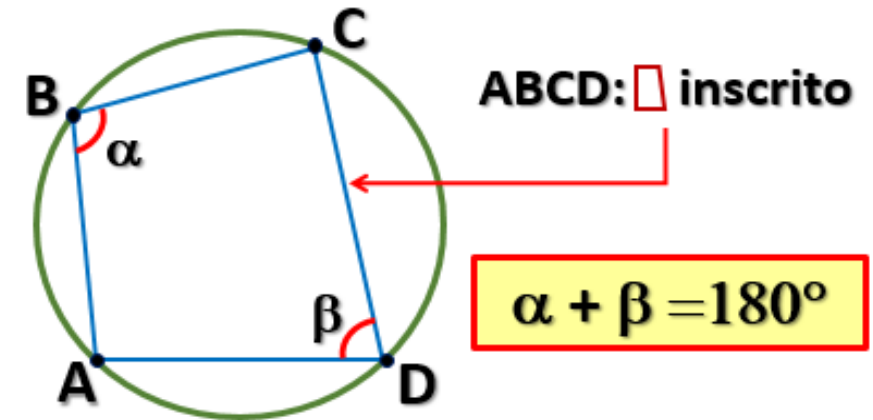
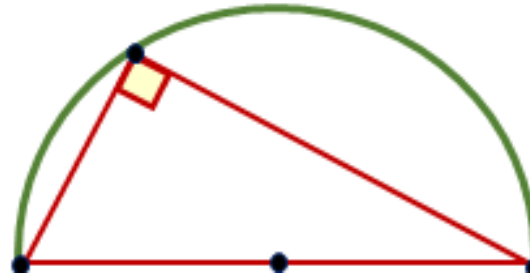
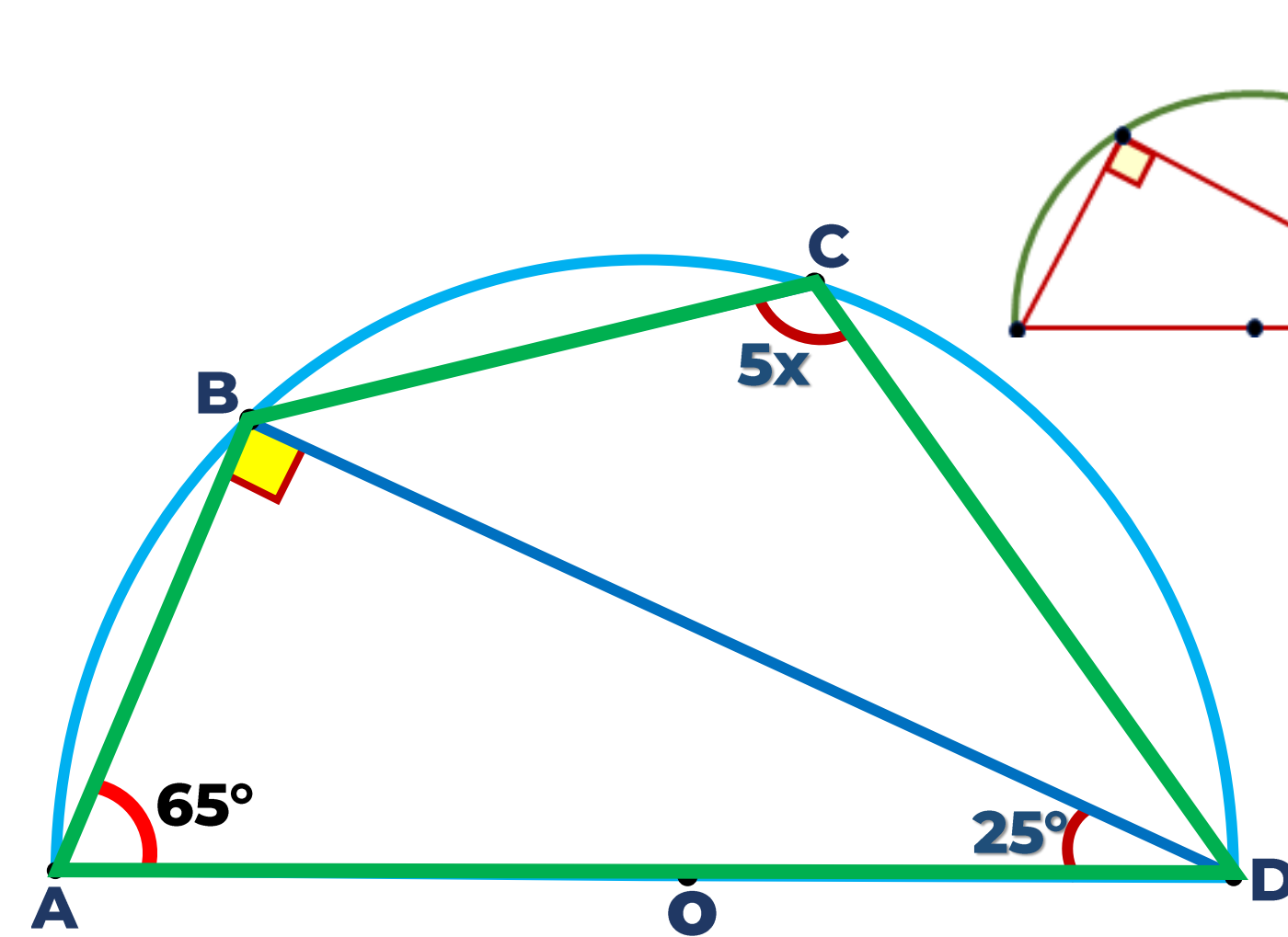
8. En el trapecio ABCD ($\overline{BC} \parallel \overline{AD}$), halle la medida del segmento que tiene por extremos a los puntos medios de las diagonales.



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



9. En la figura O es centro, halle el valor de x.



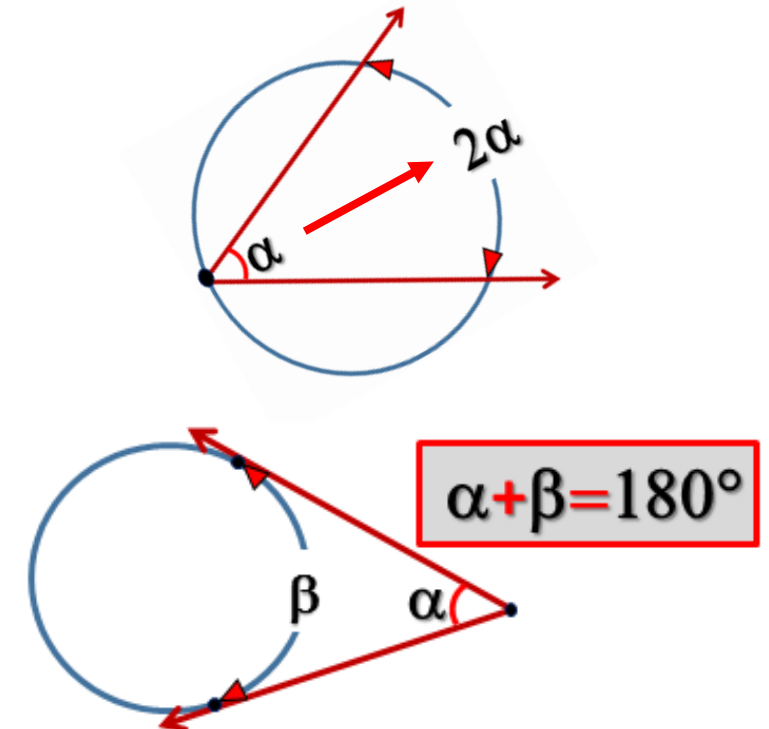
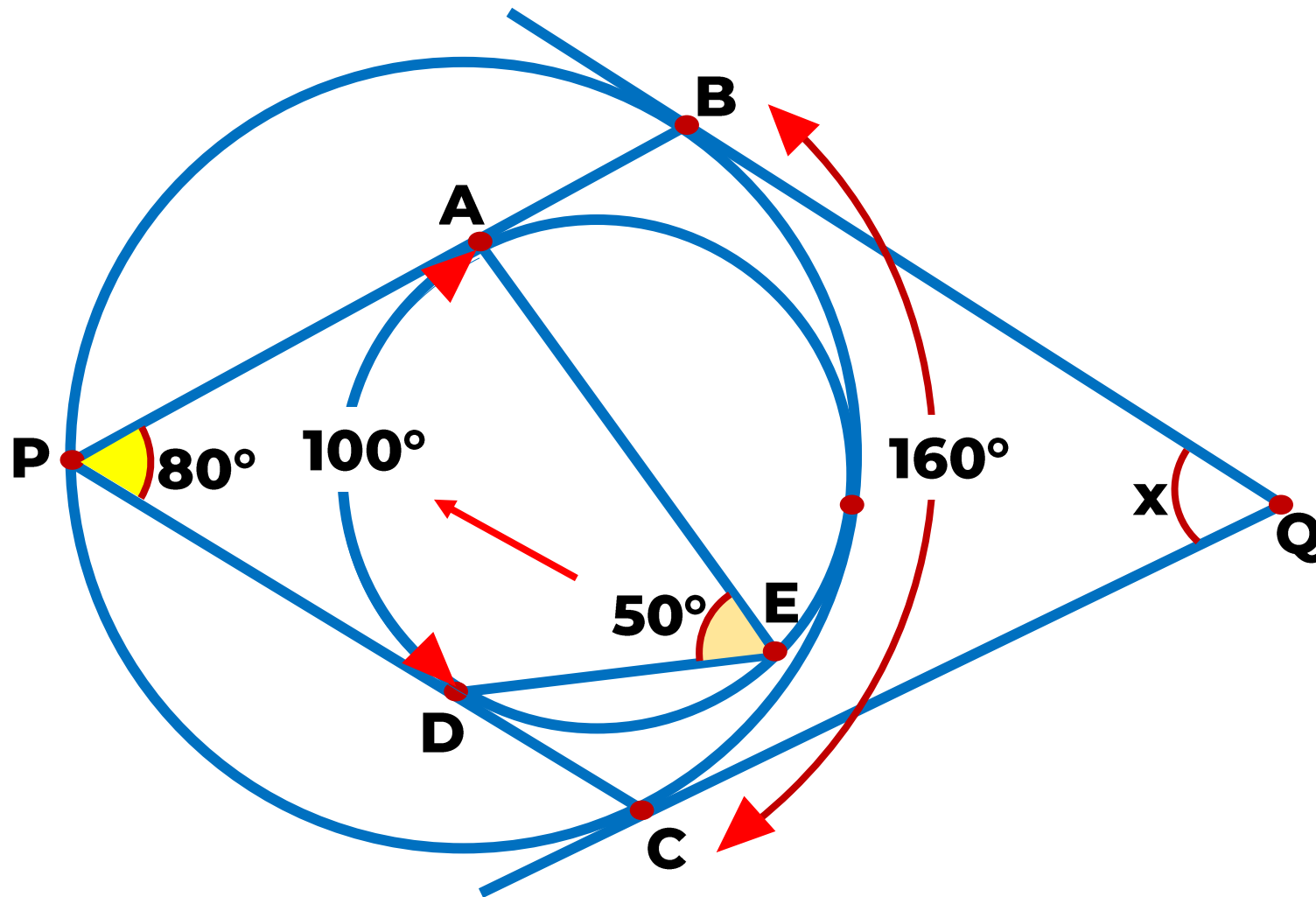
• ABCD :  Inscrito

 $5x + 65^\circ = 180^\circ$

$$5x = 115^\circ$$

$x = 23^\circ$

10. En la figura, A,B,C y D son puntos de tangencia. Halle el valor de x.



$\Rightarrow x + 160^\circ = 180^\circ$

$x = 20^\circ$