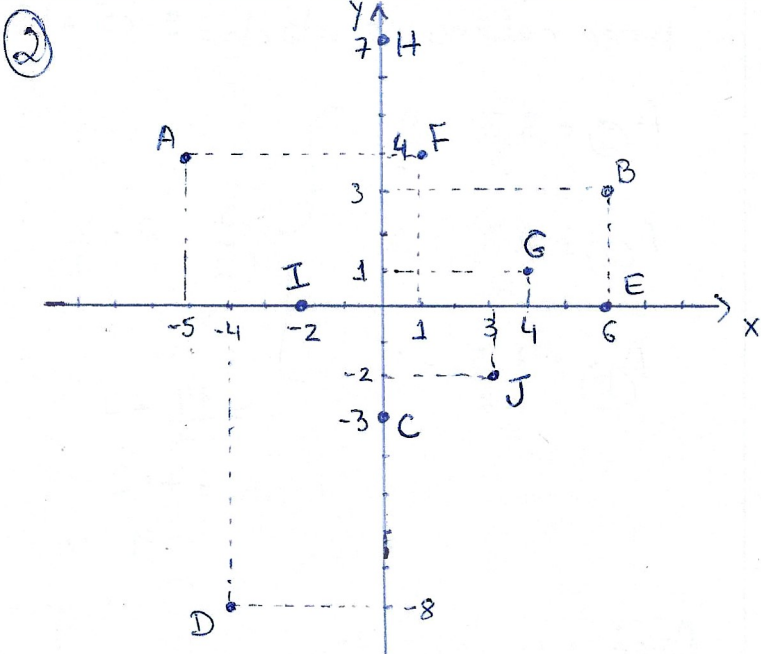


Lista 5 - Matemática I

① as coordenadas dos pontos são:

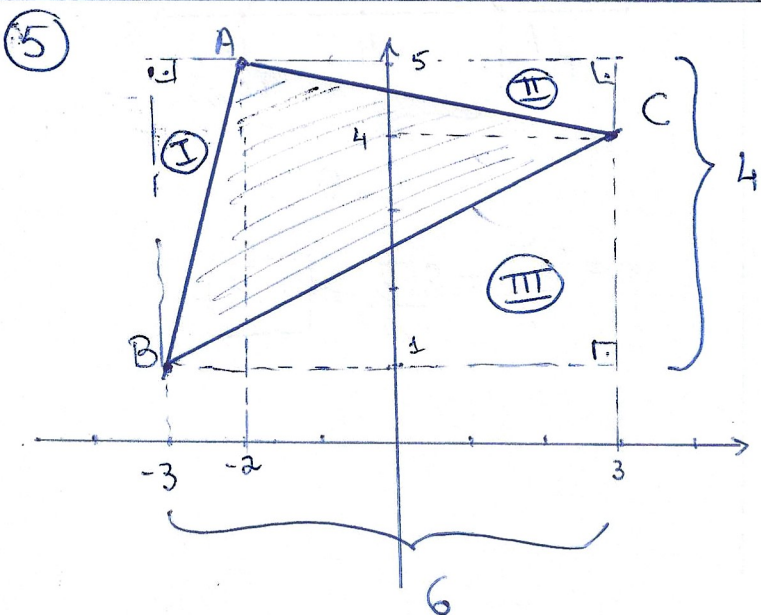
$$A(5,6), B(1,4), C(4,2)$$

letrab.



③ $P(0,1)$ e $Q(1,0)$

④ $A(-1,3), B(0,-2)$
 $D(4,0), E(3,-1)$



$$A=(-2,5) \quad B=(-3,1), \quad C=(3,4)$$

$$\text{Área retângulo} = 6 \times 4 = 24$$

$$\text{Área (I)} = \frac{b \cdot h}{2} = \frac{1 \cdot 4}{2} = 2$$

$$\text{Área (II)} = \frac{b \cdot h}{2} = \frac{1 \cdot 5}{2} = \frac{5}{2}$$

$$\text{Área (III)} = \frac{b \cdot h}{2} = \frac{6 \cdot 3}{2} = 9$$

$$\text{Área triângulo} = 24 - \left(2 + \frac{5}{2} + 9 \right)$$

↓
2,5

$$A = 24 - 13,5$$

$$\boxed{A = 10,5}$$

⑥

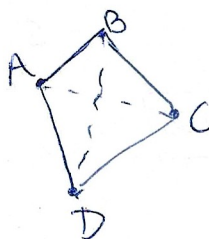
a) $F \rightarrow (3,-2) \in 4^{\circ}a$

b) $F \rightarrow (2,-1) \in 4^{\circ}a$

~~c) V~~

d) $F \rightarrow (2,4) \in 1^{\circ}a$

⑦ As diagonais são \overline{AC} e \overline{BD} .



$$A(-3,3)$$

$$B(3,1)$$

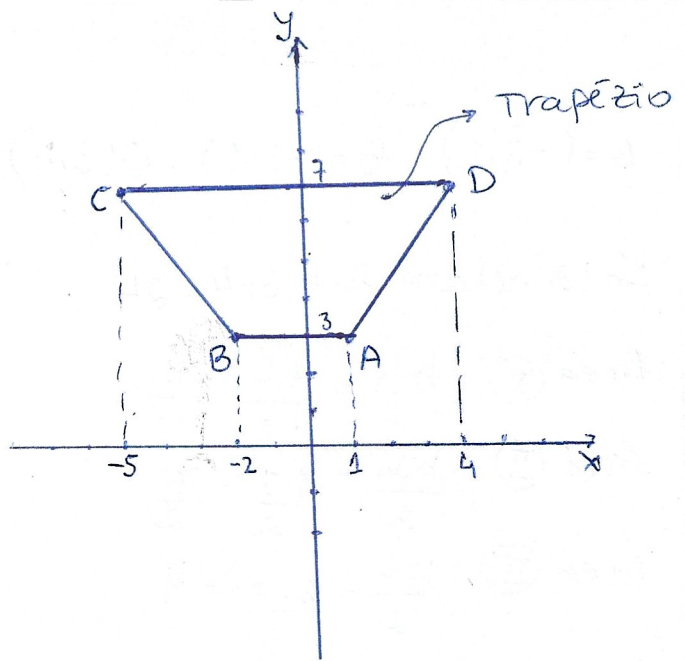
$$C(5,-3)$$

$$D(-1,-2)$$

$$\overline{AC} = \sqrt{(-3-5)^2 + (3+3)^2} = \sqrt{64+36} = \sqrt{100} = 10$$

$$\overline{BD} = \sqrt{(3+1)^2 + (1+2)^2} = \sqrt{16+9} = \sqrt{25} = 5$$

8



Base maior: $B = 4 - (-5) = 9$
 Base menor: $b = 1 - (-2) = 3$
 Altura: $h = 7 - 3 = 4$

$$\text{Area} = \frac{(B+b) \cdot h}{2} = \frac{(9+3) \cdot 4}{2} = \frac{12 \cdot 4}{2} = \boxed{24}$$

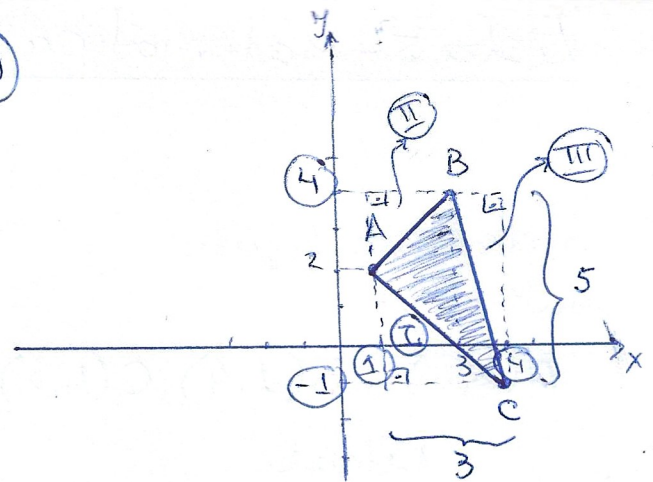
Perimetro = soma dos lados

$$\overline{BC} = \sqrt{(-2+5)^2 + (3-7)^2} = \sqrt{9+16} = \sqrt{25} = 5$$

$$\overline{AD} = \sqrt{(1-4)^2 + (3-7)^2} = \sqrt{9+16} = \sqrt{25} = 5$$

$$2p = 9 + 5 + 3 + 5 = \boxed{22}$$

9



$$\text{Area retângulo} = b \times h = 3 \times 5 = 15$$

$$A_{\text{I}} = \frac{3 \cdot 3}{2} = \frac{9}{2}$$

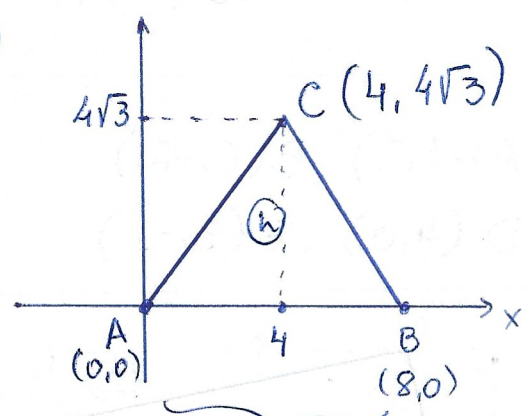
$$A_{\text{II}} = \frac{2 \cdot 2}{2} = 2$$

$$A_{\text{III}} = \frac{1 \cdot 5}{2} = \frac{5}{2}$$

$$\left. \begin{array}{l} \frac{9}{2} + 2 + \frac{5}{2} \\ \frac{14}{2} + 2 \\ = 7 + 2 \\ = 9 \end{array} \right\}$$

$$\text{Area triângulo} = 15 - 9 = \underline{\underline{6}}$$

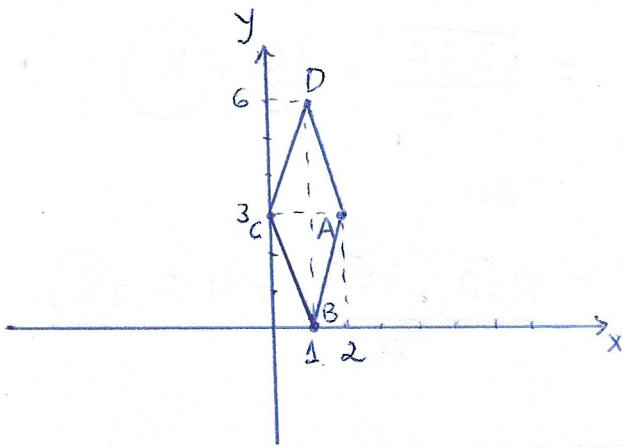
10



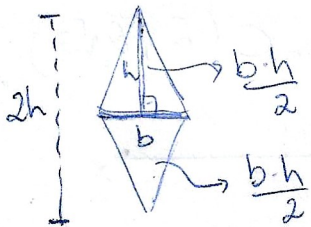
$$l = 8$$

$$h = \frac{l\sqrt{3}}{2} = \frac{8\sqrt{3}}{2} = \boxed{4\sqrt{3}}$$

11



Losango \Rightarrow 4 lados iguais e diagonais perpendiculares



$$A_{\text{Los}} = \frac{b \cdot h}{2} = b \cdot h$$

produto das diagonais $\div 2$

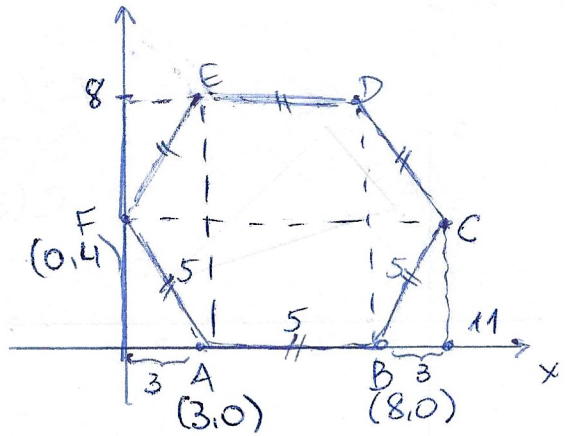
$$\text{Área} = \frac{2 \cdot 6}{2} = \boxed{6}$$

$$\text{lado} = \overline{AB} = \sqrt{(2-1)^2 + (3-0)^2} = \sqrt{1+9} = \sqrt{10} \approx 3,2$$

$$2p = 4 \cdot 3,2 = \boxed{12,8}$$

letra a.

12

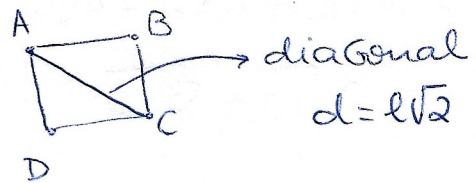


hexágono equilateralo \Rightarrow lados iguais

$$\begin{aligned} \text{a) lado} &= \overline{AF} = \sqrt{(3-0)^2 + (0-4)^2} \\ &= \sqrt{9+16} = \sqrt{25} = \boxed{5} \end{aligned}$$

- b) B(8,0)
- C(11,4)
- D(8,8)
- E(3,8)

13

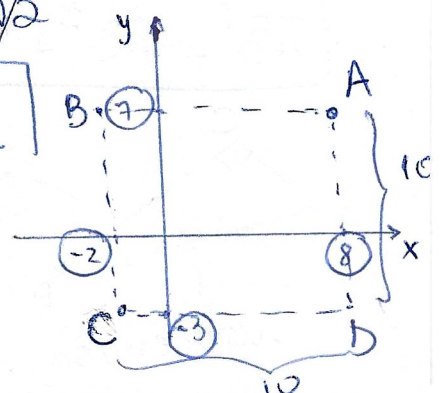


$$\begin{aligned} A(8,7) \\ C(-2,-3) \Rightarrow \overline{AC} &= \sqrt{(8+2)^2 + (7+3)^2} \\ &= \sqrt{100+100} \\ &= \sqrt{200} = 10\sqrt{2} \end{aligned}$$

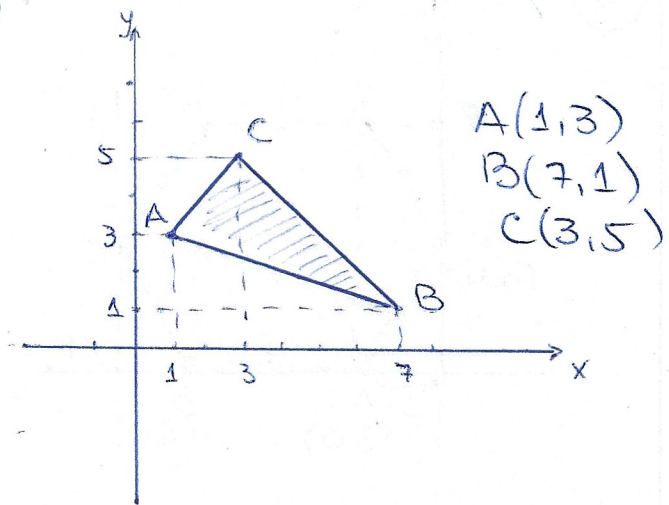
$$l\sqrt{2} = 10\sqrt{2}$$

$$\boxed{l = 10}$$

- B(-2,7)
- D(8,-3)



14



Calculando os lados:

$$\overline{AB} = \sqrt{(7-1)^2 + (1-3)^2} = \sqrt{36+4} = \sqrt{40} = 2\sqrt{10}$$

$$\overline{AC} = \sqrt{(3-1)^2 + (5-3)^2} = \sqrt{4+4} = \sqrt{8} = 2\sqrt{2}$$

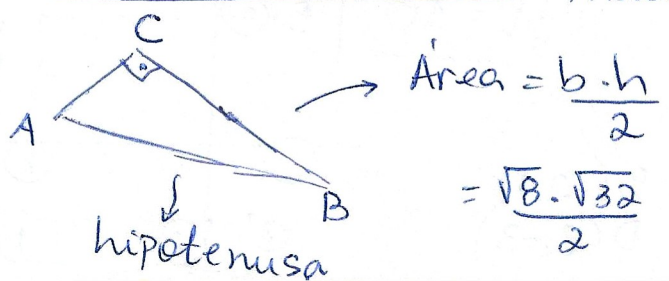
$$\overline{BC} = \sqrt{(3-7)^2 + (5-1)^2} = \sqrt{16+16} = \sqrt{32} = 4\sqrt{2}$$

a) $2p = 2\sqrt{10} + 2\sqrt{2} + 4\sqrt{2}$
 $= 2\sqrt{10} + 6\sqrt{2}$

b) Observe que este triângulo é um triângulo retângulo!

$$\overline{AB} = \sqrt{40}, \overline{AC} = \sqrt{8}, \overline{BC} = \sqrt{32}$$

$$\overline{AB}^2 = \overline{AC}^2 + \overline{BC}^2 \quad \text{teorema Pitágoras}$$

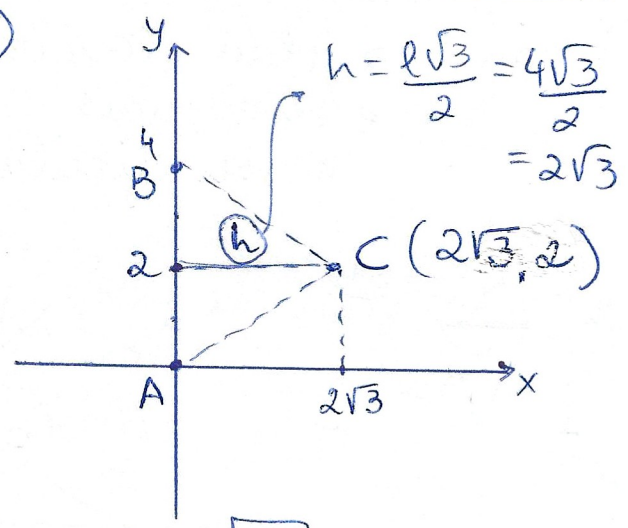


$$= \frac{\sqrt{256}}{2} = \frac{16}{2} = 8$$

ou

$$= \frac{2\sqrt{2} \cdot 4\sqrt{2}}{2} = 4 \cdot 2 = 8$$

15



lado $\overline{AB} = 4$

C(2\sqrt{3}, 2)

$$\text{Área} = \frac{l \times \frac{l\sqrt{3}}{2}}{2} = \frac{l^2\sqrt{3}}{4}$$

$$A = \frac{4^2\sqrt{3}}{4} = 4\sqrt{3}$$