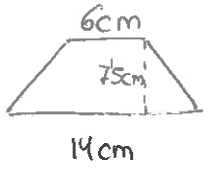
Academia Ciencia y más
C/Pintor Gumbau 13, E7
Vila-real

Ejercicios tipo exámen

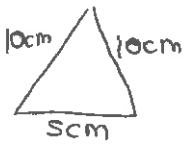
Tales / Pitágoras / Áreas

1. Calcula la altura de un edificio que proyecta una sombra de 36 m en el momento en que una estaca de 2m proyecta una sombra de 1'5 m.

2. Calcula el área y el perímetro de las figuras.

a) 

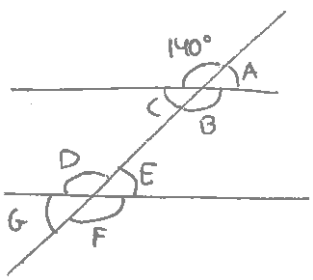
b) 

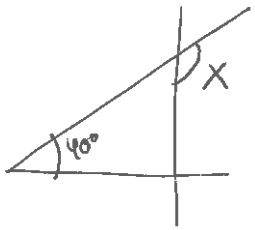
c) 

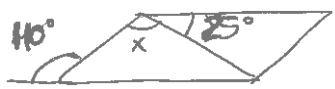
3. Los lados de un triángulo miden respectivamente 3cm, 4cm y 5cm ¿Es un triángulo rectángulo?

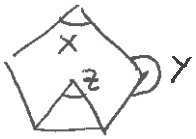
4. Una escalera de 10m de longitud está apoyada sobre la pared. El pie de la escalera dista 6m de la pared. ¿Qué altura alcanza la escalera sobre la pared?

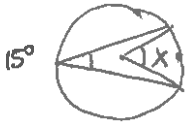
5. Calcula los ángulos desconocidos

a) 

b) 

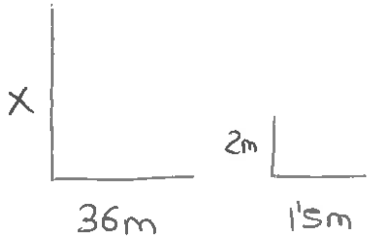
c) 

d) 

e) 

Solución

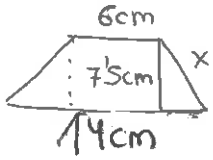
1.



$$\frac{X}{2} = \frac{36}{1'5}$$

$$X = \frac{2 \cdot 36}{1'5} = 48m$$

2. a)



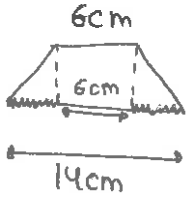
$$7'5^2 + 4^2 = x^2$$

$$\sqrt{72'25} = \sqrt{x^2}$$

$$8'5 = x$$

$$P = 6 + 8'5 \cdot 2 + 14 = 37cm$$

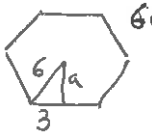
$$A = \frac{b+B}{2} a = \frac{6+14}{2} \cdot 7'5 = 75cm^2$$



14cm − 6cm = 8cm

8cm/2 = 4cm

b)



$$P = 6 \cdot 6 = 36cm$$

$$6^2 = 3^2 + a^2$$

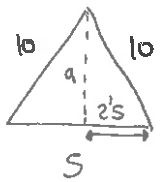
$$36 = 9 + a^2$$

$$\sqrt{27} = \sqrt{a^2}$$

$$5'196 = a$$

$$A = \frac{P \cdot a}{2} = \frac{36 \cdot 5'196}{2} = 93'53\ cm^2$$

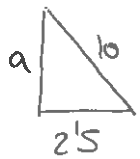
c)



$$P = 10 + 10 + 5 = 25cm$$

$$A = \frac{ba}{2} = \frac{5 \cdot 9'68}{2}$$

$$A = 24'2\ cm^2$$



$$a^2 + 2'5^2 = 10^2$$

$$a^2 = 100 - 6'25$$

$$a = 9'68$$

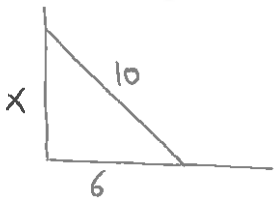
3.

$$4^2 + 3^2 = 5^2$$

$$25 = 25$$

Si que es un triángulo rectángulo porque cumple el teorema de pitágoras.

4.



$$x^2 + 6^2 = 10^2$$

$$x^2 + 36 = 100$$

$$x = 8m$$

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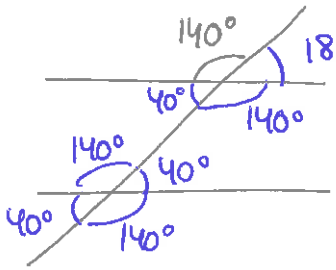
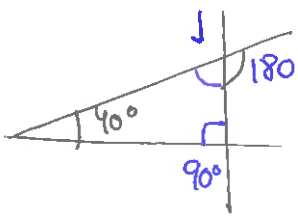
5) a)



$180 - 140 = 40°$

b)



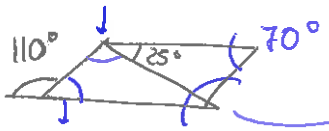
$180 - 40 - 90 = 50°$

$180 - 50° = 130°$

$110 - 25 = 85°$

• La suma de los ángulos de un triángulo son 180°

c)

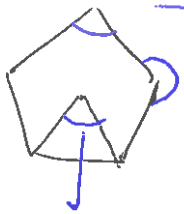


$180 - 110 = 70°$

$\frac{360 - 70° - 70°}{2} = 110°$

• La suma de los ángulos de un cuadrilátero son 360°

d)

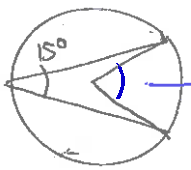


$\frac{180(n-2)}{n} = \frac{180(5-2)}{5} = 108°$

$360 - 108 = 252°$

$360°/5 = 72°$

e)



$2 \cdot 15 = 30°$