

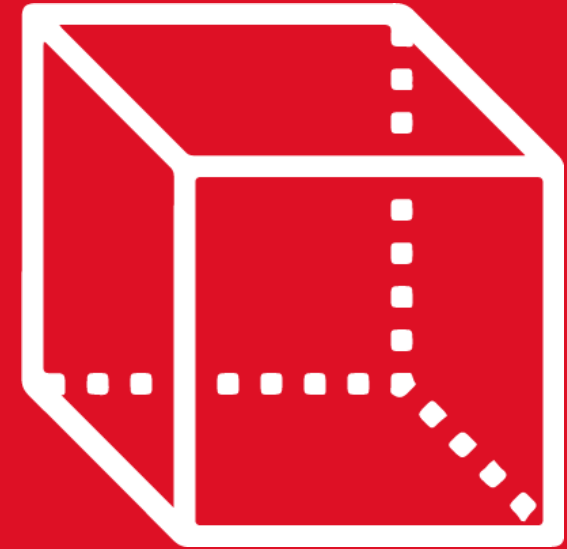


# GEOMETRÍA

**Tomo 4**

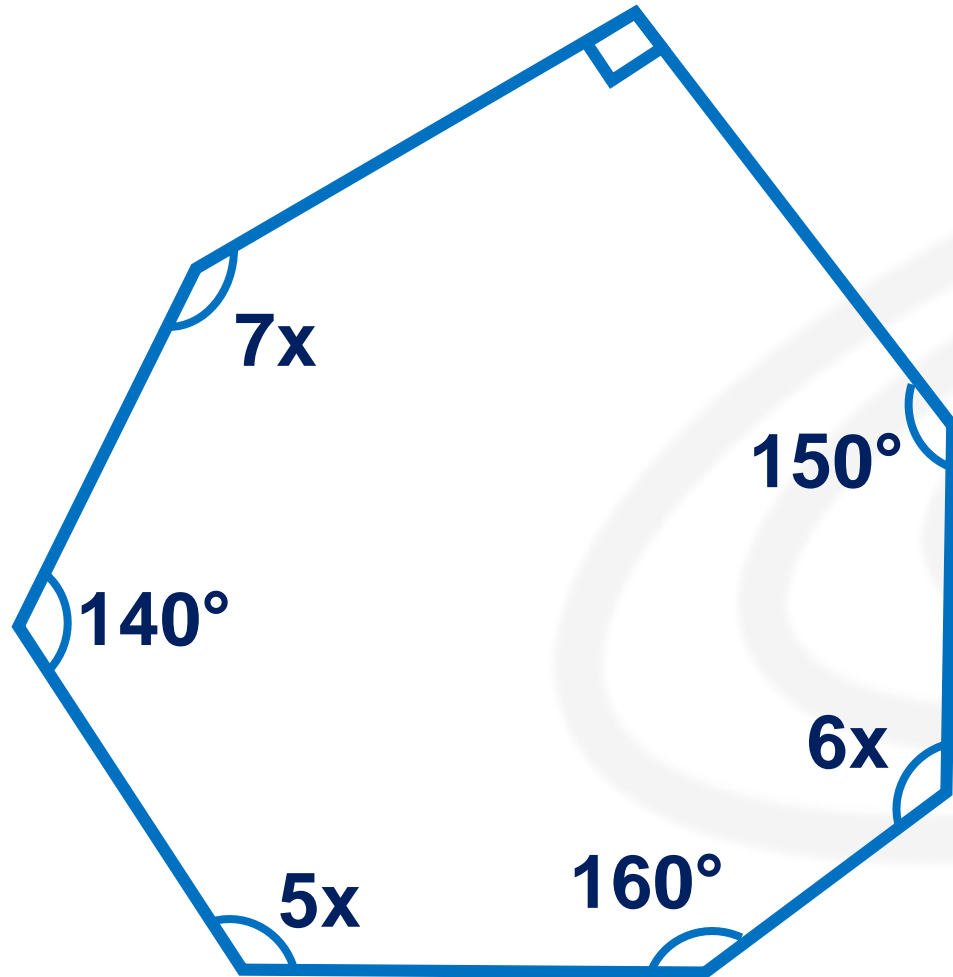
**3rd**  
SECONDARY

**RETROALIMENTACIÓN**



 **SACO OLIVEROS**

1. En la figura, calcule x.



Heptágono

$$n = 7$$

$$S_{m\angle i} = 180^\circ(n - 2)$$

$$S_{m\angle i} = 180^\circ(7 - 2)$$

$$S_{m\angle i} = 180^\circ(5)$$

$$S_{m\angle i} = 900^\circ$$

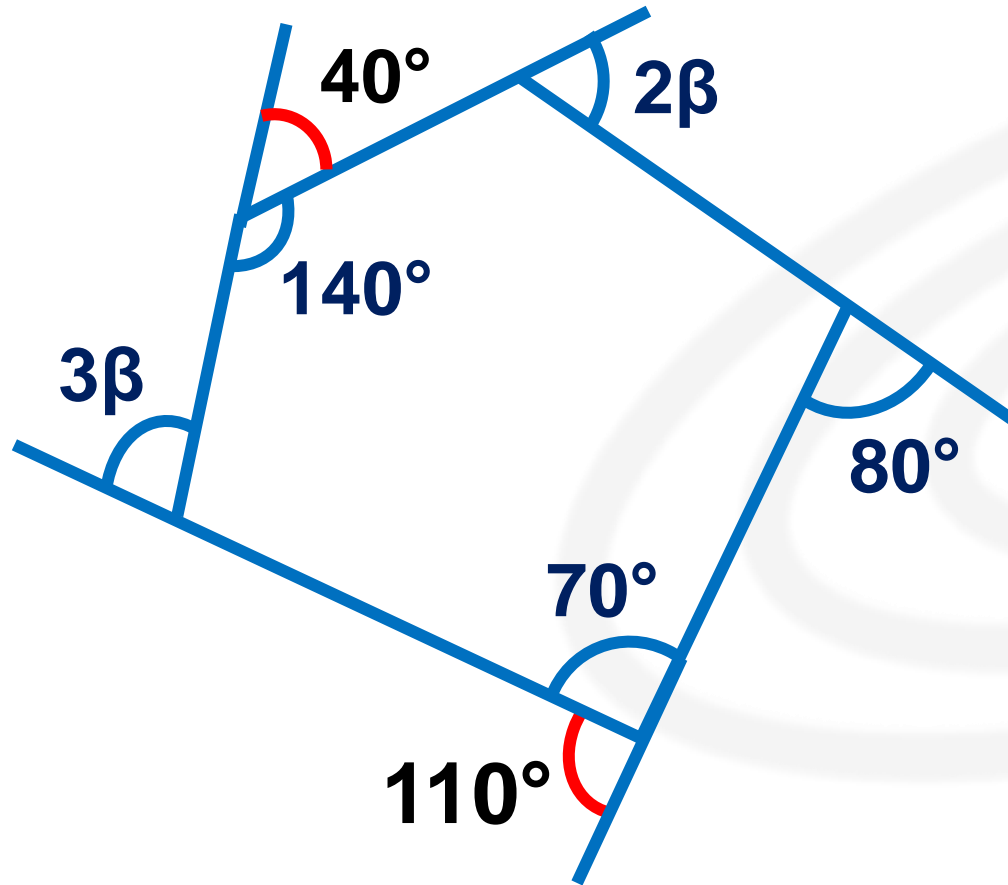
$$7x + 90^\circ + 150^\circ + 6x + 160^\circ + 5x + 140^\circ = 900^\circ$$

$$18x + 540^\circ = 900^\circ$$

$$18x = 360^\circ$$

$$x = 20^\circ$$

2. En la figura, calcule  $\beta$ .



$$S_{m\angle e} = 360^\circ$$

$$3\beta + 40^\circ + 2\beta + 80^\circ + 110^\circ = 360^\circ$$

$$5\beta + 230^\circ = 360^\circ$$

$$5\beta = 130^\circ$$

$$\beta = 26^\circ$$

3. Calcule el número total de diagonales de un polígono convexo, cuya suma de las medidas de los ángulos internos es  $1080^\circ$ .

$n$  : número de lados.

$$S_{m\angle i} = 180^\circ(n - 2)$$

• Por dato

$$\begin{aligned}
 S_{m\angle i} &= 1080^\circ \\
 \overbrace{180^\circ(n - 2)}^{S_{m\angle i}} &= 1080^\circ \\
 180^\circ(n - 2) &= 1080^\circ \\
 n - 2 &= 6 \\
 n &= 8
 \end{aligned}$$

$$N_{TD} = \frac{n(n-3)}{2}$$

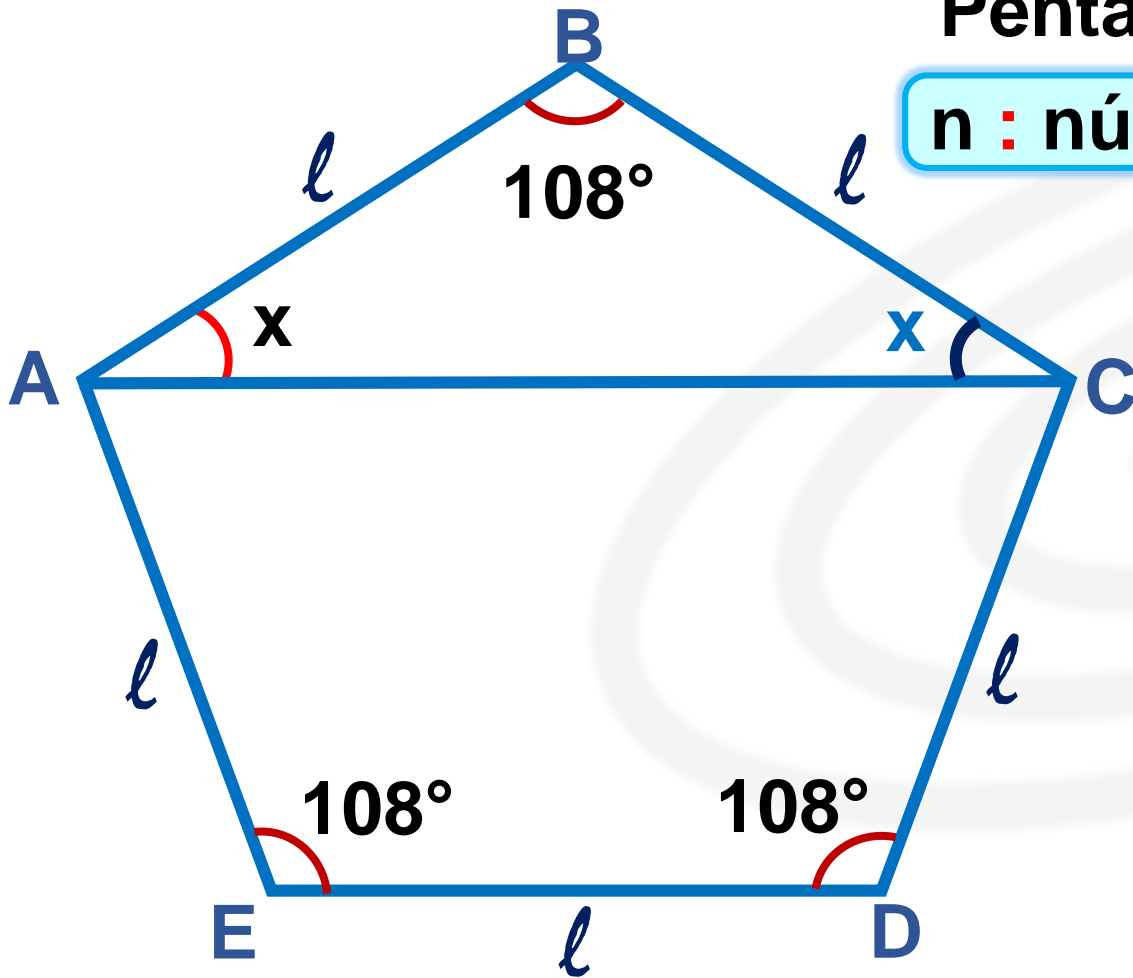
• Piden:

$$N_{TD} = \frac{8(8-3)}{2}$$

$$N_{TD} = \frac{8(5)}{2}$$

$$N_{TD} = 20$$

#### 4. En el pentágono regular ABCDE. Calcule x.



Pentágono regular  
 $n$  : número de lados

$$n = 5$$

$$m\angle i = \frac{180^\circ(n - 2)}{n}$$

$$m\angle i = \frac{180^\circ(5 - 2)}{5}$$

$$m\angle i = 108^\circ$$

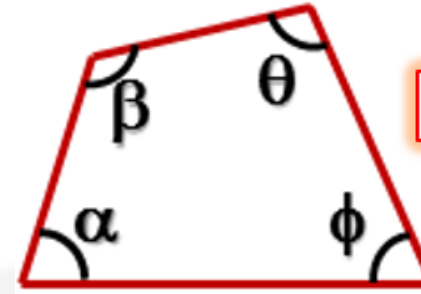
•  $\triangle ABC$ : Isósceles

$$x + 108^\circ + x = 180^\circ$$

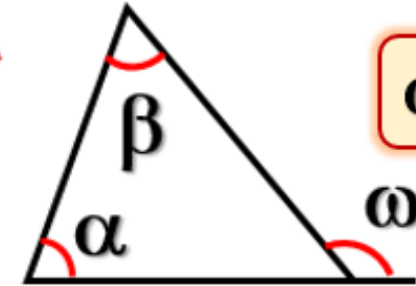
$$2x = 72^\circ$$

$$x = 36^\circ$$

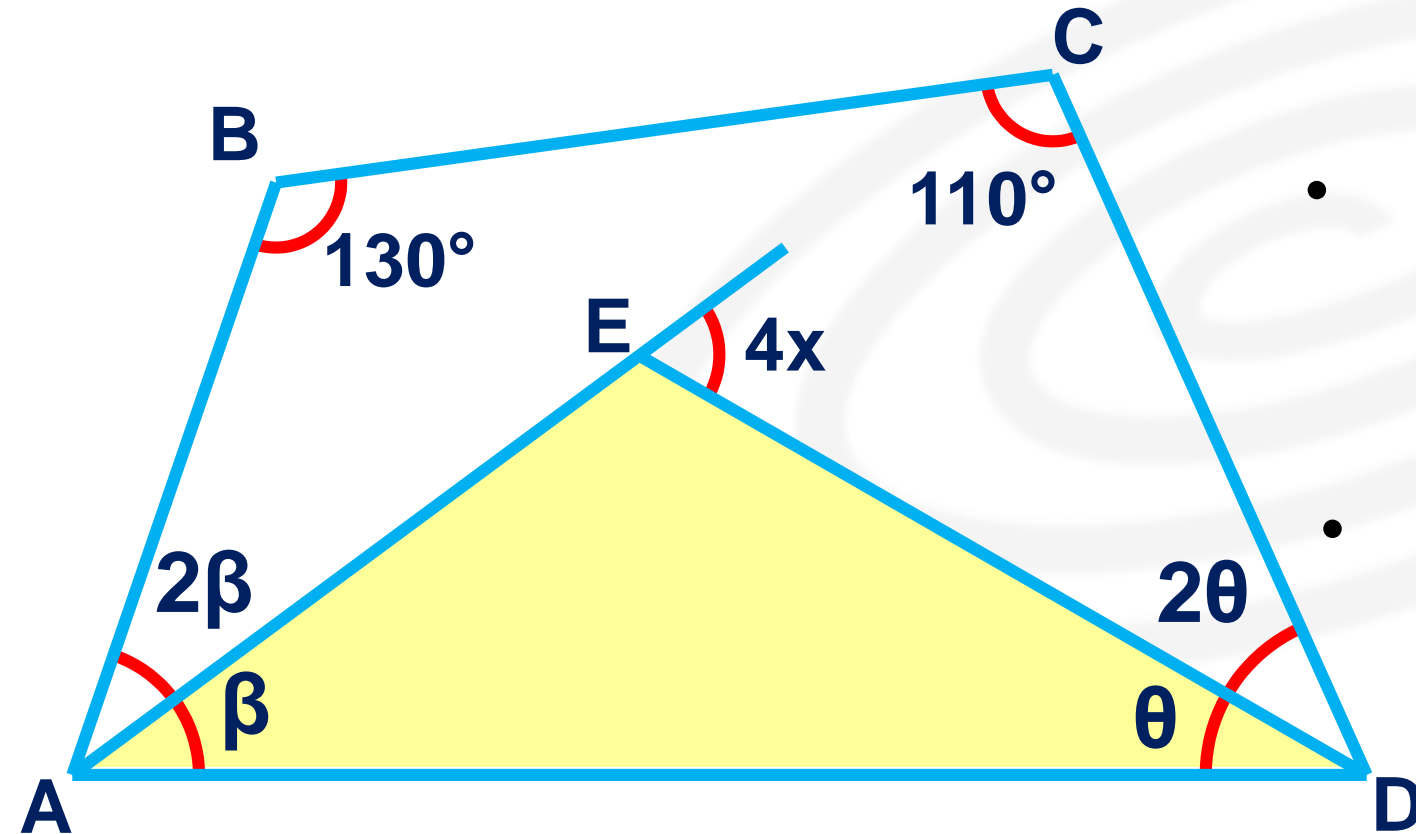
5. En la figura, halle el valor de  $x$ .



$$\alpha + \beta + \theta + \phi = 360^\circ$$



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



• **ABCD:**

$$3\theta + 3\beta + 130^\circ + 110^\circ = 360^\circ$$

$$3\theta + 3\beta = 120^\circ$$

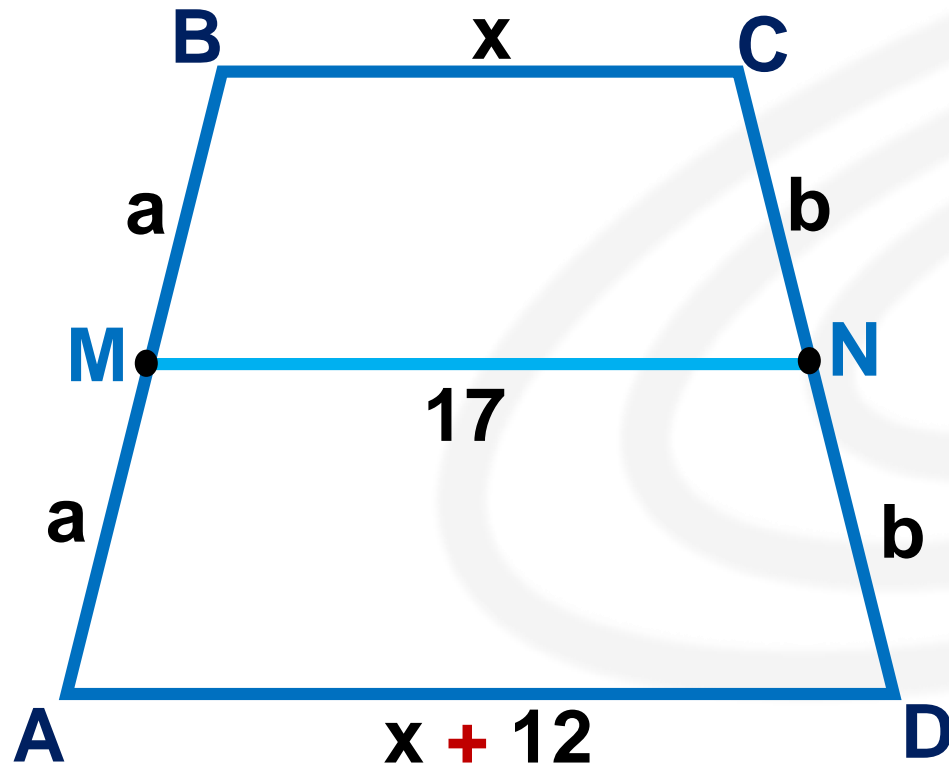
$$\theta + \beta = 40^\circ$$

• **AED:**

$$4x = \frac{\theta + \beta}{40^\circ}$$

$$x = 10^\circ$$

6. Las longitudes de las bases de un trapezio se diferencian en 12 m y la longitud de la base media es 17 m. Calcule la longitud de la base menor.



- Piden:  $x$
- $\overline{MN}$ : Base media del trapezio

$$17 = \frac{x + x + 12}{2}$$

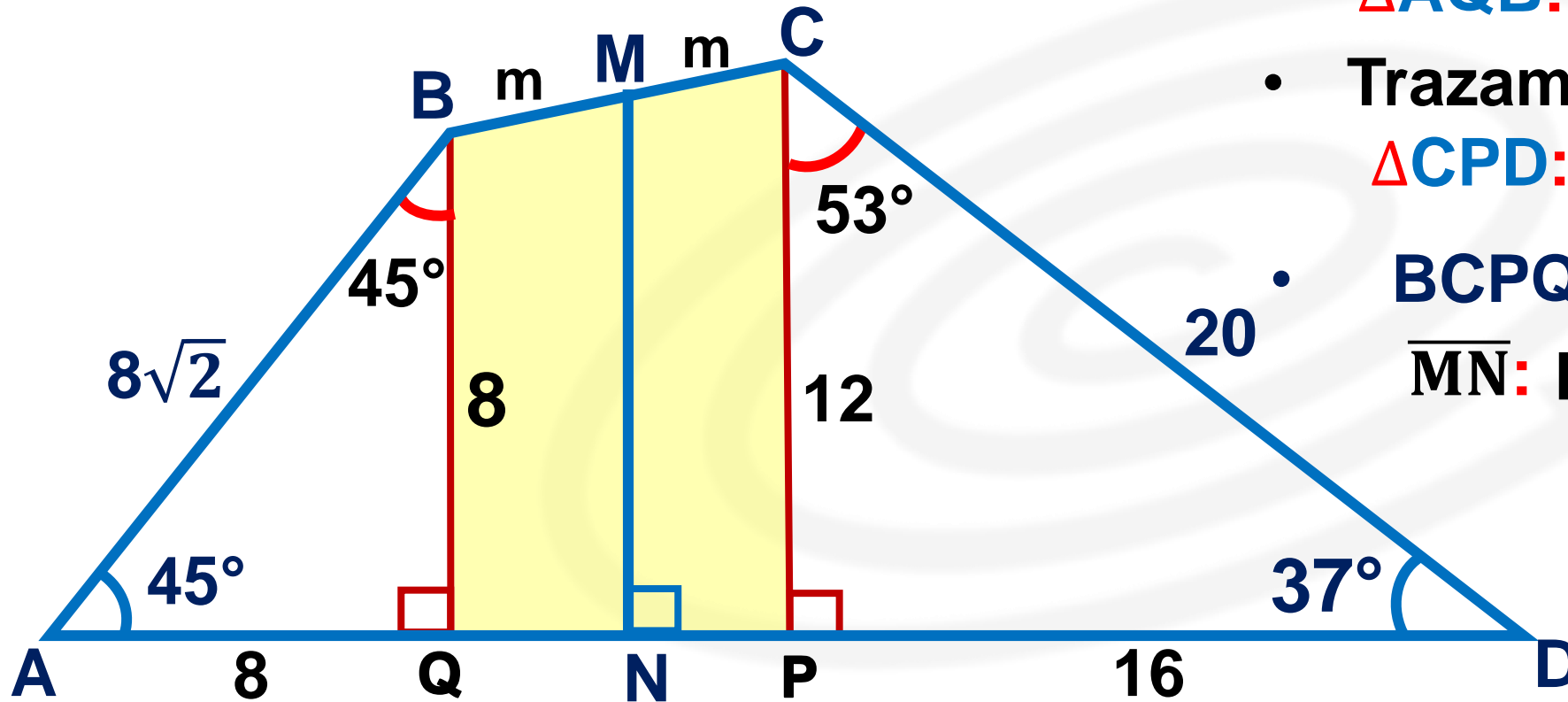
$$34 = 2x + 12$$

$$22 = 2x$$

$$x = 11$$



7. En la figura,  $BM = CM$ . Calcule  $MN$ .



- Trazamos la altura  $\overline{BQ}$ .  
 $\triangle AQB$ : Notable de  $45^\circ$  y  $45^\circ$
- Trazamos la altura  $\overline{CP}$ .  
 $\triangle CPD$ : Notable de  $37^\circ$  y  $53^\circ$
- $BCPQ$  : Trapecio  
 $\overline{MN}$ : Base media

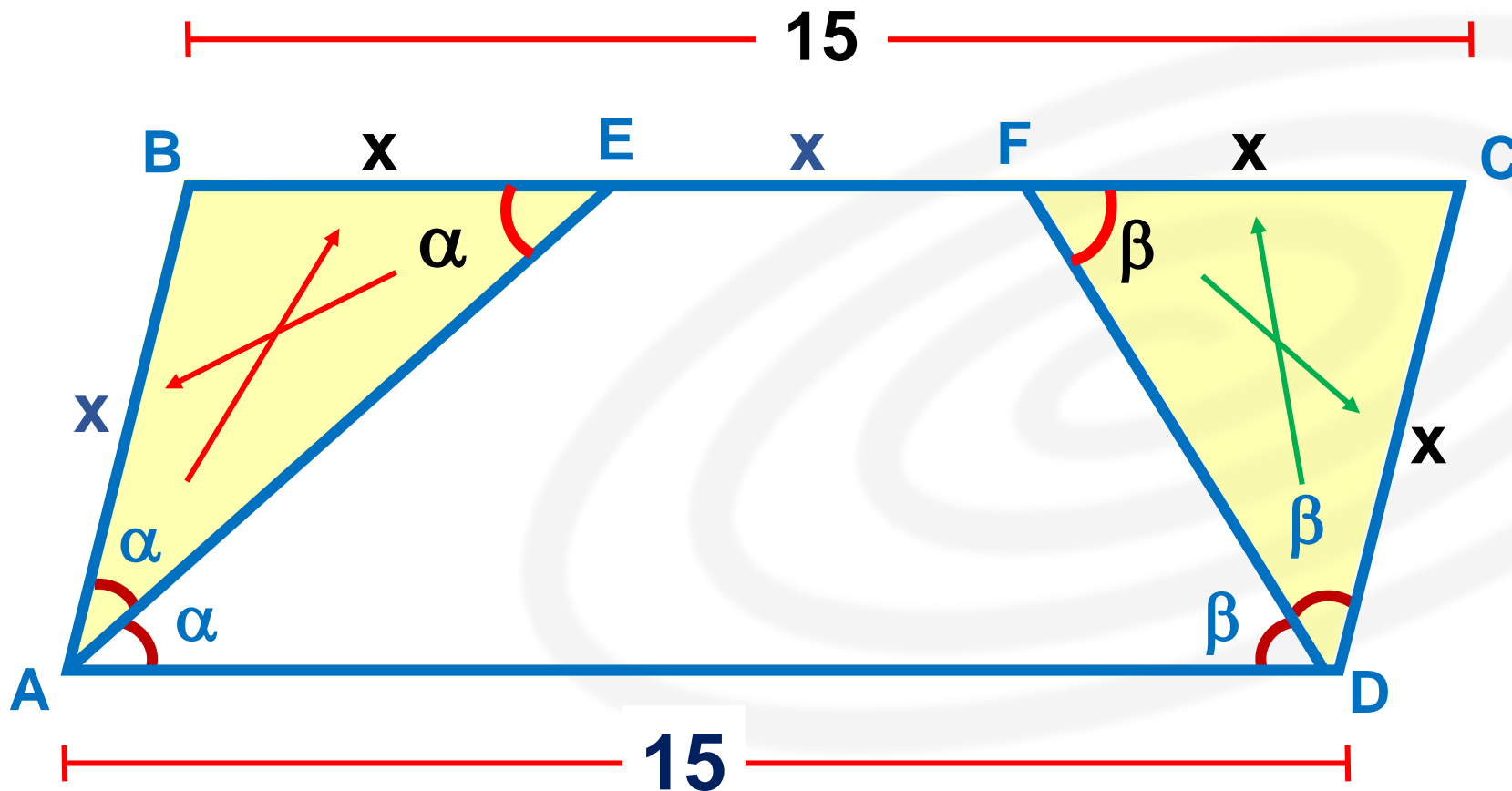
$$MN = \frac{12 + 8}{2}$$

$$MN = 10$$

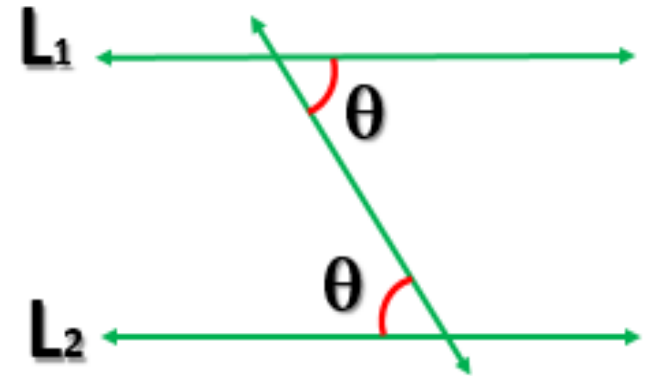




8. En el romboide ABCD mostrado,  $AD = 15$  y  $AB = EF = x$ . Calcule  $x$ .



Ángulos alternos internos



$\triangle ABE$ : Isósceles

$\triangle CDF$ : Isósceles

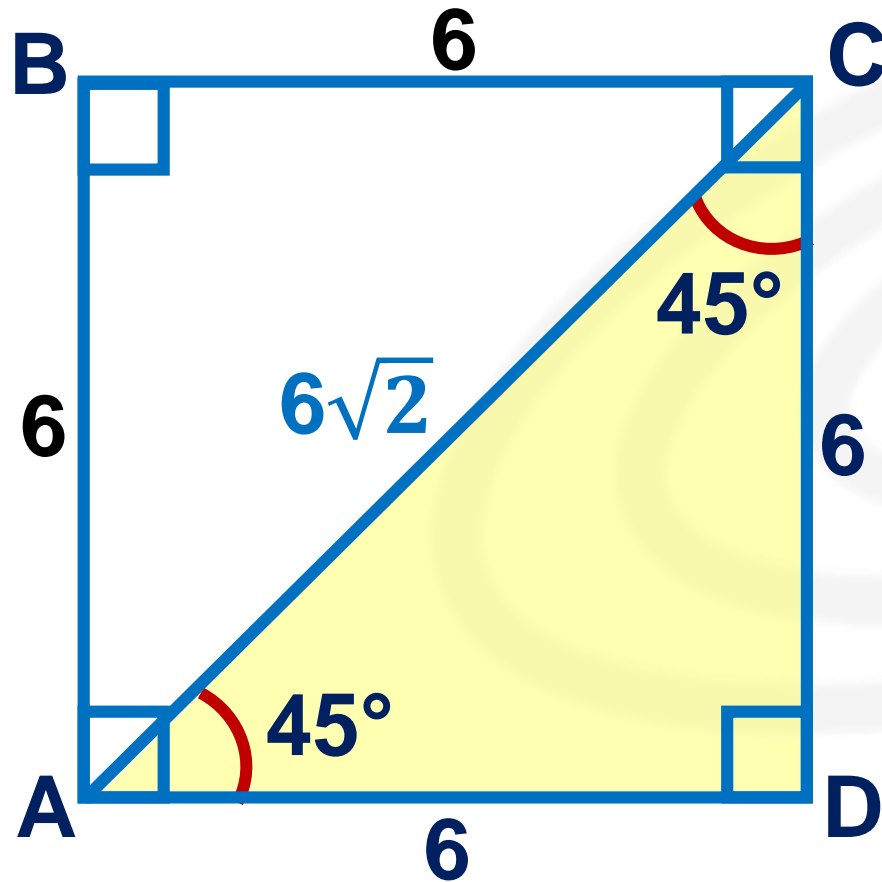
$$x + x + x = 15$$

$$3x = 15$$

$$x = 5$$

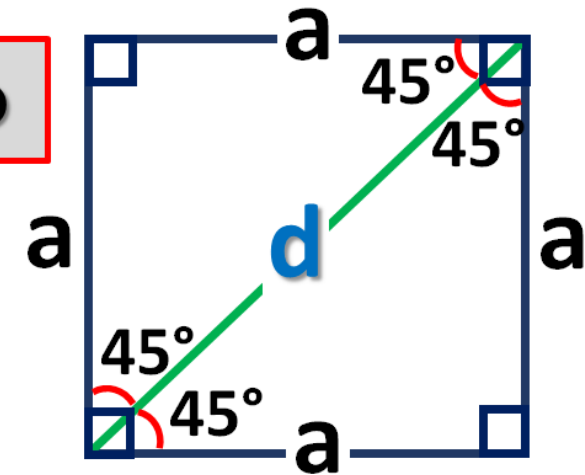


9. Calcule el perímetro de un cuadrado ABCD, si la longitud de su diagonal es de  $6\sqrt{2}$ .



**Cuadrado**

$$d = a\sqrt{2}$$



$\triangle ADC$ : Notable de  $45^\circ$  y  $45^\circ$

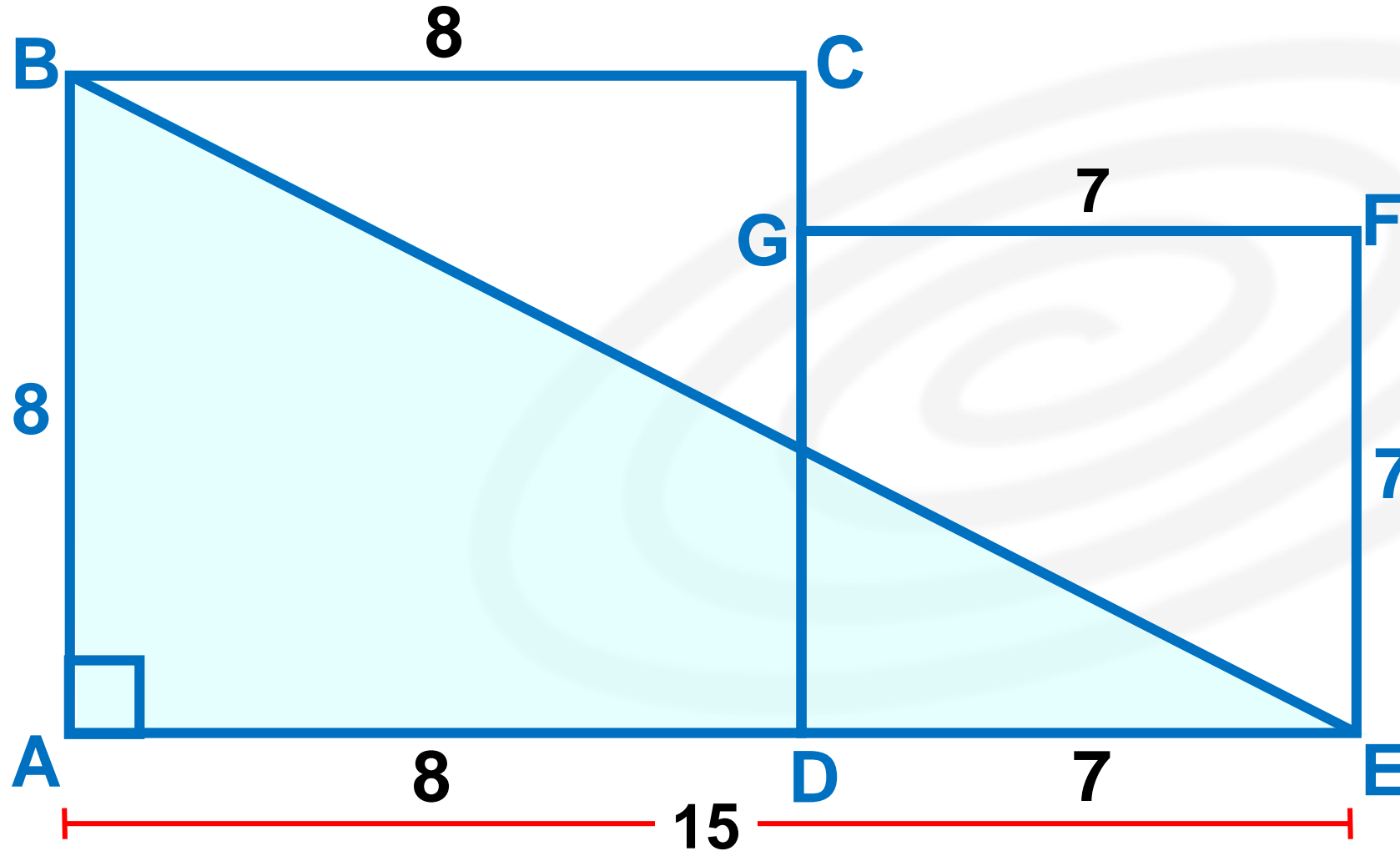
$$2p_{(ABCD)} = 6 + 6 + 6 + 6$$

$$2p_{(ABCD)} = 4(6)$$

$$2p_{(ABCD)} = 24 \text{ u}$$



10. En los siguientes cuadrados ABCD y DEFG. Calcule BE.



- Piden: BE
- **ABCD**: Cuadrado
- **DEFG**: Cuadrado
- **$\triangle ABE$** : T. Pitágoras

$$(BE)^2 = 8^2 + 15^2$$

$$(BE)^2 = 64 + 225$$

$$(BE)^2 = 289$$

$$BE = 17$$