VACACIONES DIVERTIÚTILES

ASOCIACIÓN EDUCATIVA
SAGO OLIVEROS

GEOMETRY

Chapter 2

Cuadriláteros

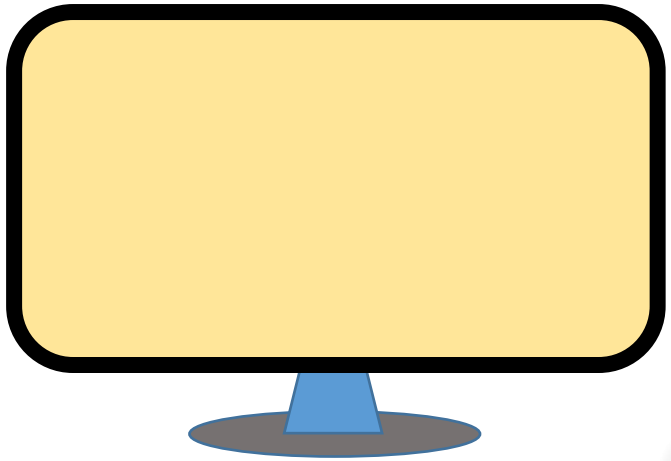
5th
SECONDARY

GEOMETRY

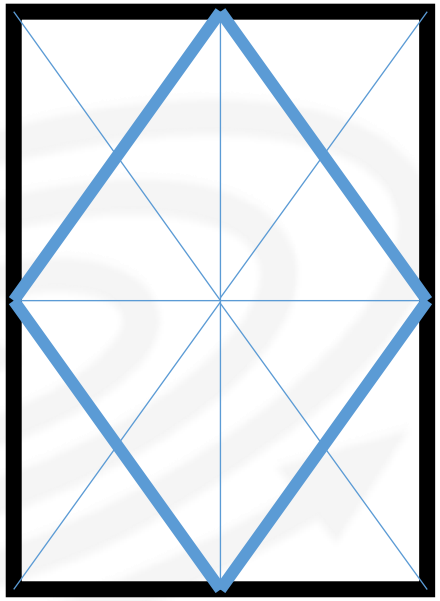
Índice

MOTIVATING STRATEGY

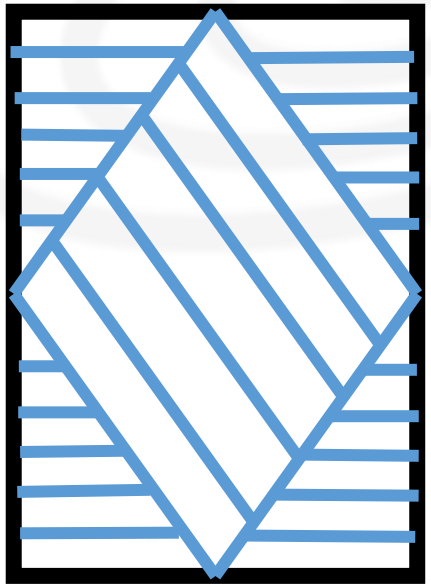
Rectángulo



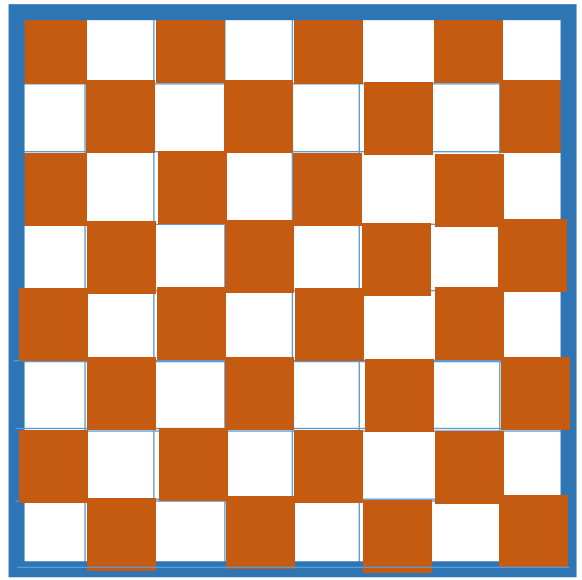
Rombo



Paralelogramo

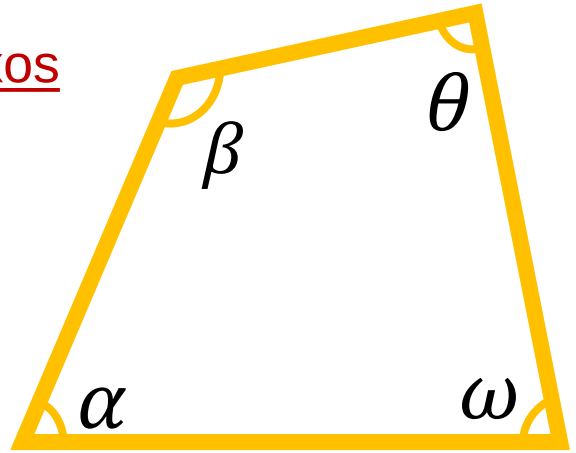


Cuadrado



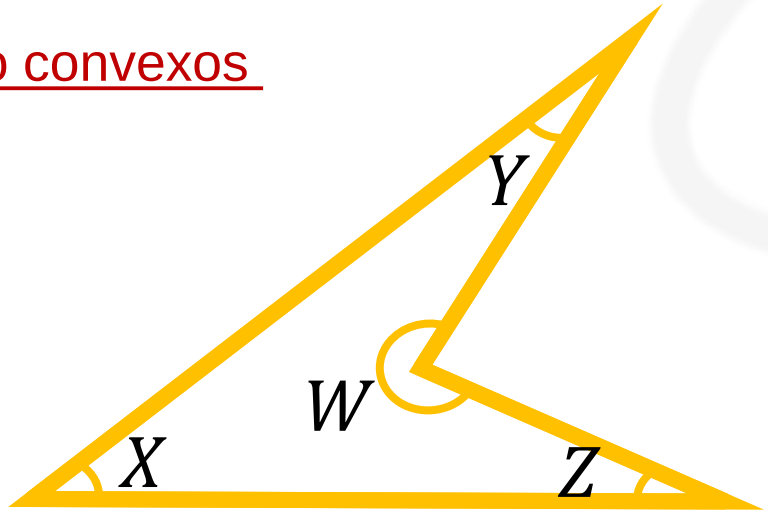
CUADRILÁTERO

Convexos



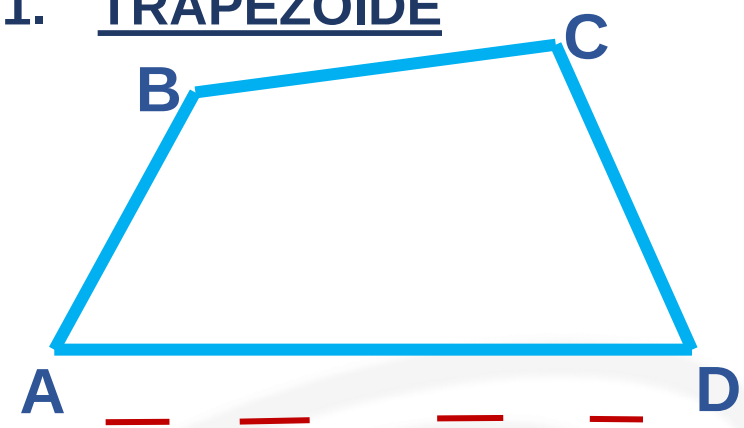
$\alpha+\beta+\theta+\omega= 360^0$

No convexos



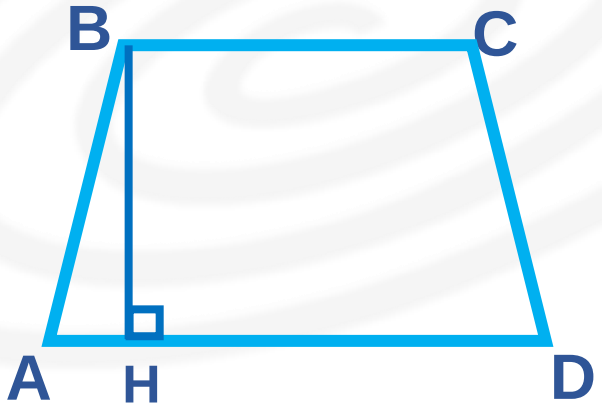
$X + Y + Z + W = 360^0$

1. TRAPEZOIDE



$\overline{AB} \not\parallel \overline{CD}$ y $\overline{BC} \not\parallel \overline{AD}$

2. TRAPECIO



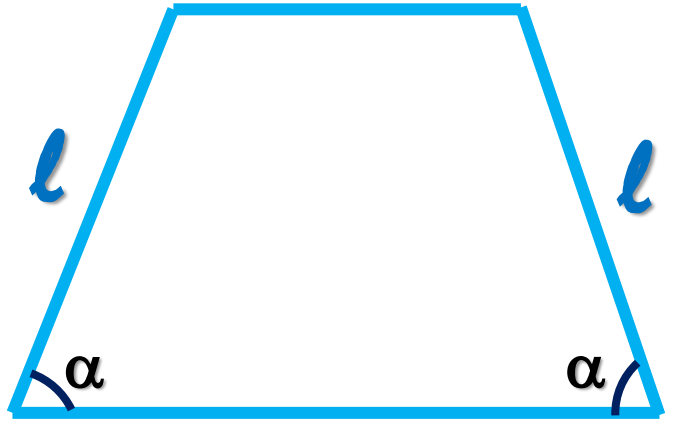
$\overline{BC} \parallel \overline{AD}$

$\overline{BC}$ y $\overline{AD}$: **BASES**

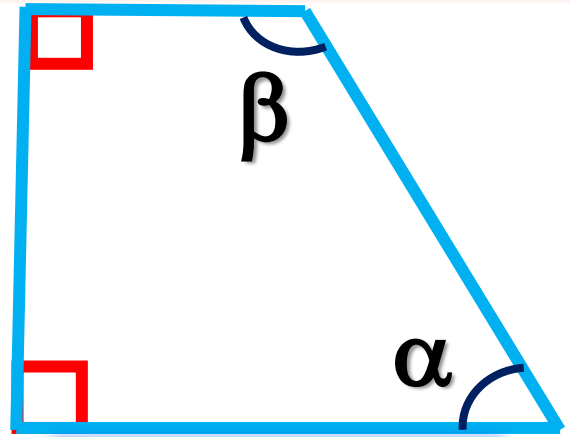
- $\overline{BH}$: **Altura**

Clasificación de trapecios

TRAPECIO ISÓSCELES



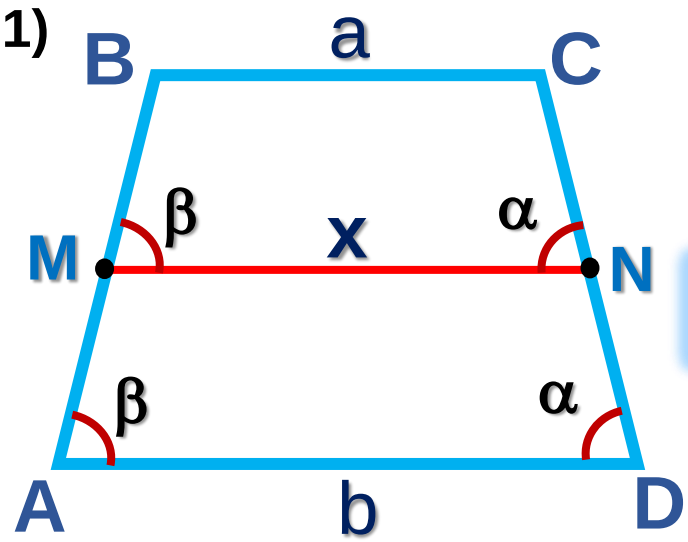
TRAPECIO RECTÁNGULO



$\alpha + \beta = 180°$

Teoremas en el trapecio

1)



$\overline{MN}$: Base media

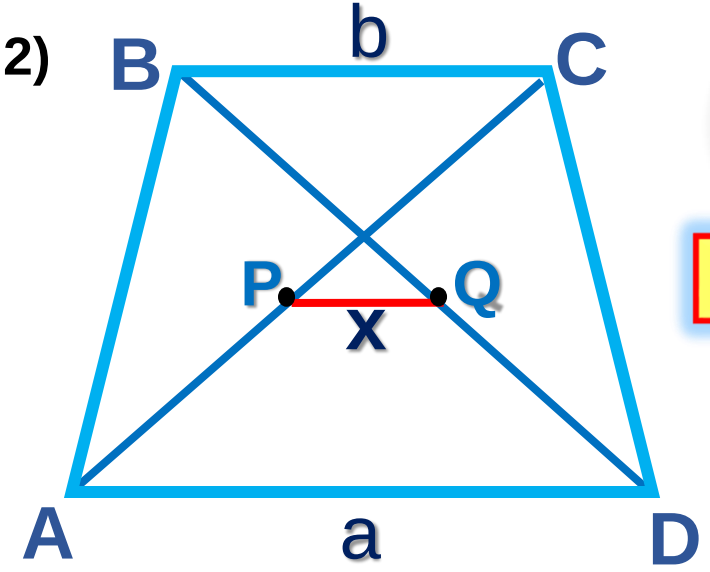
AM = BM

CN = DN

$\overline{AD} \,//\, \overline{BC} \,//\, \overline{MN}$

$$x = \frac{a+b}{2}$$

2)



AP = PC

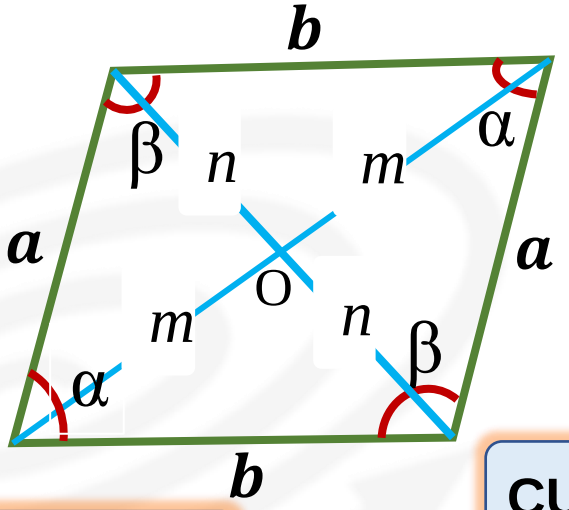
BQ = DQ

$\overline{AD} \,//\, \overline{BC} \,//\, \overline{PQ}$

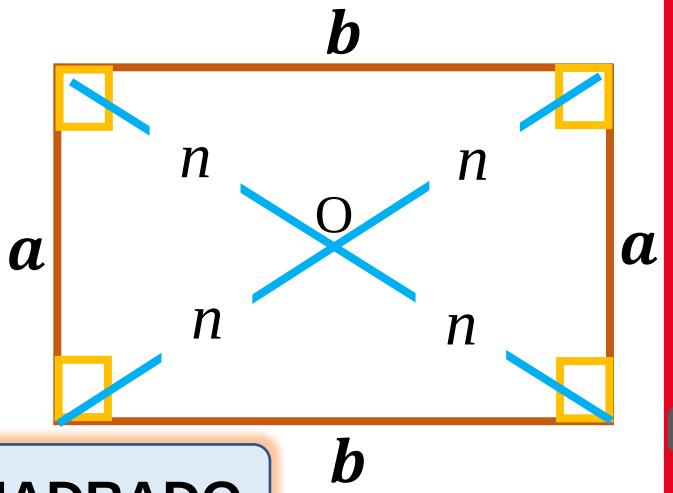
$$x = \frac{a-b}{2}$$

PARALELOGRAMO

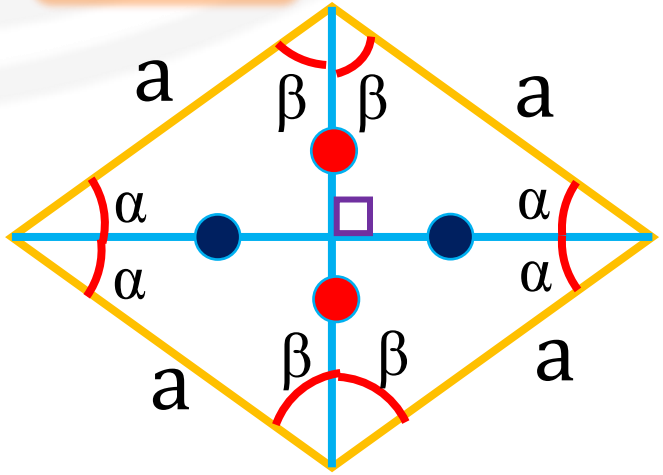
ROMBOIDE



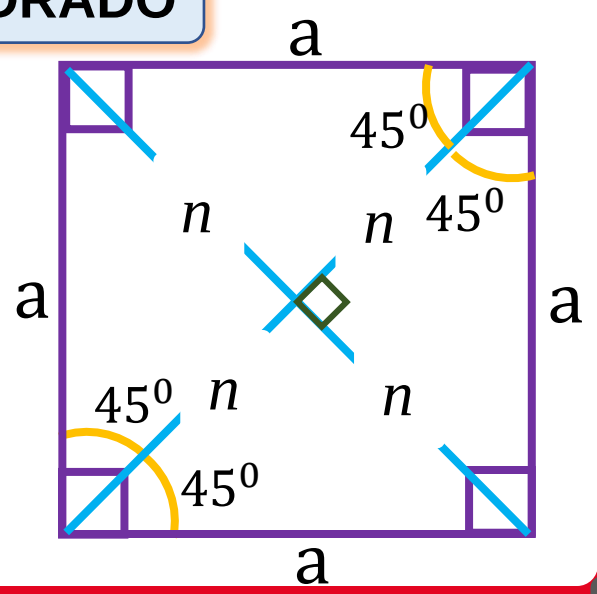
RECTÁNGULO



ROMBO



CUADRADO



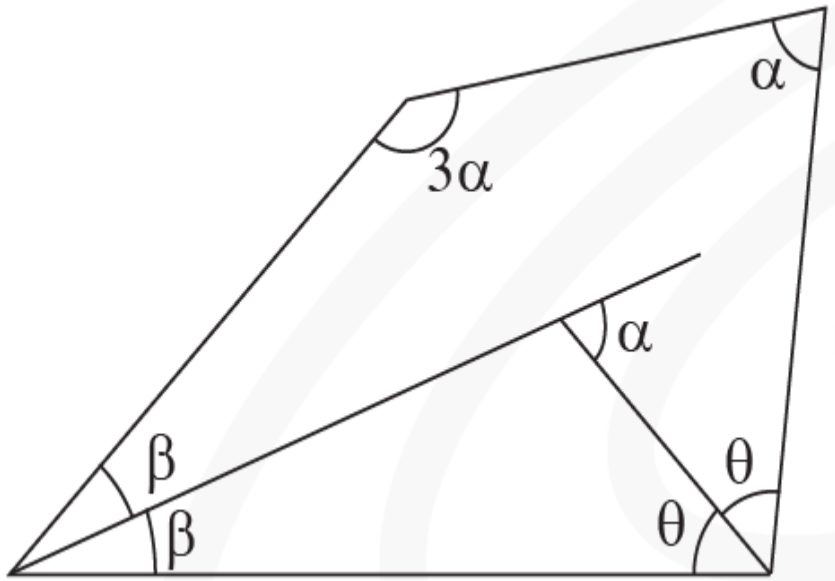
Resolución de Problemas

- Problema 01
- Problema 02
- Problema 03
- Problema 04
- Problema 05

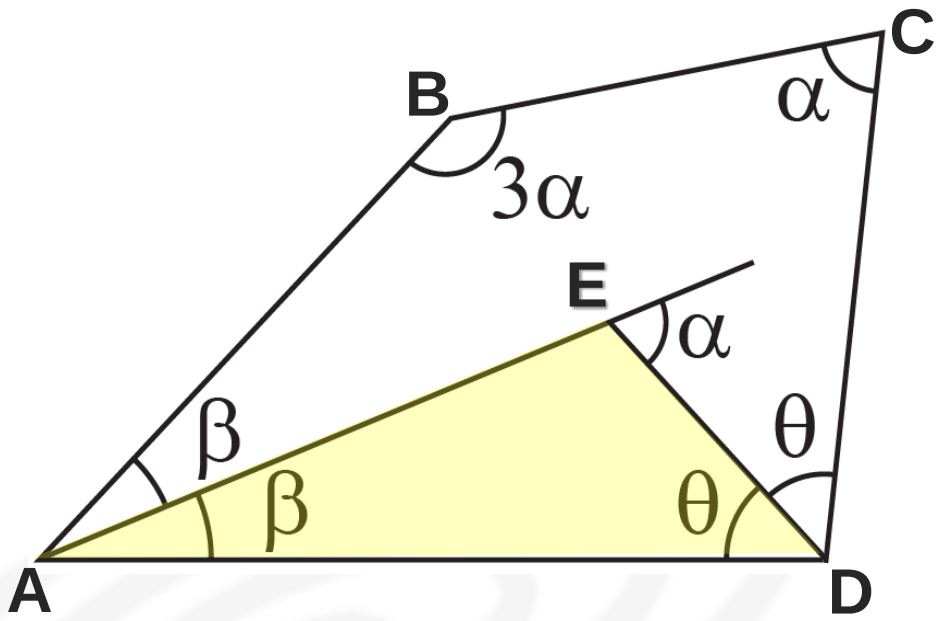
HELICO PRACTICE

Problema 01

En el gráfico, halle el valor de α.



Resolución



- Piden: α
- $\triangle$ AED : $\alpha = \theta + \beta$
- ABCD : $2\theta + 2\beta + 3\alpha + \alpha = 360°$

$$2\theta + 2\beta + 4\alpha = 360°$$

$$\theta + \beta + 2\alpha = 180°$$

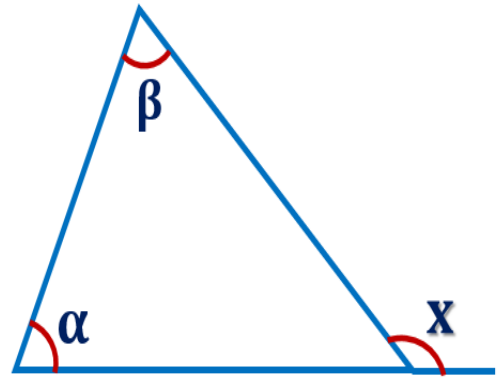
$$\alpha + 2\alpha = 180°$$

$$3\alpha = 180°$$

$$\alpha = 60°$$

Respuesta $\therefore \alpha = 60°$

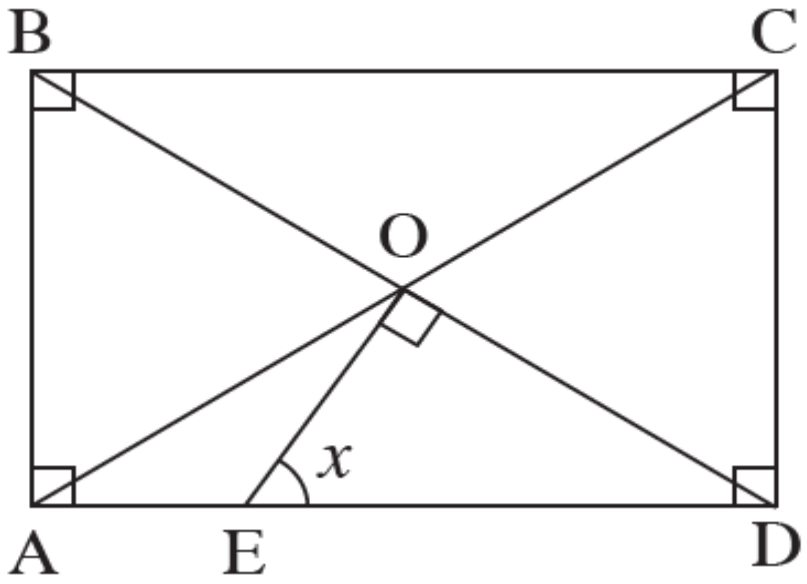
RECORDEMOS



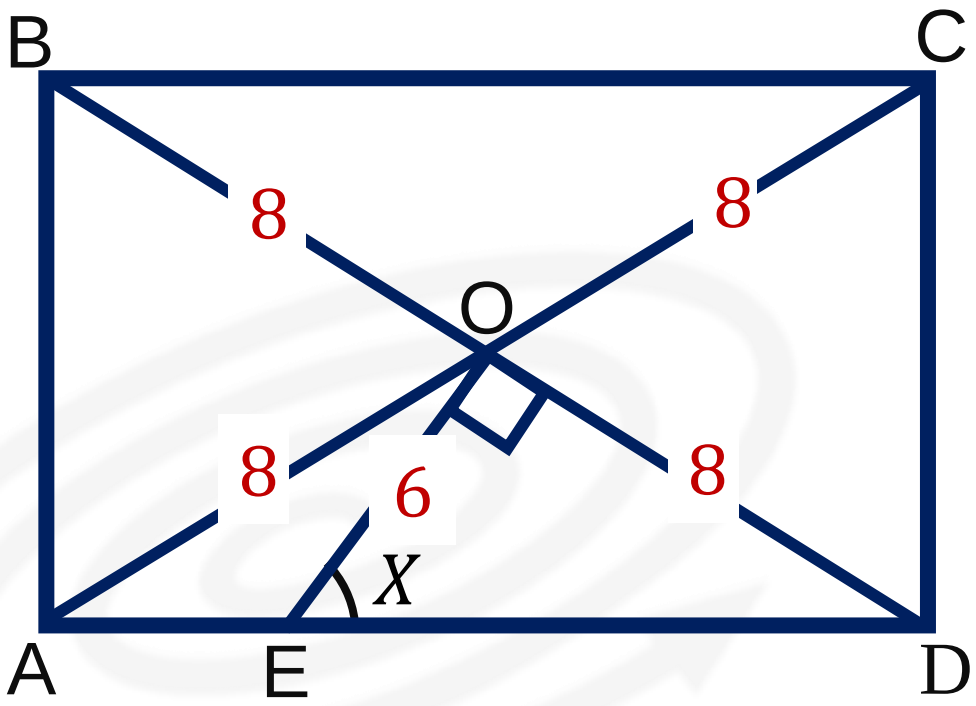
$$x = \alpha + \beta$$

Problema 02

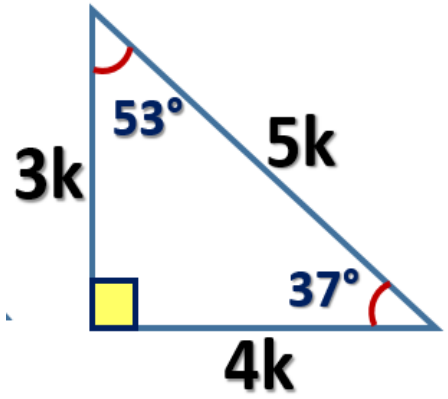
Si AC=16 y EO=6, halle el valor de *x*.



Resolución



RECORDEMOS

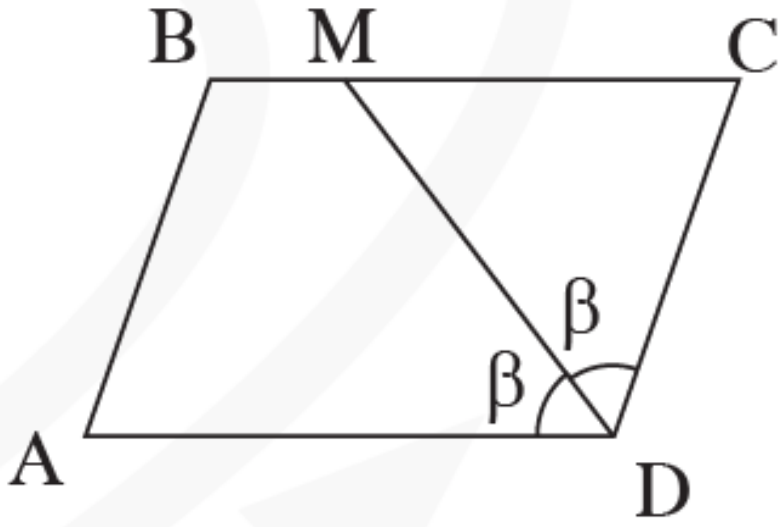


El triángulo EOD es triángulo notable $(37^0 y\ 53^0)$.

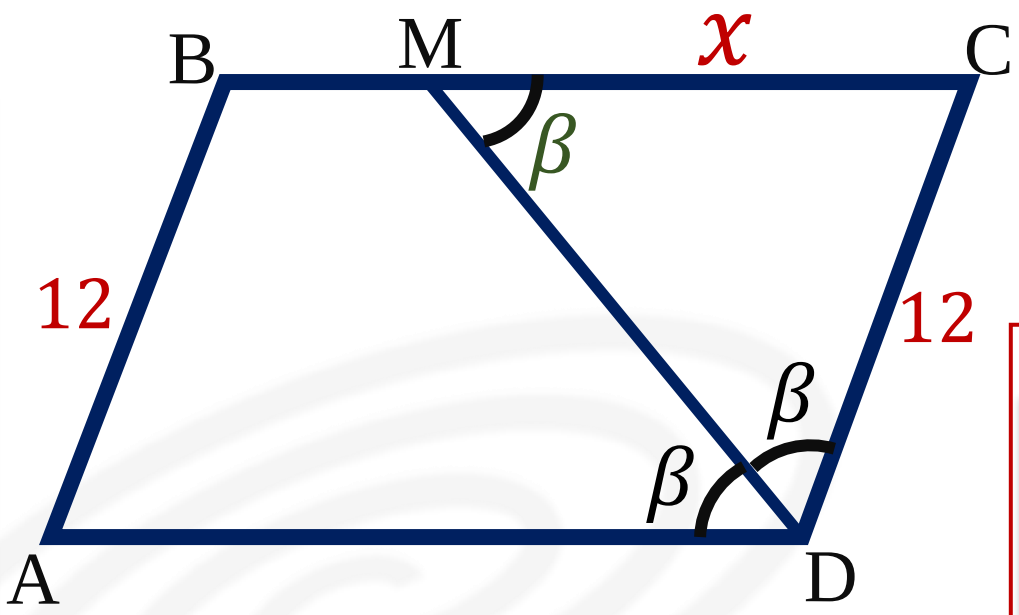
Respuesta ∴ x = 53°

Problema 03

ABCD es un paralelogramo y AB=12 u. Halle MC.

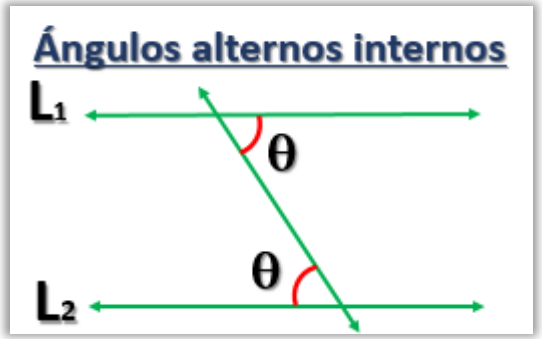


Resolución



El triángulo MCD es isósceles.

RECORDEMOS

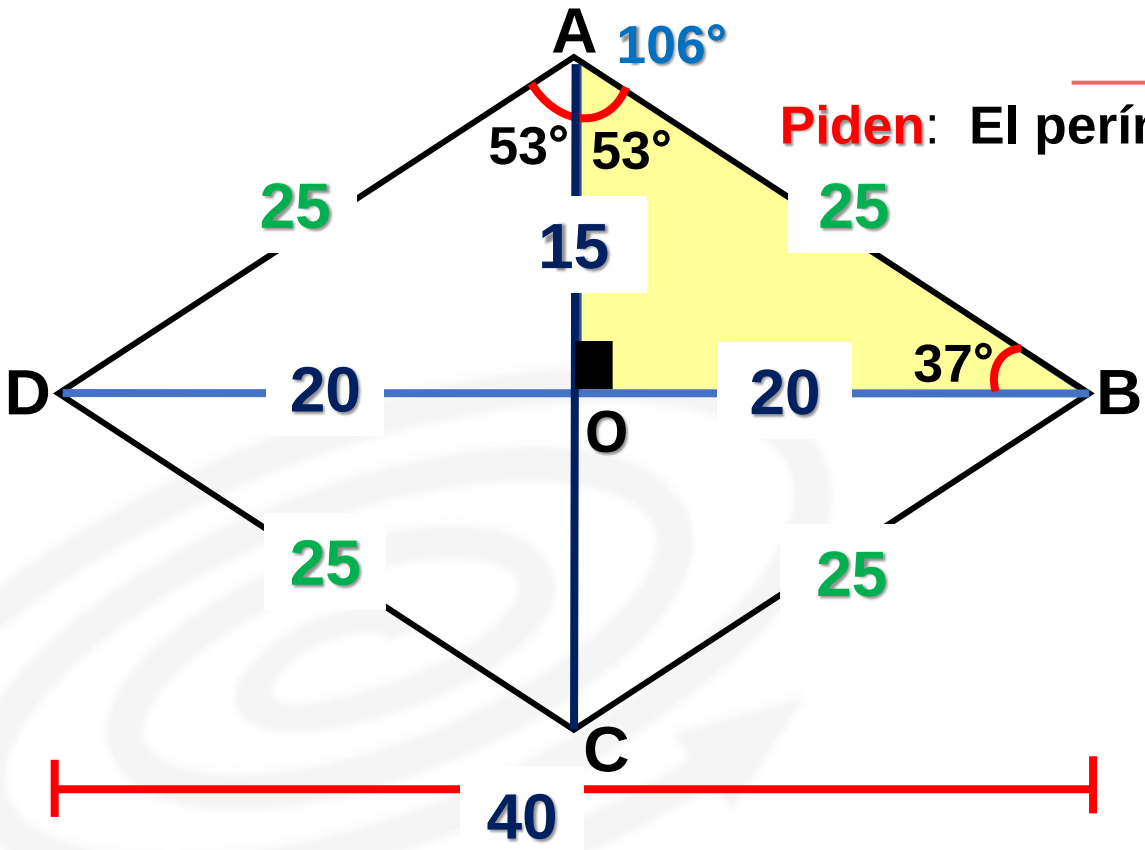


Respuesta ∴ x = 12

Problema 04

Se quiere armar un cometa de forma rombal ABCD, AB forma 106° con AD , BD=40 cm . Halle el perímetro de esta cometa.

Resolución



Piden: El perímetro del rombo

BO = OD = 20

m $\sphericalangle ABO$ = m $\sphericalangle OBC$ = 53°

- Si ⊿ BOC Notable de 37° - 53°

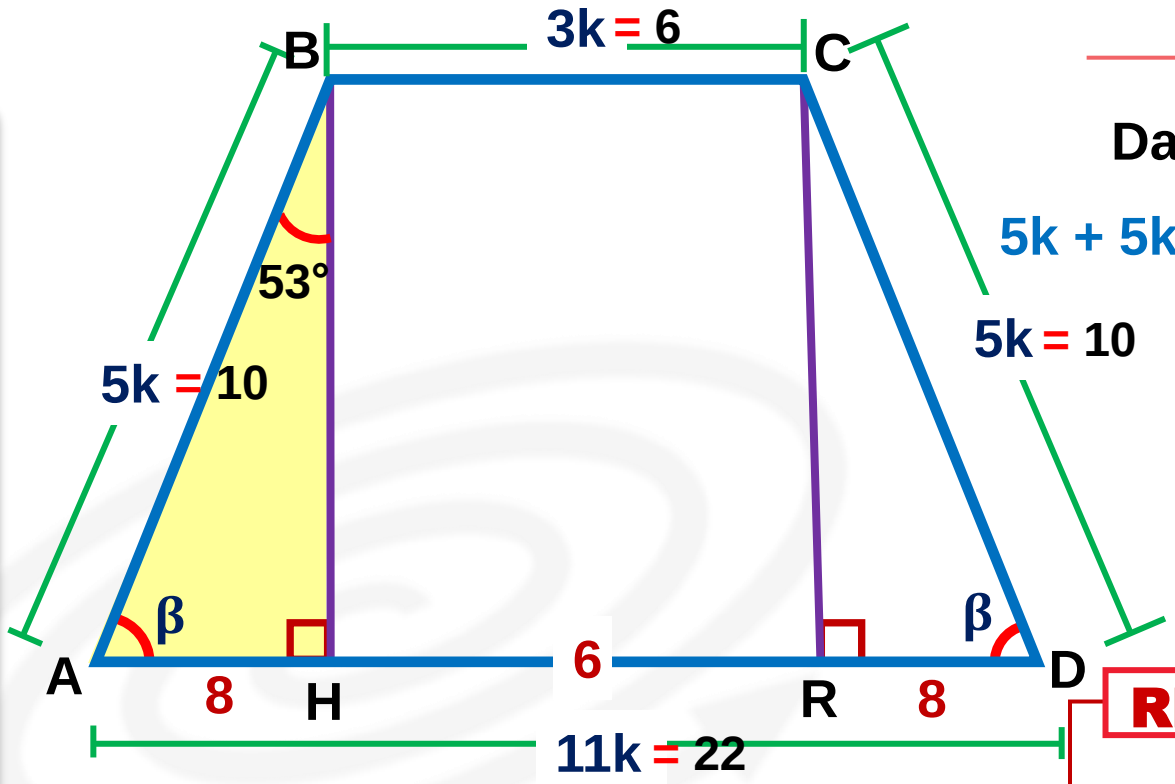
AB = 25

2 p (◆) = 25 + 25 + 25 + 25 = 100

Respuesta 2p (◆) = 100cm

Problema 05

Se tiene una mesa trapecial isósceles q tal la base menor, base mayor y el lado lateral están en relación 3, 11 y 5 respectivamente si el perímetro de la mesa es 48 cm, Calcule la altura de la dicha mesa.



Resolución

Dato: $2p_{\square} = 48$

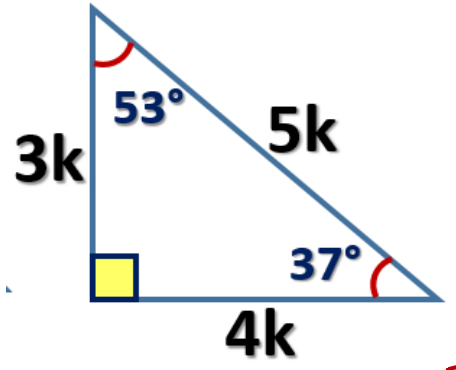
$5k + 5k + 11k + 3k = 48$

$24k = 48$

$k = 2$

- Piden BH
- Se trazan las alturas $\overline{BH}$ y $\overline{CR}$
- HBCR (Rectángulo) BC = HR = 6
- ADEMÁS AH = RD = 8
- ⊿ AHB (Notable 37° - 53°)

RECORDEMOS



Respuesta ∴ BH = 6

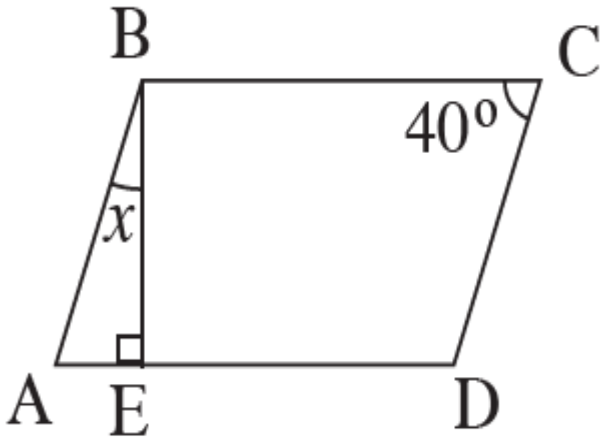
Problemas Propuestos

- Problema 06
- Problema 07
- Problema 08
- Problema 09
- Problema 10

HELICO WORSHOP

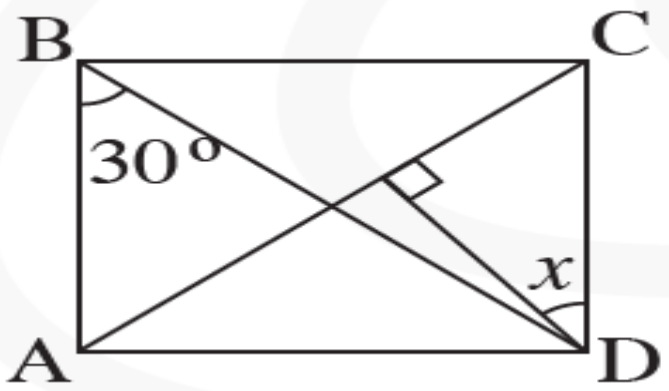
Problema 06

1. Si ABCD es un romboide, halle el valor de *x*.



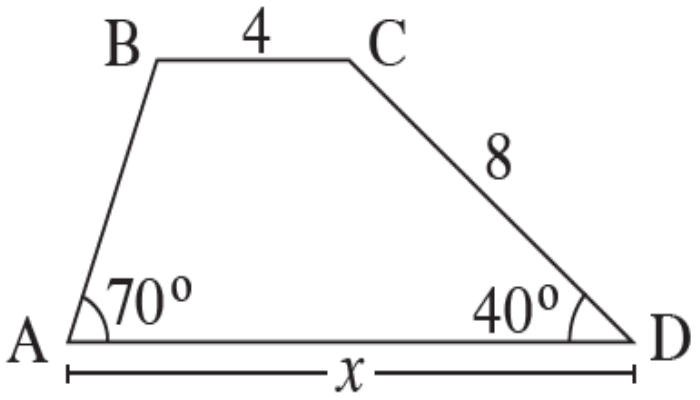
Problema 07

2. Si ABCD es un rectángulo, halle el valor de *x*.



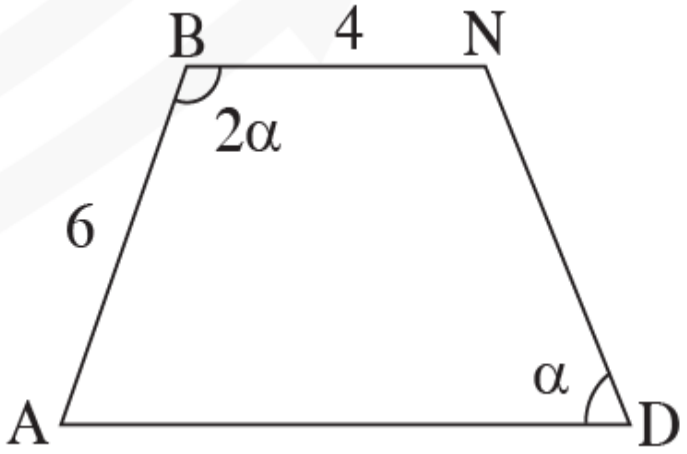
Problema 08

3. En la figura, BC//AD. Halle el valor de *x*.



Problema 09

4. El profesor Julio se compra un terreno de forma trapecial isósceles como muestra el gráfico. Si BC//AD, calcule el perímetro de dicho terreno.



Problema 10

5. Se tiene 2 aretes de forma rombal cuyos diagonales son 8 cm y 6 cm . Calcule la suma de los perímetros de ambos aretes.