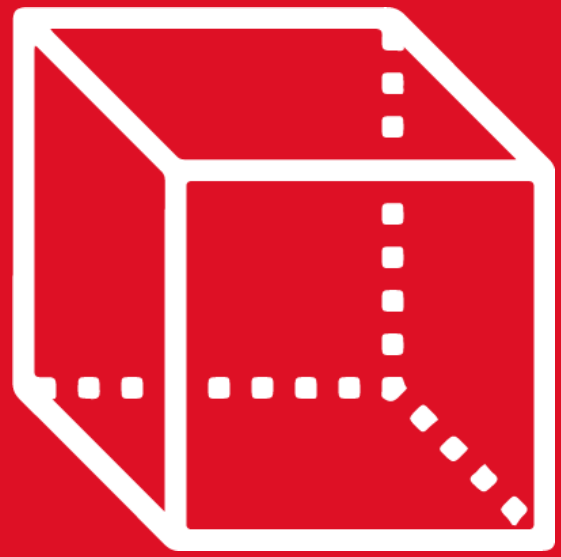
GEOMETRÍA

Capítulo 4

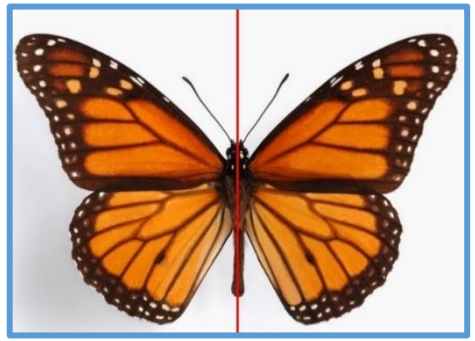


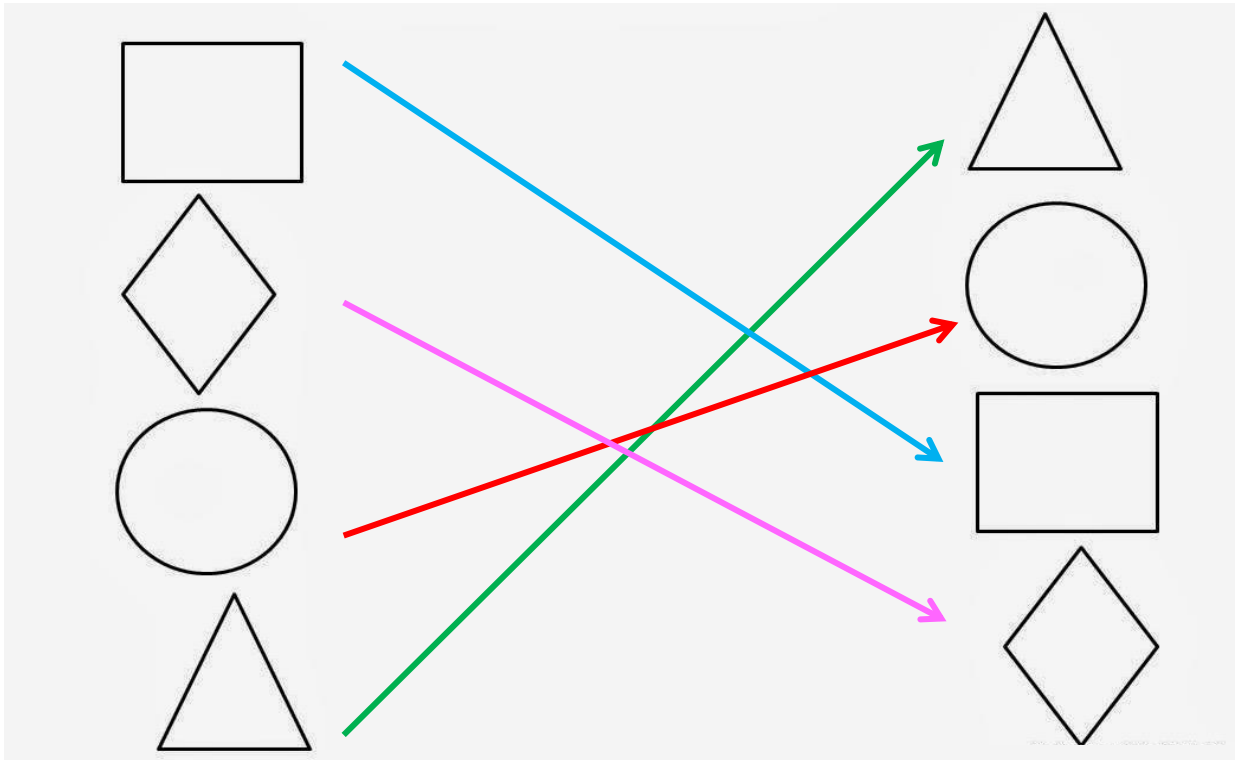
4th
SECONDARY

APLICACIONES DE CONGRUENCIA

SACO OLIVEROS

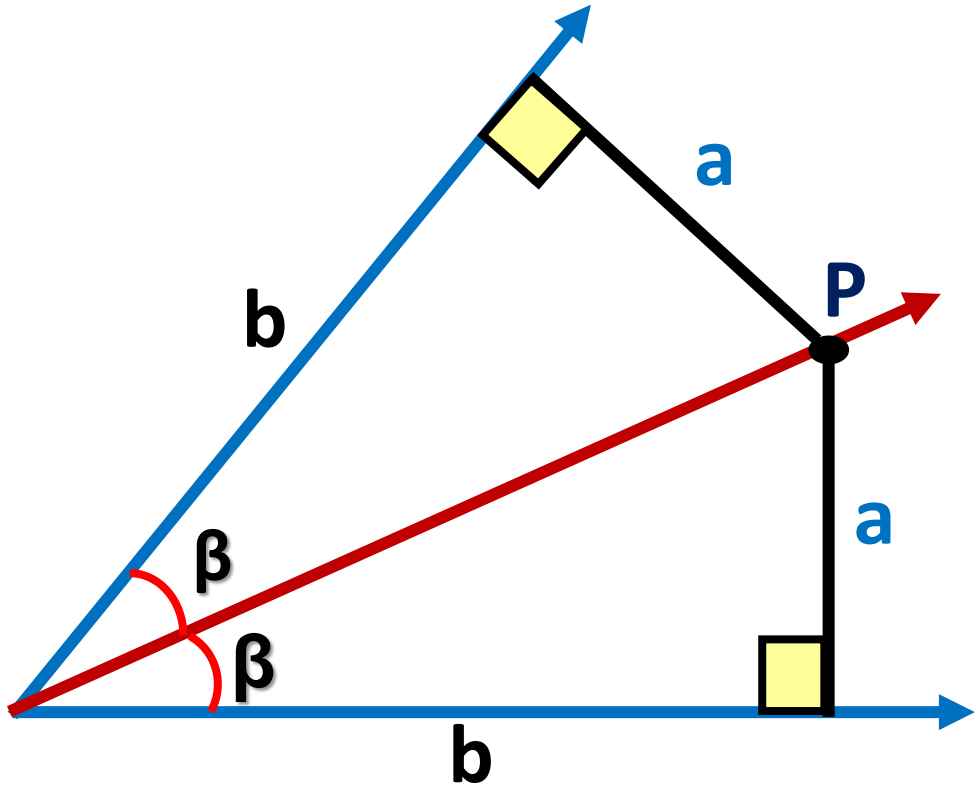
MOTIVATING | STRATEGY



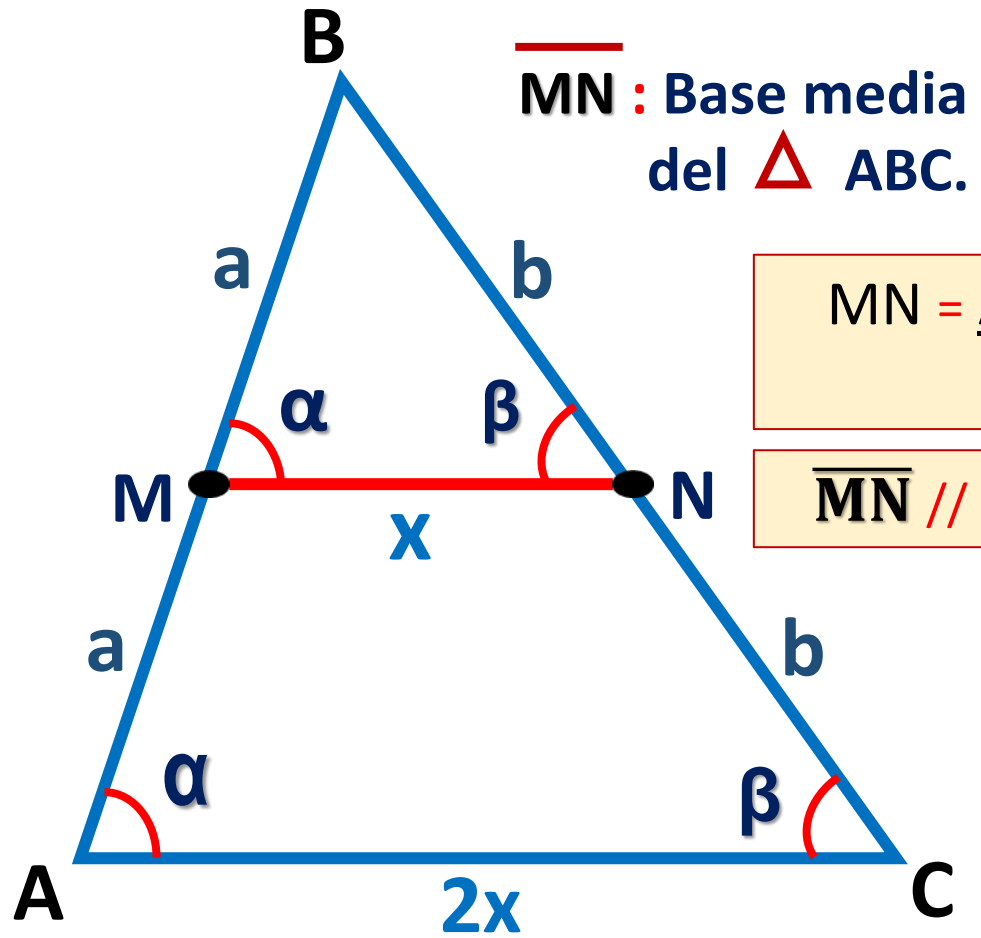


Aplicaciones de la congruencia

1 TEOREMA DE LA BISECTRIZ



2 TEOREMA DE LA BASE MEDIA



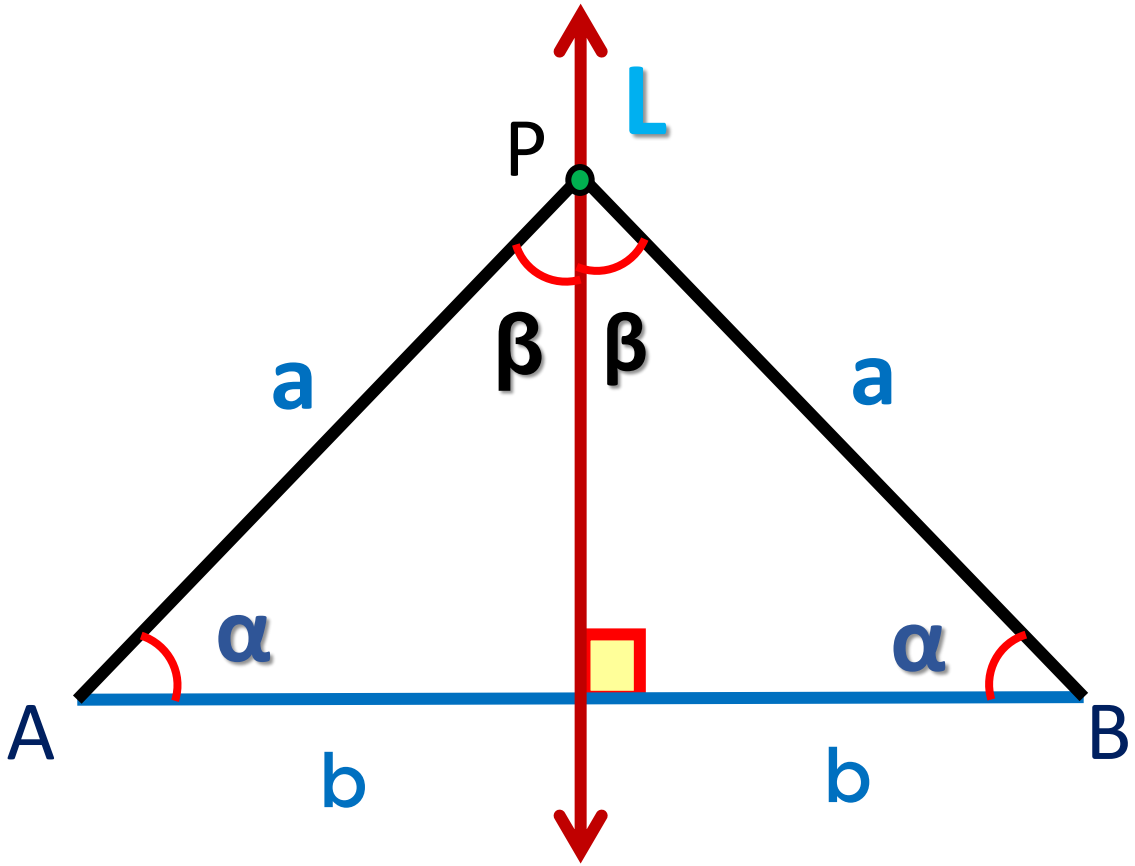
$\overline{MN}$: Base media del $\triangle$ ABC.

$$MN = \frac{AC}{2}$$

$$\overline{MN} \parallel \overline{AC}$$

3 TEOREMA DE LA MEDIATRIZ

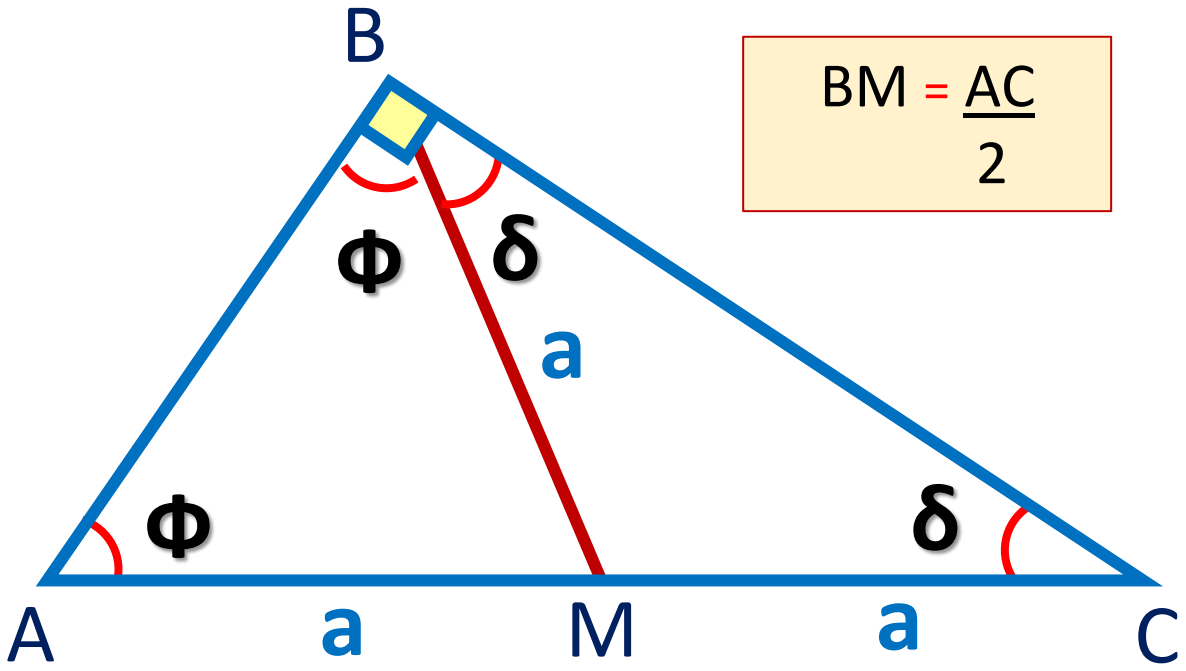
$\overleftrightarrow{L}$: Mediatriz del $\overline{AB}$



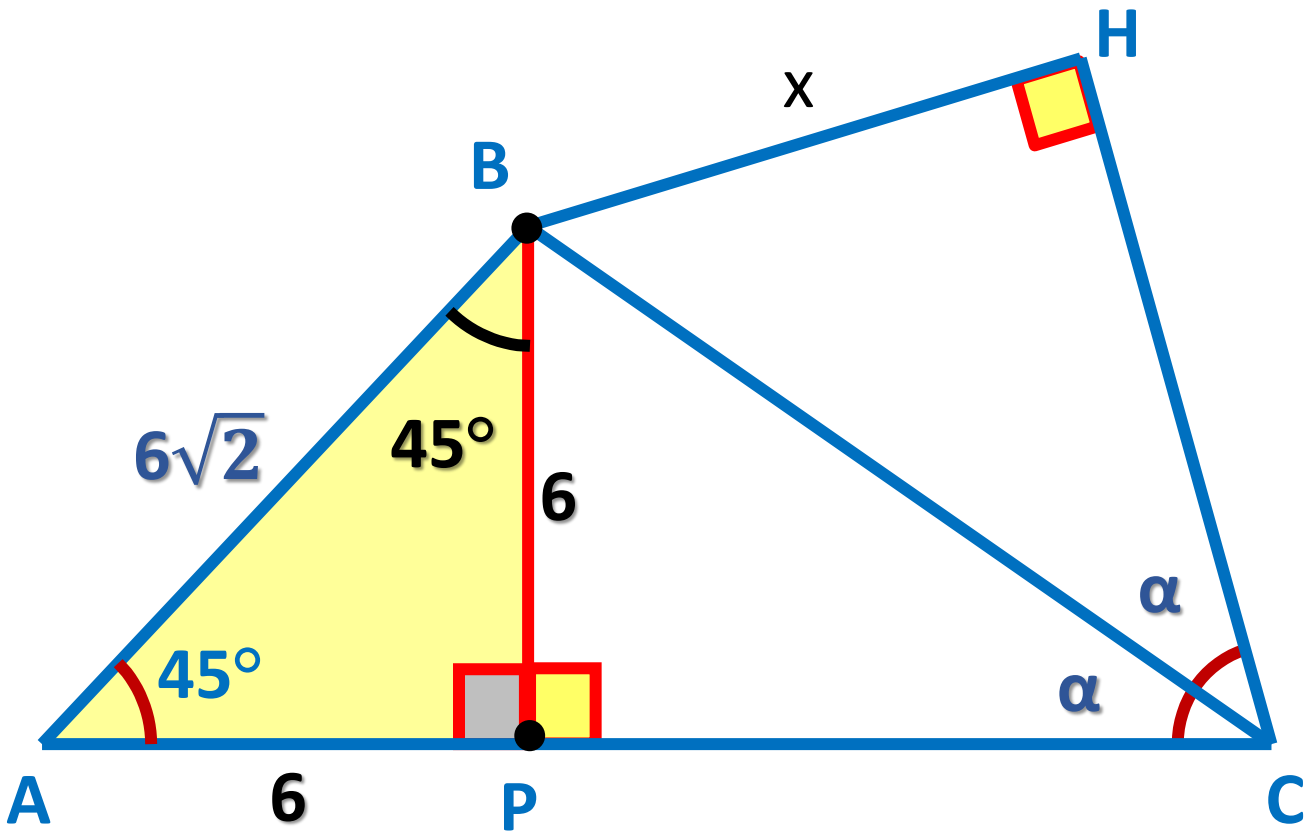
4 TEOREMA DE LA MEDIANA RELATIVA A LA HIPOTENUSA

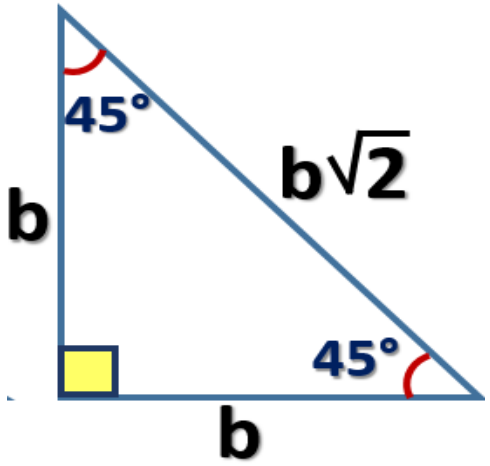
$\overline{BM}$: Mediana relativa a la hipotenusa.

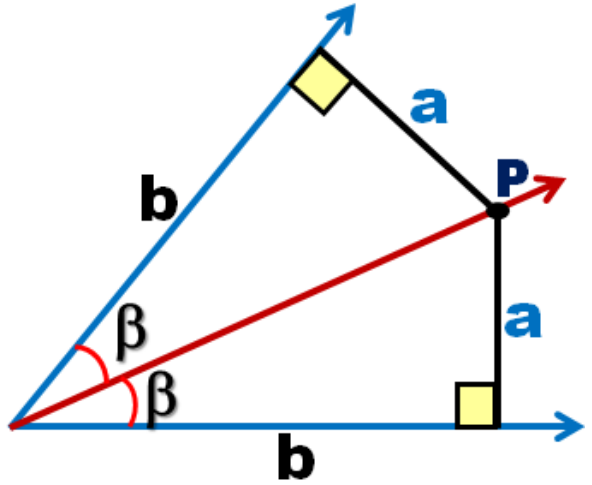
$$BM = \frac{AC}{2}$$



1. En el gráfico, halle BH.

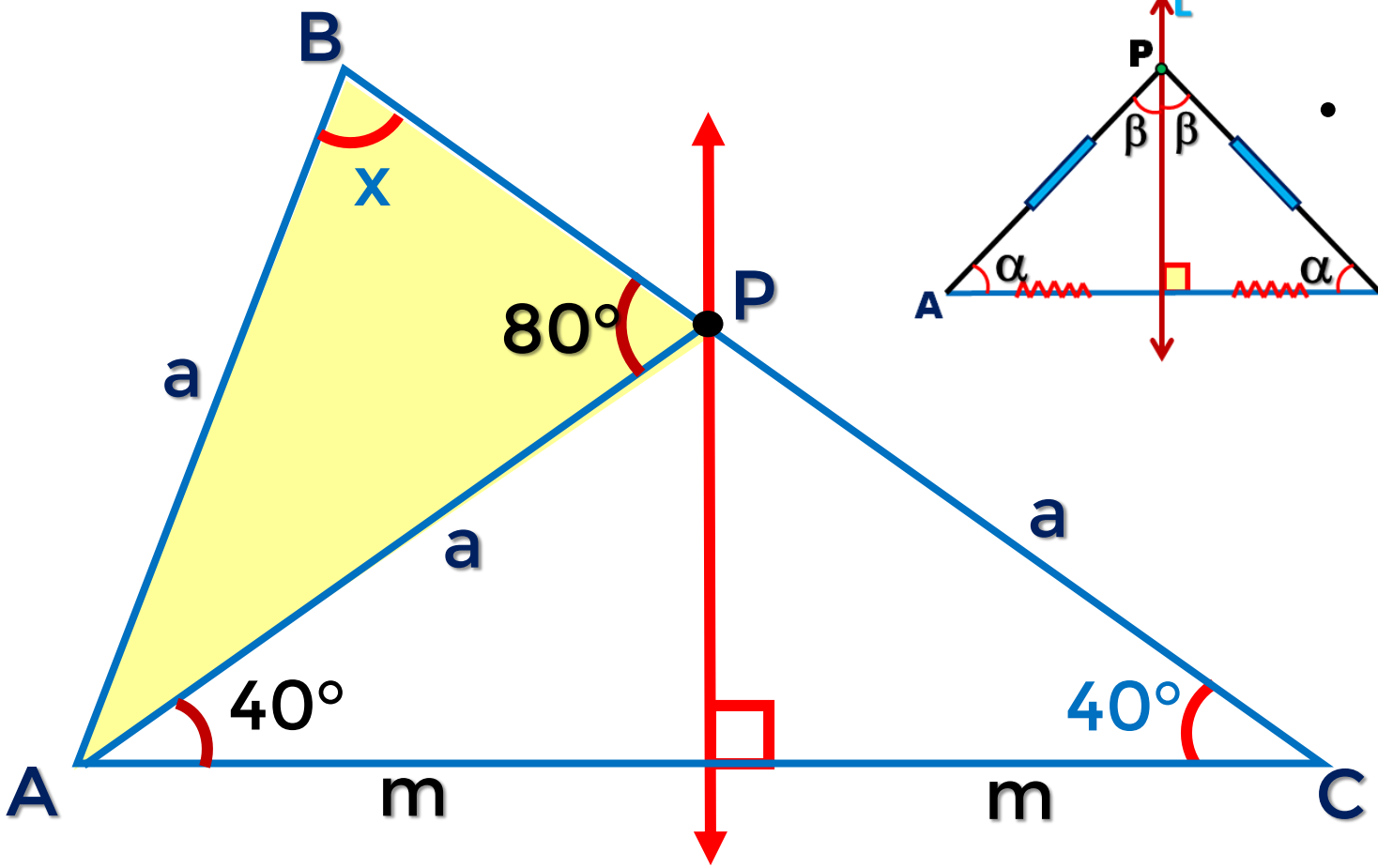




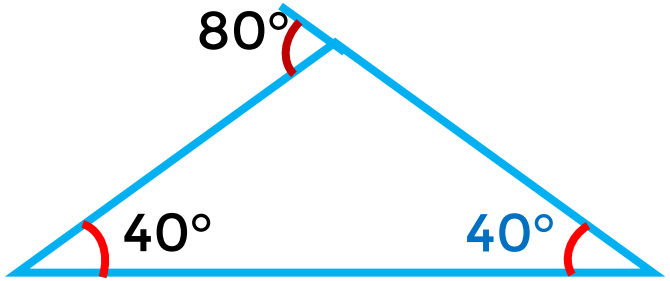


$x = 6$

2. En un triángulo ABC, donde la m∢BCA = 40°, la mediatriz de $\overline{AC}$ intersecta a $\overline{BC}$ en P, tal que AB = PC. Halle la m∢ABP.



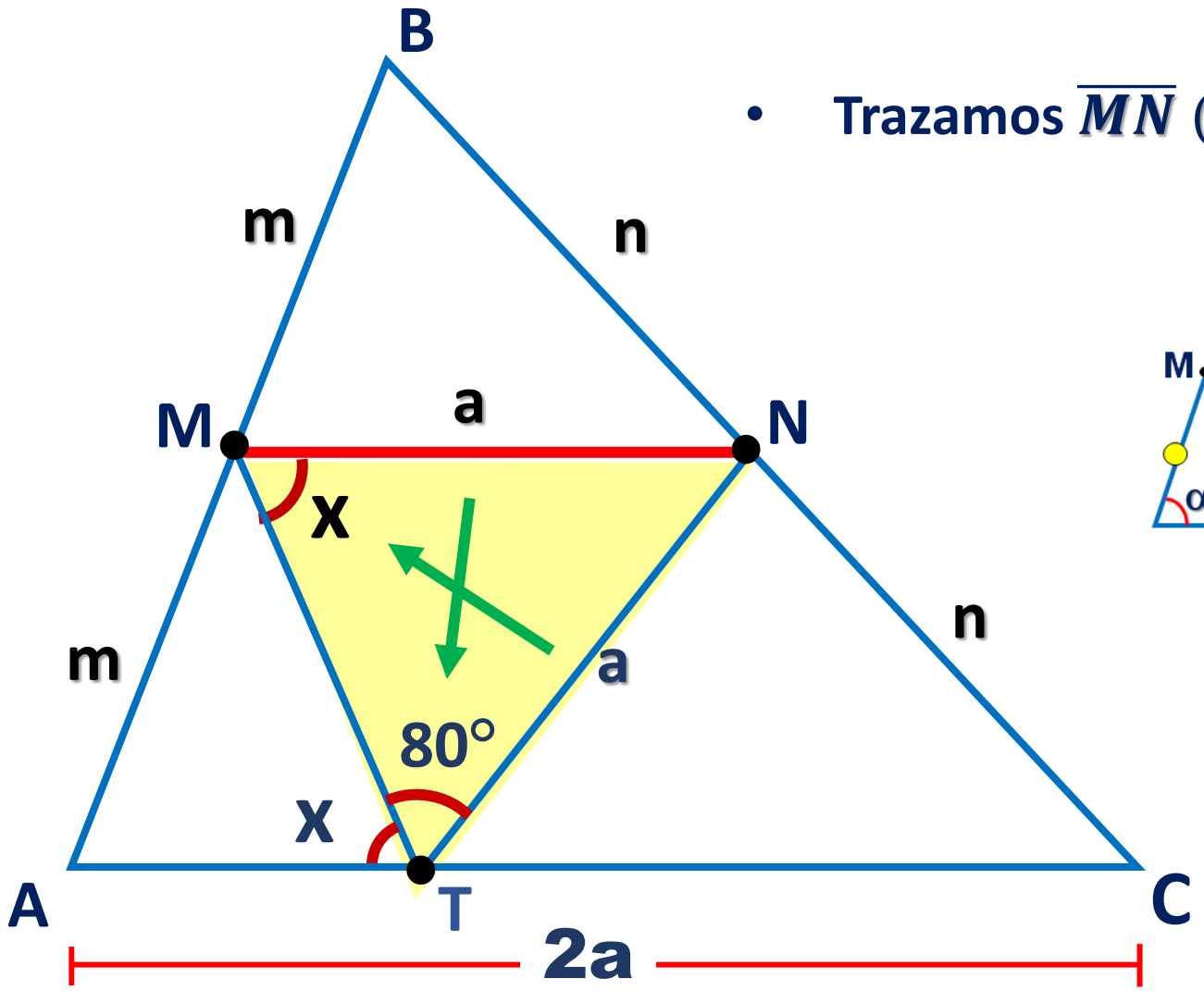
- Teorema de la mediatriz.



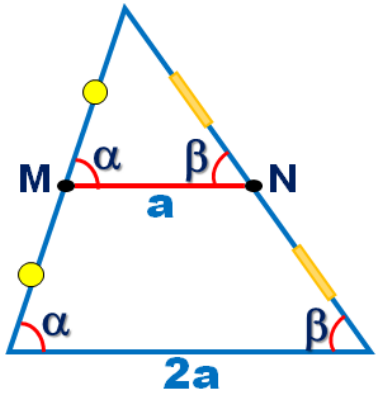
- △PAB: Isósceles

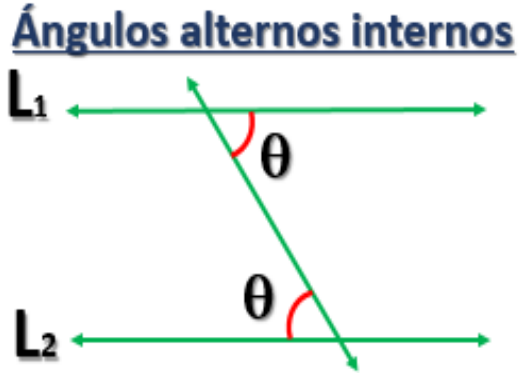
x = 80°

3. En el gráfico, halle el valor de *x*.



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

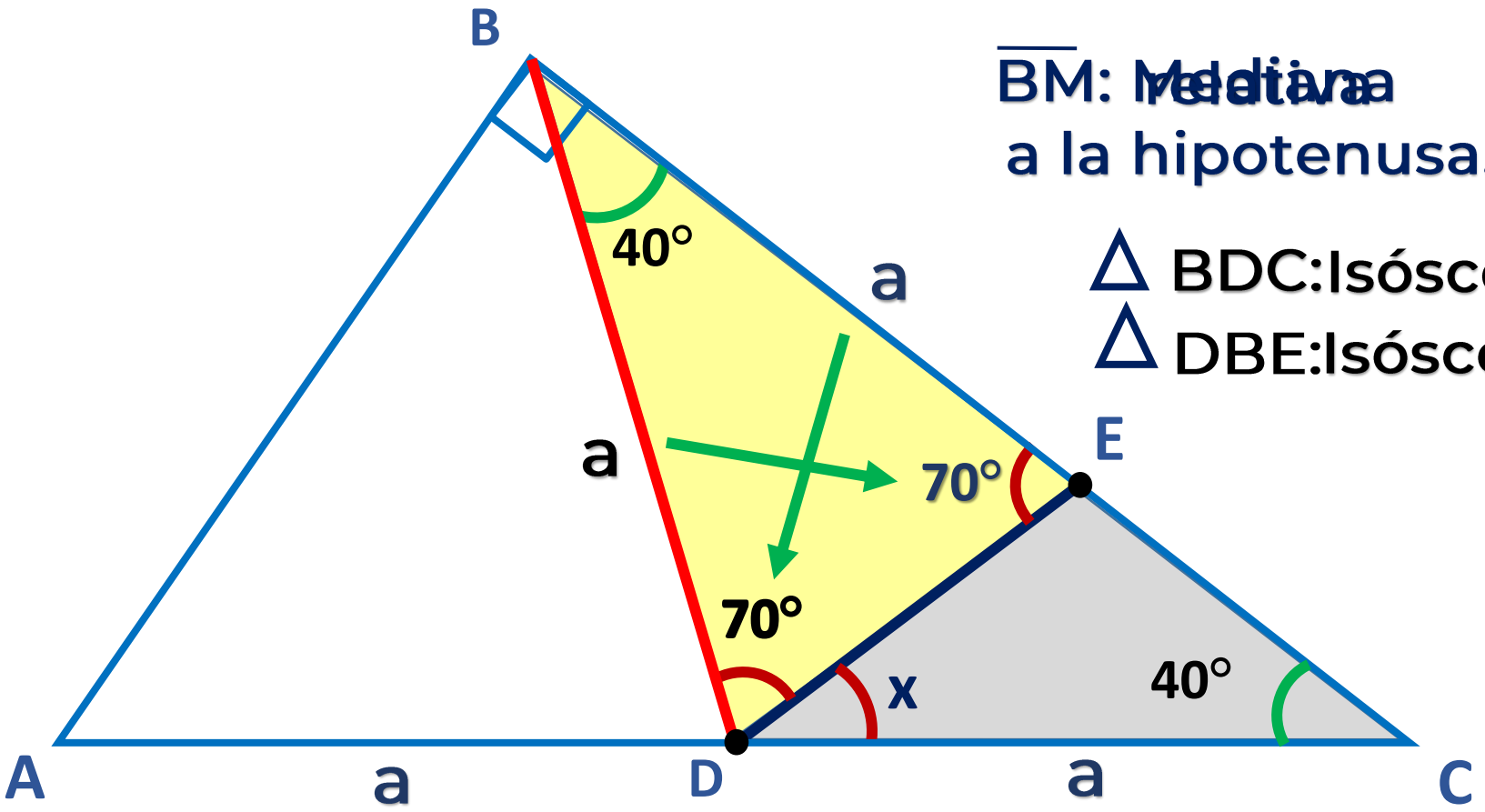




- $\triangle$MNT: Isósceles

$x = 80°$

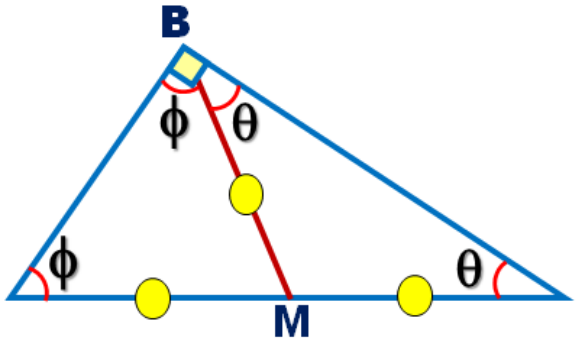
4. En un triángulo rectángulo ABC recto en B, se ubican los puntos D en $\overline{AC}$ y E en $\overline{BC}$, tal que: AD = DC = BE y m∢BED = 70°. Halle la m∢EDC.

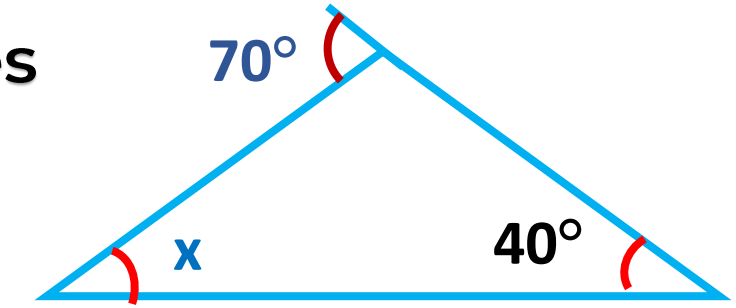


$\overline{BM}$: Mediana relativa a la hipotenusa.

△ BDC: Isósceles

△ DBE: Isósceles

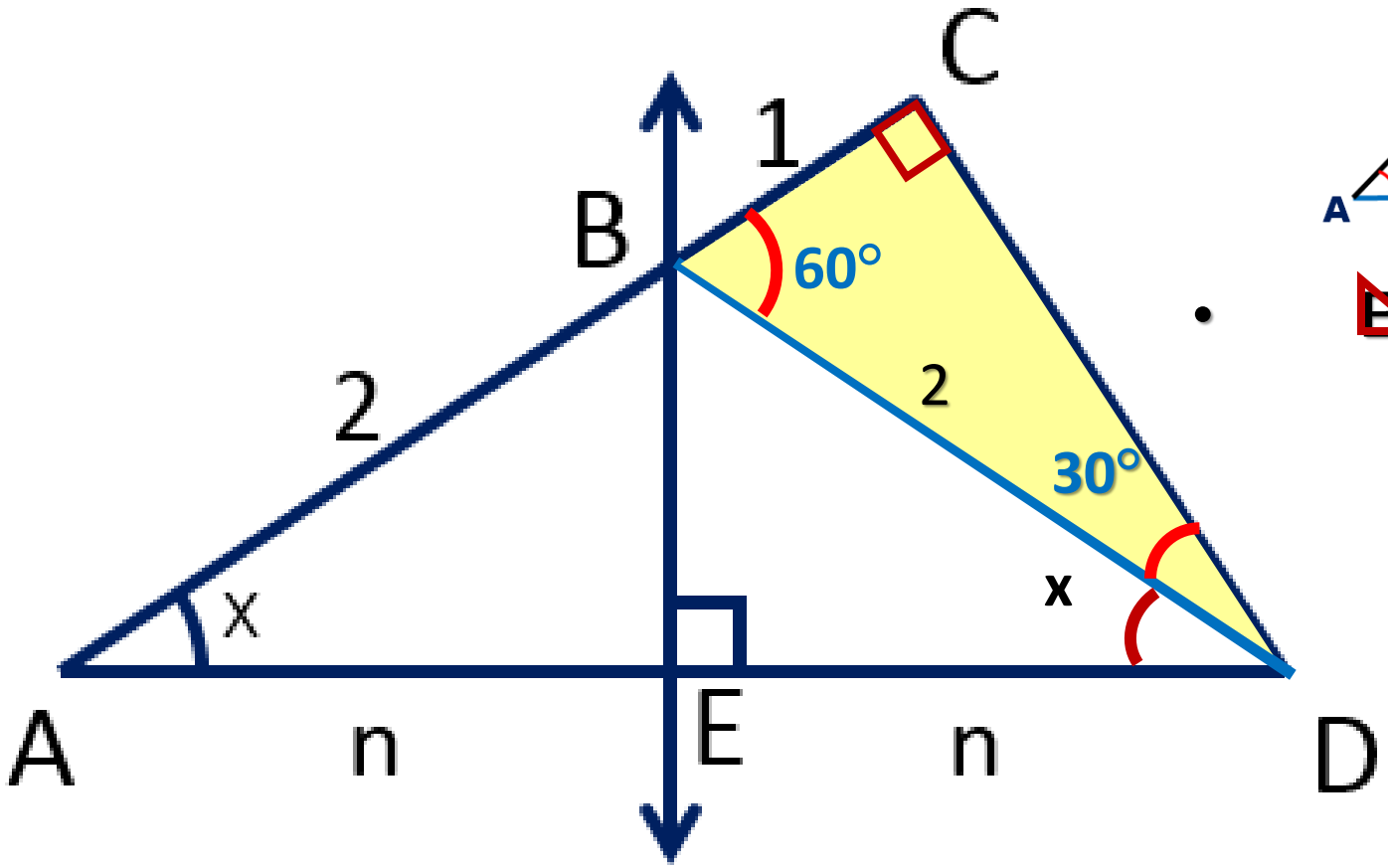


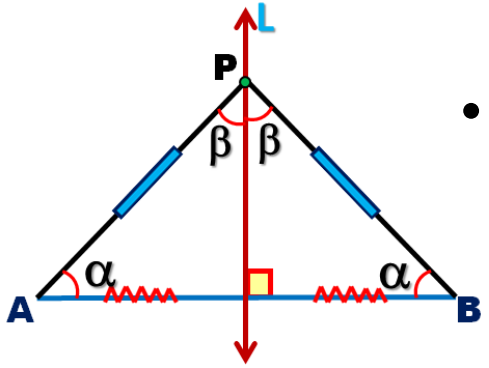


x + 40° = 70°

x = 30°

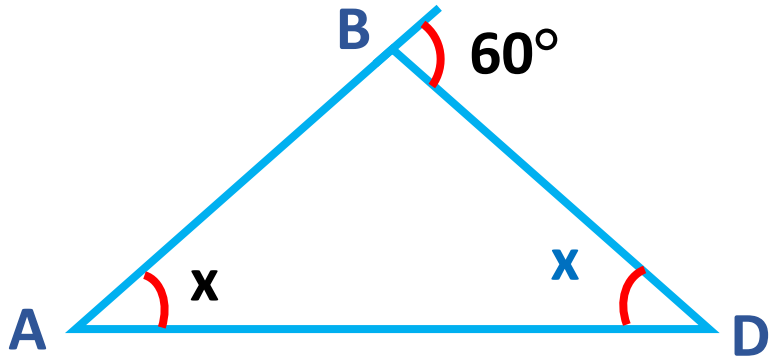
5. En el gráfico, AB = 2 y BC = 1. Halle el valor de x.





- **Teorema de la mediatriz.**

- BCD: Notable 30°y 60°

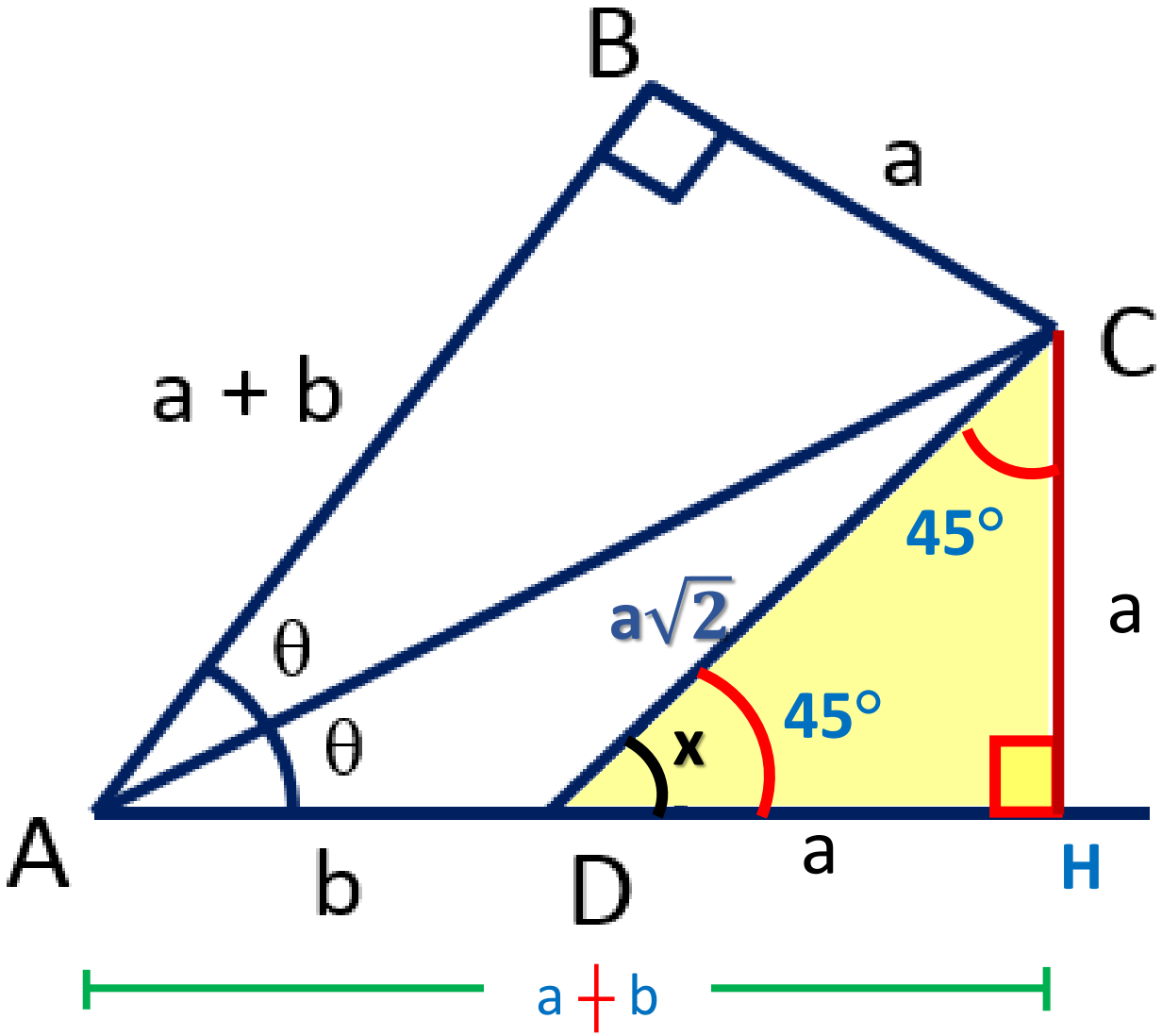


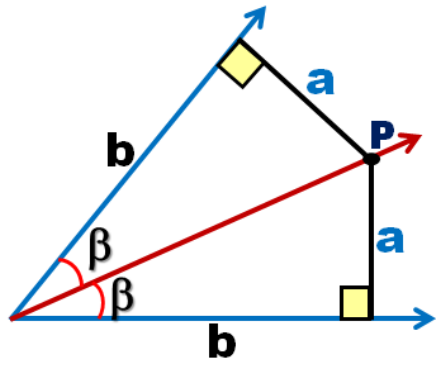
$x + x = 60°$

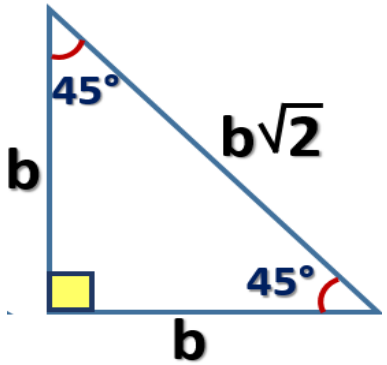
$2x = 60°$

$x = 30°$

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



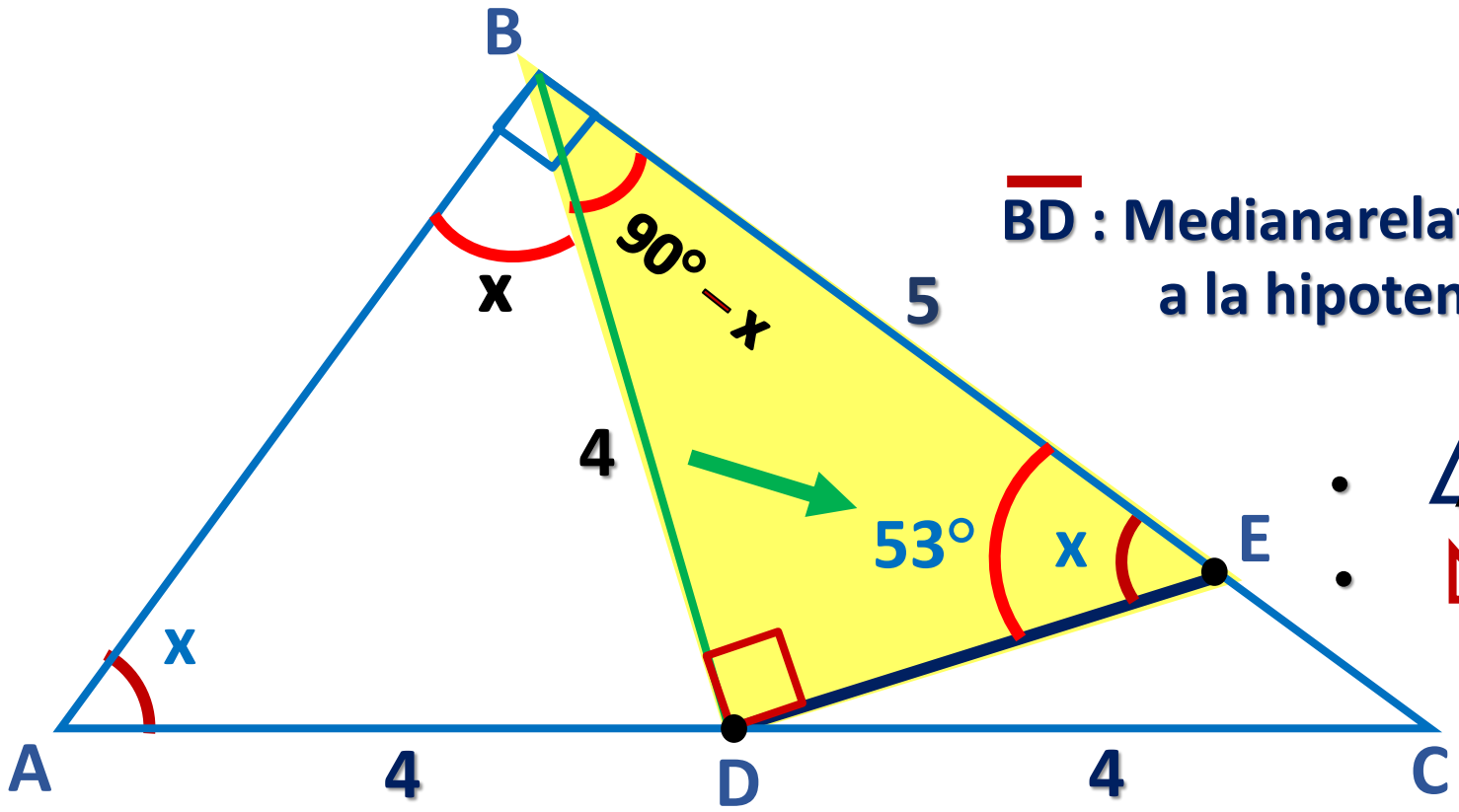




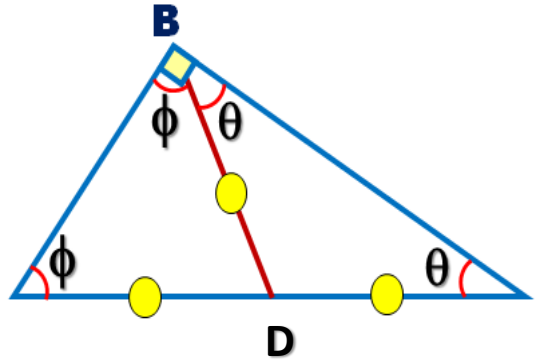
- DHC: Notable de 45°y 45°

$x = 45°$

7. 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 = 4 y BE = 5. Si m∢BAD = m∢BED = x, halle el valor de x.



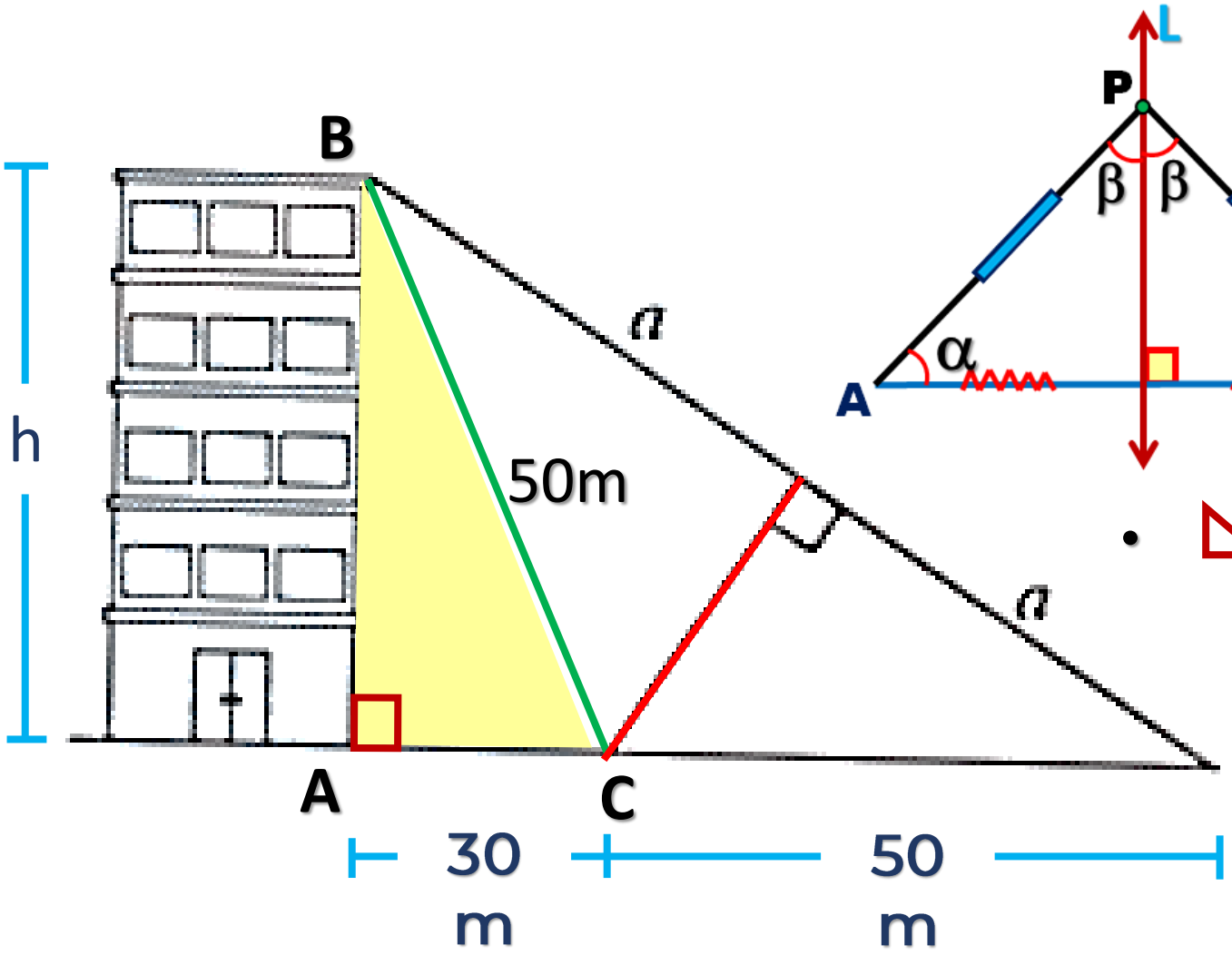
$\overline{BD}$: Medianarelativa a la hipotenusa.



- △ABD : Isósceles
- △BDE: Notable de 37°y 53°

x = 53°

8. En la figura halle la altura del edificio.



- Teorema de la mediatriz.
- △ABC: Notable de 37° y 53°

h = 40m