



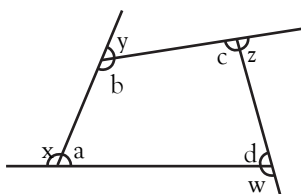
Geometría

CUADRILATEROS Y TRAPECIOS

CUADRILÁTERO

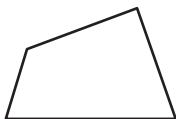
DEFINICIÓN

Es un polígono de 4 lados.

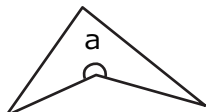


$$x + y + z + w = a + b + c + d = 360^\circ$$

CLASIFICACIÓN GENERAL



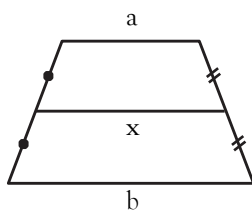
Convexos



No convexos

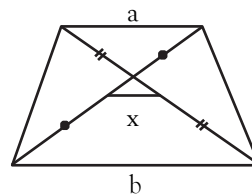
Propiedad del Trapecio

- Mediana de un trapecio



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

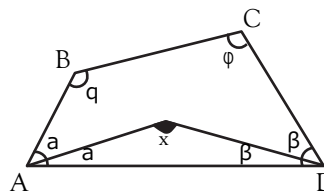
- Segmento que une los puntos medios de las diagonales.



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

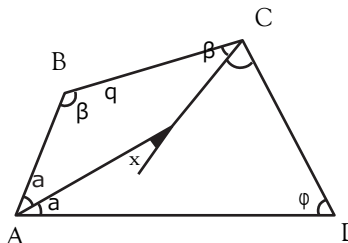
Propiedades Generales

1) Ángulo formado por 2 bisectrices.



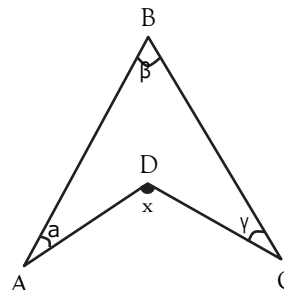
$$x = \frac{q + \phi}{2}$$

2) Ángulo formado por 2 bisectrices interiores no consecutivas.



$$x = \frac{q - \phi}{2}$$

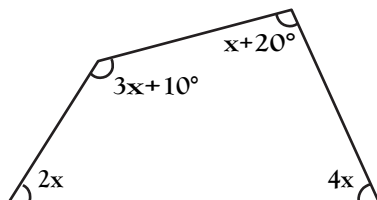
3) Cuadrilátero cóncavo.



$$x = a + \beta + \gamma$$

Resolviendo en clase

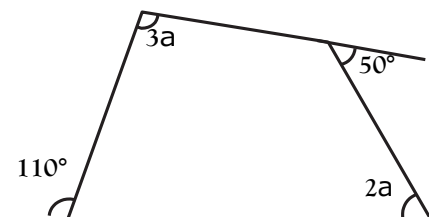
- 1 Calcula "x".



Resolución:

Rpta:

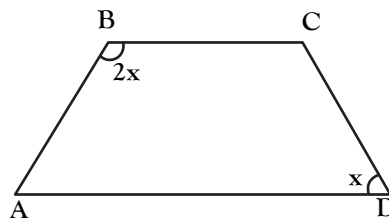
- 2 Halla el valor de "a".



Resolución:

Rpta:

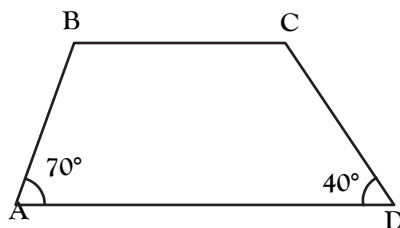
- 3 ABCD es un trapecio isósceles. Halla el valor de "x".



Resolución:

Rpta:

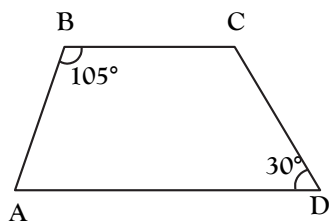
- 4 En el trapecio ABCD, $BC = 10$, $CD = 18$. Calcula "AD".



Resolución:

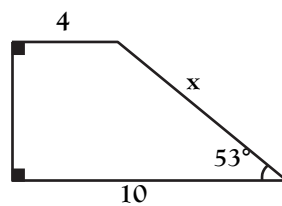
Rpta:

- 5 En el trapezio, $BC = 3$ y $AD = 7$. Calcula "CD".



Resolución:

- 6 De la figura, determina "x".



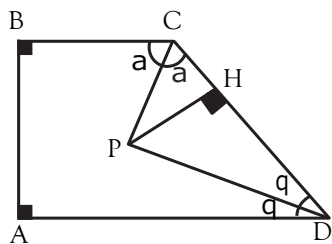
Resolución:

Rpta:

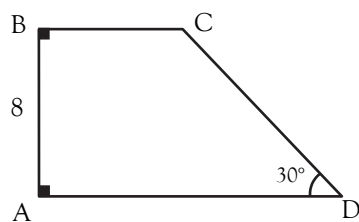
Rpta:

Ahora en tu cuaderno

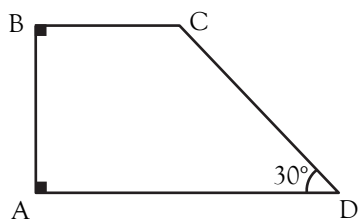
7. Calcula la altura del trapezio rectángulo ABCD si $PH = 4$.



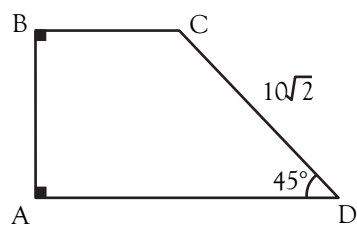
9. Halla "CD".



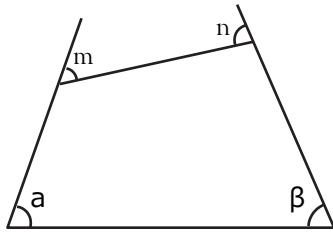
8. Calcula "CD", si $AB = 4$.



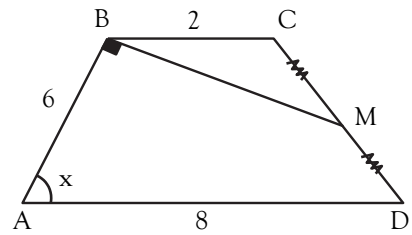
10. Halla "AB".



11. Si $\alpha + \beta = 110^\circ$, calcula " $m+n$ ".

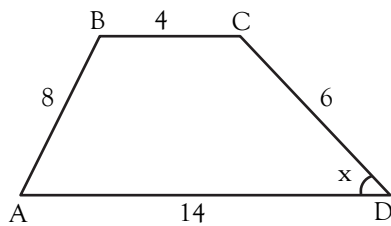


12. Halla " x ".



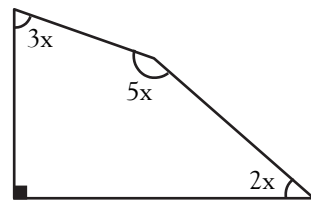
Para reforzar

1. Siendo ABCD un trapecio ($\overline{BC} // \overline{AD}$), halla el valor de " x ".



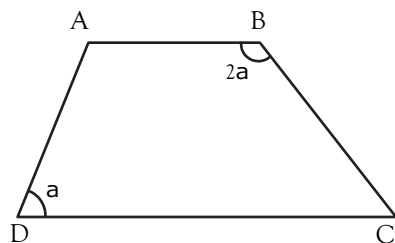
- a) 30° b) 37° c) 45°
d) 53° e) 60°

3. En la figura, calcula " x ".



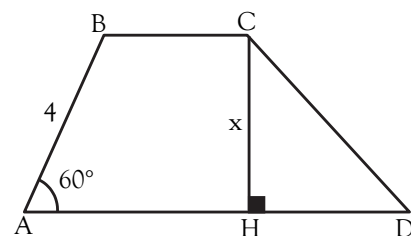
- a) 20° b) 30° c) 25°
d) 27° e) 32°

2. En la figura, $\overline{AB} // \overline{CD}$; $AB = 5$ u y $BC = 12$ u. Halla la mediana del trapecio.



- a) 9 u b) 10 u c) 12 u
d) 14 u e) 11 u

4. Si ABCD es un trapecio isósceles, halla " CH ".



- a) 2 b) $2\sqrt{3}$ c) 3
d) $3\sqrt{3}$ e) $\sqrt{3}$

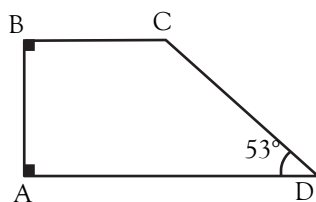
5. En un trapecio la base mayor mide el triple de la base menor. Si la mediana del trapecio mide 12 u, calcula la longitud de la base mayor.

- a) 6 u b) 12 u
c) 16 u
d) 18 u e) 24 u

6. Si el segmento que une los puntos medios de las diagonales de un trapecio mide 6 u y la base mayor de dicho cuadrilátero mide 18 u, halla la base menor.

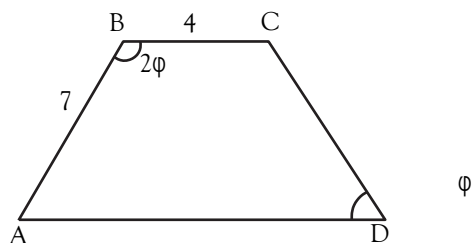
- a) 2 u b) 4 u
c) 6 u
d) 8 u e) 10 u

7. Calcula "AB", si $CD = 15$.



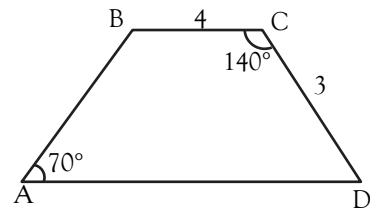
- a) 12 b) 15
c) 9
d) 16 e) 18

8. Calcula "AD".



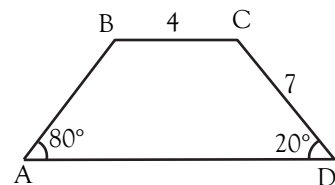
- a) 7 b) 9 c) 10
d) 11 e) 13

9. Calcula "AD".



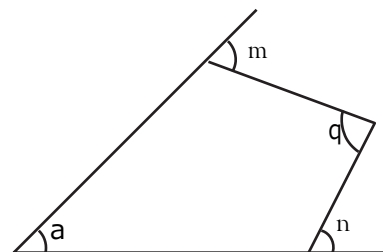
- a) 3 b) 4
c) 6
d) 7 e) 8

10. Halla "AD".



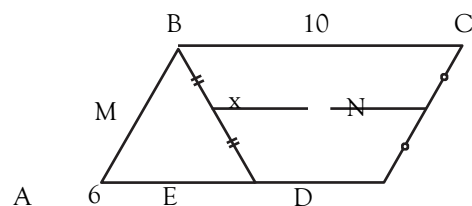
- a) 11 b) 12
c) 13
d) 14 e) 16

11. Si $m + n = 115^\circ$, calcula " $a + q$ ".



- a) 75° b) 85°
c) 95°
d) 105° e) 115°

12. Si ABCD es un rombo, calcula "x".



- a) 3 b) 4 c) 5
d) 6 e) 7