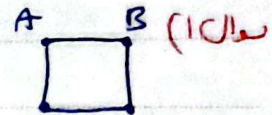


در مسائل مربوطه

$$A(-2, k), B(\varepsilon, m) \quad m = -\frac{1}{\varepsilon}$$



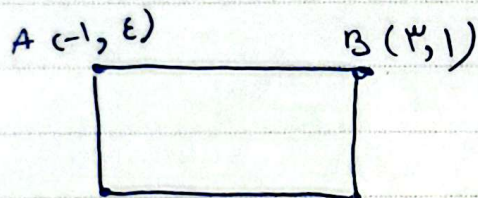
$$y = -\frac{1}{\varepsilon}x + b \xrightarrow{(-2, k)} 1 + b = k \Rightarrow b = k - 1$$

$$y = -\frac{1}{\varepsilon}x + b \xrightarrow{(\varepsilon, m)} -2 + b = m \Rightarrow b = m + 2$$

$$\left. \begin{array}{l} k - 1 = m + 2 \\ k - m = 3 \end{array} \right\}$$

$$AB = \sqrt{(\Delta x)^2 + (\Delta y)^2} = \sqrt{3^2 + 1^2} = \sqrt{10} \quad S = (\sqrt{10})^2 = 10$$

$\hookrightarrow k - m = 3$



$$-1 + n = 3 - 1 - n \Rightarrow 2n = 3 \Rightarrow n = \frac{3}{2}$$

$$m_{AB} = -\frac{2}{3} \quad m_{AB} \times m_{BC} = -1$$

$$D(-1 - n, y + 2) \quad C(\frac{3}{2}, y)$$

$-\frac{2}{3} \quad \frac{3}{2} - 1$

$$\Rightarrow m_{BC} = \frac{\varepsilon}{3} = \frac{y - 1}{\frac{3}{2} - \frac{1}{2}}$$

$$-\frac{2}{3} \times \frac{\varepsilon}{3} = -2 = y - 1 = y = -1$$

$$AB = \sqrt{14 + 9} = 5$$

$$(5 + \frac{5}{3}) \times 2 = 15$$

$$BC = \sqrt{\frac{9}{\varepsilon} + \varepsilon} = \frac{5}{3}$$

$$2m^2 + (m^2 - 1)y = 3$$

$$\tan 40^\circ = \sqrt{3} = m$$

(سوال 3)

$$-\frac{2m}{m^2 - 1} = \sqrt{3} \Rightarrow \sqrt{3}(m+1)(m-1) = -2m$$

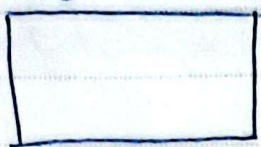
$$\frac{(m+1)(m-1)}{m} = -\frac{2\sqrt{3}}{\sqrt{3}} \Rightarrow 3m^2 - 3 = -2\sqrt{3}m \Rightarrow 3m^2 + 2\sqrt{3}m - 3 = 0$$

$$(m + \sqrt{3})(m - \sqrt{3}) = 0 \Rightarrow m = -\sqrt{3}, \frac{\sqrt{3}}{3}$$

$$\frac{\sqrt{3}}{3} + \sqrt{3} = \frac{4\sqrt{3}}{3}$$

Arman

$$ay - n = a - 1$$



$$y - an = 1$$

(5, 1)

$$\frac{1}{a} = \frac{a}{1} \Rightarrow ay = 1$$

$$\Rightarrow a = \pm 1$$

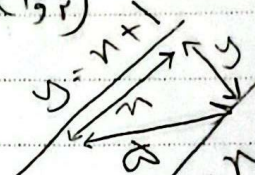
(سؤال ٧)

$$a=1 \rightarrow y=n, y=n+1 \quad a=-1 \rightarrow y=-n+1, y=-n+1$$

(1, 1)

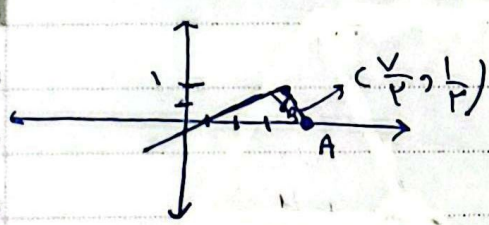
نقطه (1, 1) روی خط مستقیم است

$$y = d = \frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{1}{\sqrt{1}} = \frac{\sqrt{2}}{2}$$



$$d = \sqrt{n^2 + y^2} \Rightarrow \left(\frac{\sqrt{2}}{2}\right)^2 + n^2 = 1 \Rightarrow n = \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$S = ny = \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} = \frac{1}{2}$$



$$AH = \frac{|1(1) - 1(1) - 1|}{\sqrt{1+9}}$$

$$= \frac{1}{\sqrt{10}} = \frac{\sqrt{10}}{10}$$

(سؤال ٨)

$$y = \frac{1}{3}x - \frac{1}{3}$$

$$m_{AC} = -3$$

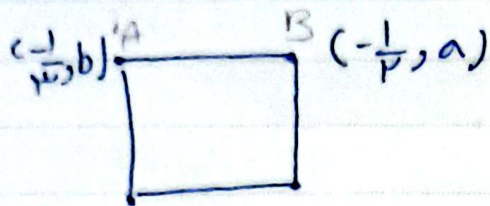
$$y = -3x + b \xrightarrow{(1, 1)} y = -3x + 4$$

$$C: -3x + 4 = \frac{1}{3}x - \frac{1}{3} \xrightarrow{\times 3} -9x + 12 = \frac{1}{3}x - \frac{1}{3}$$

$$-9x + 12 = \frac{1}{3}x - \frac{1}{3} \Rightarrow 10x = \frac{37}{3} \Rightarrow x = \frac{37}{30}, y = \frac{1}{10}$$

$$\begin{bmatrix} \frac{37}{30} & \frac{1}{10} & 1 \\ 0 & 0 & 0 \\ 1 & 1 & 1 \end{bmatrix} \rightarrow (0 + 0, 9 + 1) = (0 + 1, 9 + 1) \div \frac{1}{10} = 1, 10$$

Arman



$$\frac{a-b}{-\frac{1}{\mu} + \frac{1}{p}} = 4(b-a)\sqrt{5} \quad (\text{سوال 9})$$

$$b-a = \frac{\sqrt{\mu}}{4}$$

$$AB = \sqrt{\frac{1}{\mu^2} + \frac{1}{1^2}} = \frac{1}{\mu}$$

$$AB = a\sqrt{2} = \frac{\sqrt{2}}{\mu}$$

$$\text{مساحت: } \sqrt{\mu^2 + 2} = 5$$

$$m_{OA} = \frac{\epsilon}{\mu} \Rightarrow m_L = -\frac{\mu}{\epsilon}$$

$$\Rightarrow m_{L'} = -\frac{\epsilon}{\mu} \Rightarrow OA \parallel L'$$

$$y_L = -\frac{\mu}{\epsilon}x - \frac{\mu}{\epsilon} \quad (1)$$

$$y_{OA} = \frac{\epsilon}{\mu}x \quad y_{L'} = \frac{\epsilon}{\mu}x + c$$

$$L' \parallel OA \Rightarrow \text{مساحت} = 5 \Rightarrow \frac{c}{\sqrt{(1)^2 + \frac{1}{\mu^2}}} = 5$$

$$\Rightarrow c = \frac{\mu}{\epsilon}$$

$$\Rightarrow y_{L'} = \frac{\epsilon}{\mu}x + \frac{\mu}{\epsilon} \quad (2)$$

$$\rightarrow \left(-\frac{\mu}{\epsilon}x - \frac{\mu}{\epsilon} = \frac{\epsilon}{\mu}x + \frac{\mu}{\epsilon}\right) \times 12$$

$$\Rightarrow 120x = -12\mu \Rightarrow x = -1$$

$$y = -\frac{\mu}{\epsilon} + \frac{\mu}{\epsilon} = -1$$

$$xy = 1$$