

$$\frac{m-K}{K(-1)} = -\frac{1}{p} \Rightarrow m-K = -1$$

$$A(-1, K) \text{ و } B(1, m) \text{ (نقطه ها را مبداء و انتهای بردار در نظر بگیریم)}$$

(۲)

$$AB = \sqrt{(1-(-1))^2 + (m-K)^2} = \sqrt{4+9} = \sqrt{13} = 2\sqrt{13} \quad S = \sqrt{13} \times \sqrt{13} = 13$$

$$O(-1, -2), C(1, 2), B(1, 1), A(-1, 2)$$



$$m_{CD} = \frac{1}{-1-1} = -\frac{1}{2} \Rightarrow -1+2x = -1 \Rightarrow 2x = 0 \Rightarrow x = 0 \quad m = -\frac{1}{2} \quad CD \parallel AB$$

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

$$x = y = -1$$

$$\Rightarrow C(\frac{1}{2}, -1) \text{ و } D(-\frac{1}{2}, 1) \quad AB = \sqrt{9+16} = 5$$

$$BC = \sqrt{1 + \frac{9}{4}} = \sqrt{\frac{13}{4}} = \frac{\sqrt{13}}{2} \quad S = 2(\frac{\sqrt{13}}{2} \times \frac{\sqrt{13}}{2}) = 13$$

$$\tan \theta = \frac{-1m}{m^2-1} = \frac{-1}{1-1} = \frac{-1}{0} = \infty \Rightarrow \theta = 90^\circ \Rightarrow \sqrt{1+m^2} = \sqrt{1} = 1 \Rightarrow \sqrt{1+m^2} = 1 \Rightarrow 1+m^2 = 1 \Rightarrow m^2 = 0 \Rightarrow m = 0$$

(۳)

$$\Delta = 1+16 = 17 \quad m = \frac{-1 \pm \sqrt{17}}{2}$$

(۴)

$$m_1 - m_2 = \frac{1}{\sqrt{17}} - \frac{-1}{\sqrt{17}} = \frac{2}{\sqrt{17}}$$

$$m_{BC} = \frac{1}{1} = 1 \quad m_{AH} = -\frac{1}{2} \quad AH = \sqrt{1+16} = \sqrt{17}$$

(۵)

$$y-1 = 1(x-1) \quad y-1 = -\frac{1}{2}(x-1)$$

(۶)

$$y = x-1 \quad y = -\frac{1}{2}x + \frac{1}{2} \Rightarrow x-1 = -\frac{1}{2}x + \frac{1}{2} \Rightarrow \frac{3}{2}x = \frac{3}{2} \Rightarrow x = 1, y = 0$$

$$x-1 = -\frac{1}{2}x + \frac{1}{2} \Rightarrow \frac{3}{2}x = \frac{3}{2} \Rightarrow x = 1, y = 0 \quad H(1, 0)$$

$$\begin{cases} y+2x=1 \\ 2y-3x=1 \end{cases} \Rightarrow \begin{cases} -xg-11x=11 \\ 2y-3x=1 \end{cases} \Rightarrow \begin{cases} x=-1 \\ y=0 \end{cases} \quad A(1, 0)$$

$$m_{AC} = \frac{1}{1} = 1 \quad m_{BH} = -\frac{1}{2}$$

$$\begin{cases} y-0 = \frac{1}{1}(x-1) \\ y-1 = -\frac{1}{2}(x-1) \end{cases} \Rightarrow \begin{cases} y = x-1 \\ y = -\frac{1}{2}x + \frac{1}{2} \end{cases}$$

(۷)

$$\begin{cases} y+2x=1 \\ 2y-3x=1 \end{cases} \Rightarrow \begin{cases} -xg-11x=11 \\ 2y-3x=1 \end{cases} \Rightarrow \begin{cases} x=-1 \\ y=0 \end{cases} \quad B(1, 1)$$

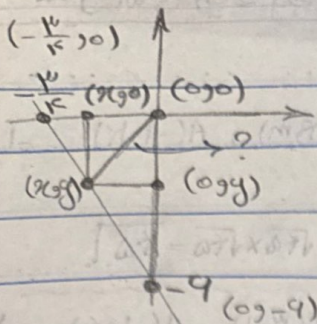
$$\frac{-1x+0}{1} = \frac{1x+1}{1} \Rightarrow -1x = 1x+1 \Rightarrow -2x = 1 \Rightarrow x = -\frac{1}{2}, y = 1$$

$$\begin{cases} 2y-3x=1 \\ xg+5x=1 \end{cases} \Rightarrow \begin{cases} -xg-11x=11 \\ xg+5x=1 \end{cases} \Rightarrow \begin{cases} x=-1 \\ y=0 \end{cases}$$

$$BH = \sqrt{(1-(-1))^2 + (1-0)^2} = \sqrt{4+1} = \sqrt{5}$$

$$\begin{cases} -xg-11x=11 \\ 2y-3x=1 \end{cases} \Rightarrow \begin{cases} x=-1 \\ y=0 \end{cases}$$

$$BH = \frac{|1-0-1|}{1} = 0$$



$$x = y \text{ (مستقيم)} \Rightarrow x = y$$

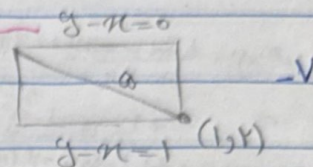
$$\Rightarrow x = y = -z$$

$$m = \frac{-9-0}{0-(-\frac{10}{9})} = -1 \quad y+9 = -1(x-0) \Rightarrow y = -x-9$$

$$\Rightarrow -z = +1 \Rightarrow z = -1 \Rightarrow z = \frac{1}{9} \Rightarrow x = y = -\frac{1}{9}$$

$$d = \sqrt{\frac{1}{9} + \frac{1}{9}} = \frac{\sqrt{2}}{9} = \frac{1}{9} \sqrt{2}$$

$$m = a = \frac{1}{a} \Rightarrow a = \pm 1 \quad \begin{cases} y - x = 1 \Rightarrow (1, 2) \\ y - x = 0 \end{cases}$$



$$d = \frac{|y-x|}{\sqrt{2}} = \frac{1-1}{\sqrt{2}} = \frac{1}{\sqrt{2}}$$

$$\omega = \left(\frac{1}{\sqrt{2}}\right)^2 + x^2 \Rightarrow x^2 = \frac{1}{2} - \frac{1}{9} = \frac{7}{18} \Rightarrow x = \frac{\sqrt{14}}{\sqrt{18}}$$

$$S = \frac{1}{\sqrt{2}} \times \frac{\sqrt{14}}{\sqrt{18}} = \frac{\sqrt{7}}{6}$$

$$d = \frac{|1+0-1|}{\sqrt{1+9}} = \frac{0}{\sqrt{10}} = 0 \quad \text{مساحة المثلث} = \frac{1}{2} \times \text{القاعدة} \times \text{الارتفاع}$$

$$AB^2 = AH^2 + BH^2 \Rightarrow \left(\frac{\sqrt{10}}{10}\right)^2 + BH^2 = \left(\frac{9}{10}\right)^2 \Rightarrow BH = \frac{9}{10}$$

$$\Rightarrow S = \frac{1}{2} d^2 = \frac{1}{2} \times \frac{9}{10} = \frac{9}{20}$$

$$S = \frac{1}{2} \times \frac{9}{10} \times \frac{1}{5} = \frac{9}{100}$$

$$\frac{\Delta y}{\Delta x} = \frac{a-b}{-\frac{1}{9} - (-\frac{1}{9})} = \sqrt{10} \Rightarrow a-b = \frac{\sqrt{10}}{9}$$

$$\text{مساحة المثلث} = \frac{1}{2} \times \text{القاعدة} \times \text{الارتفاع} = \frac{1}{2} \times \frac{\sqrt{10}}{9} \times \sqrt{10} = \frac{5}{9}$$

$$AB = \sqrt{(a-b)^2 + \left(\frac{1}{9}\right)^2} = \sqrt{\frac{10}{81} + \frac{1}{81}} = \frac{\sqrt{11}}{9}$$

$$m_{AO} = \frac{1}{9} \Rightarrow m_L = -\frac{1}{9} \Rightarrow y + 9 = -\frac{1}{9}(x + 9) \Rightarrow y = -\frac{1}{9}x - 8$$

$$m_L = \frac{1}{9} \Rightarrow y = \frac{1}{9}x + b \Rightarrow |y - \frac{1}{9}x - b| = d \Rightarrow |y - \frac{1}{9}x - b| = \frac{\sqrt{10}}{9}$$

$$m_{BO} = -\frac{1}{9}$$

$$\Rightarrow (-9 + 9) \Rightarrow |b| = \frac{\sqrt{10}}{9} \Rightarrow b = \pm \frac{\sqrt{10}}{9}$$

$$\begin{cases} y = -\frac{1}{9}x - 8 \\ y = \frac{1}{9}x + \frac{\sqrt{10}}{9} \end{cases} \Rightarrow x = -9 \Rightarrow y = -1$$

$$\begin{cases} y = -\frac{1}{9}x - 8 \\ y = \frac{1}{9}x + \frac{\sqrt{10}}{9} \end{cases} \Rightarrow -9x - 1 = \sqrt{10} \Rightarrow x = -\frac{\sqrt{10}}{9} \Rightarrow y = -1$$

$$\begin{cases} y + \frac{1}{9}x = -8 \\ -y + \frac{1}{9}x = -\frac{\sqrt{10}}{9} \end{cases} \Rightarrow \frac{2}{9}x = -8 + \frac{\sqrt{10}}{9} \Rightarrow x = -\frac{1}{2}(9 - \frac{\sqrt{10}}{2}) \Rightarrow x = -\frac{1}{2}(9 - \frac{\sqrt{10}}{2})$$