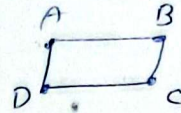


$$A \begin{bmatrix} -1 \\ 4 \end{bmatrix} \quad D \begin{bmatrix} 1 \\ 1 \end{bmatrix} \rightarrow \text{شیب} = \frac{-1}{1} = -1 = \frac{y_1 - y_2}{x_1 - x_2} = \frac{m - k}{1 + 1} = \frac{-1}{2} \rightarrow m - k = -1$$

$$AB = \sqrt{(m_1 - m_2)^2 + (y_1 - y_2)^2} = \sqrt{(-1)^2 + (-1)^2} = \sqrt{1 + 1} = \sqrt{2} = \sqrt{2} \quad \text{ضلع مربع}$$

$$S = \sqrt{2} \times \sqrt{2} = \boxed{2}$$

$$A \begin{bmatrix} -1 \\ 4 \end{bmatrix} \quad B \begin{bmatrix} 1 \\ 1 \end{bmatrix} \quad C \begin{bmatrix} 2 \\ 1 \end{bmatrix} \quad D \begin{bmatrix} -1 - \lambda \\ y + 4 \end{bmatrix}$$



$$x_A + x_C = x_B + x_D \rightarrow -1 + 2 = 1 - \lambda \rightarrow 2\lambda = 0 \rightarrow \lambda = 0$$

$$y_A + y_C = y_B + y_D \rightarrow 4 + 1 = 1 + y + 4 \rightarrow y = 0$$

$$C \begin{bmatrix} 2 \\ 1 \end{bmatrix} \quad B \begin{bmatrix} 1 \\ 1 \end{bmatrix} \rightarrow \text{شیب} = \frac{1-1}{1-2} = \frac{0}{-1} = 0$$

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

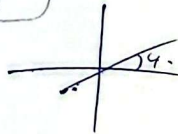
$$BC = \sqrt{(2 - \frac{1}{2})^2 + (1 - 1)^2} = \sqrt{\frac{9}{4} + 0} = \sqrt{\frac{9}{4}} = \frac{3}{2}$$

$$C \begin{bmatrix} 2 \\ 1 \end{bmatrix} \rightarrow \text{شیب} = \frac{1-1}{2-\frac{1}{2}} = \frac{0}{\frac{3}{2}} = 0$$

$$D \begin{bmatrix} -1 - \lambda \\ y + 4 \end{bmatrix} \rightarrow \text{شیب} = \frac{y+4 - 1}{-1-\lambda - 2} = \frac{y+3}{-3-\lambda}$$

$$S = 2(5 + \frac{3}{2}) = \boxed{13}$$

$$m x + (m^2 - 1) y = c$$



$$\frac{c}{m^2 - 1} = \tan \theta = \sqrt{2}$$

$$\frac{-m}{m^2 - 1} = \sqrt{2}$$

$$-m = \sqrt{2} m^2 - \sqrt{2}$$

$$\sqrt{2} m^2 + m - \sqrt{2} = 0$$

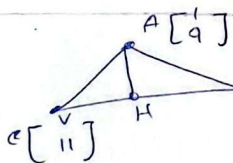
$$m^2 + \frac{m}{\sqrt{2}} - 1 = 0$$

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

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

$$m = -\frac{1}{\sqrt{2}}$$

$$m = \frac{1}{\sqrt{2}}$$



$$B \begin{bmatrix} 1 \\ 1 \end{bmatrix} \rightarrow \text{شیب} = \frac{1-1}{1-2} = \frac{0}{-1} = 0$$

$$y - 1 = 0(n - 2)$$

$$y - 1 = 0(n - 2)$$

$$B \text{ line} \rightarrow y = 1$$

$$-2n + y + 1 = 0$$

$$BC \text{ line} = \frac{|ax + by + c|}{\sqrt{a^2 + b^2}} = \frac{|-2 + 1 + 1|}{\sqrt{4 + 1}} = \frac{0}{\sqrt{5}} = 0$$

$$AB: y + 2x = 1$$

$$AC: 2y - 2x = 1$$

$$BC: 2y - 2x = -1$$

$$B \text{ line: } \begin{cases} -2x + 2y = -1 \\ 2x + y = 1 \end{cases} \Rightarrow \begin{matrix} x = -\frac{1}{11} \\ y = \frac{1}{11} \end{matrix} = B$$

$$\begin{matrix} x = -\frac{1}{11} \\ y = \frac{1}{11} \end{matrix} = B$$

$$B \text{ line}$$

$$AC \text{ line}$$

$$BC \text{ line}$$

$$AC: -2x + 2y - 1 = 0$$

$$\frac{2}{\omega} = \boxed{2}$$

$$\vec{n} = \begin{bmatrix} 1 \\ 4 \end{bmatrix} \quad \text{خط} = y = -1x - 4$$

اگر یک خط خاص به تقاطع H با خطوط n و m باشد
 این اندازه است که در هر دو خط قرار دارد و در هر دو خط قرار دارد

در هر خط قرار دارد و در هر دو خط قرار دارد:

$$H: \begin{bmatrix} n \\ m \end{bmatrix} \quad y = -1x - 4 \quad n = -1x - 4 \quad 4x = -4 \rightarrow x = -\frac{1}{4}$$

$$y = -\frac{1}{4}$$

فاصله نقطه از خط = $\frac{|Ax + By + C|}{\sqrt{A^2 + B^2}}$

$$H: \begin{bmatrix} n \\ m \end{bmatrix} \quad y = -1x - 4 \quad \sqrt{1 + 16} = \sqrt{17}$$

فاصله نقطه از خط = $\frac{|Ax + By + C|}{\sqrt{A^2 + B^2}}$

$$y = x + 1 \quad y = x \quad \text{فاصله} = \frac{|1 - 1 + 1|}{\sqrt{2}} = \frac{1}{\sqrt{2}}$$

فاصله نقطه از خط = $\frac{|Ax + By + C|}{\sqrt{A^2 + B^2}}$

$$AC = \frac{|1 - 1 + 1|}{\sqrt{2}} = \frac{1}{\sqrt{2}}$$

فاصله نقطه از خط = $\frac{|Ax + By + C|}{\sqrt{A^2 + B^2}}$

$$B = \frac{|1 - 1 + 1|}{\sqrt{2}} = \frac{1}{\sqrt{2}}$$

فاصله نقطه از خط = $\frac{|Ax + By + C|}{\sqrt{A^2 + B^2}}$

$$BC = \sqrt{1 + 1} = \sqrt{2}$$

فاصله نقطه از خط = $\frac{|Ax + By + C|}{\sqrt{A^2 + B^2}}$

$$AB = \sqrt{1 + 1} = \sqrt{2}$$

فاصله نقطه از خط = $\frac{|Ax + By + C|}{\sqrt{A^2 + B^2}}$

$$AB = \sqrt{1 + 1} = \sqrt{2}$$

فاصله نقطه از خط = $\frac{|Ax + By + C|}{\sqrt{A^2 + B^2}}$

$$AB = \sqrt{1 + 1} = \sqrt{2}$$

فاصله نقطه از خط = $\frac{|Ax + By + C|}{\sqrt{A^2 + B^2}}$

$$AB = \sqrt{1 + 1} = \sqrt{2}$$

فاصله نقطه از خط = $\frac{|Ax + By + C|}{\sqrt{A^2 + B^2}}$

$$AB = \sqrt{1 + 1} = \sqrt{2}$$

$$\begin{aligned}
 & \xrightarrow{(III), (IV)} \text{imposed} = 0 \\
 & \text{AO } \frac{1}{2} \\
 & \text{AO: } -\frac{\varepsilon}{c} n + y = 0 \\
 & \left| -\frac{\varepsilon}{c} n - \frac{c}{\varepsilon} n - \frac{r_0}{\varepsilon} \right| = 0 \rightarrow \left| -\frac{r_0}{12} n - \frac{r_0}{\varepsilon} \right| = \frac{r_0}{c} \\
 & \quad \quad \quad \cancel{\frac{r_0}{9}} \quad \cancel{c} \\
 & \quad \quad \quad -\frac{r_0}{12} n - \frac{r_0}{\varepsilon} = \frac{r_0}{c} \\
 & \quad \quad \quad \frac{r_0}{12} n = -\frac{1r_0}{12} \\
 & \quad \quad \quad \underline{n = -1} \\
 & y = -\frac{c}{\varepsilon} n - \frac{r_0}{\varepsilon} \rightarrow \underline{y = -1} \Rightarrow \text{✓}
 \end{aligned}$$