

$$A(-2, 6) \quad B(8, m) \quad m = \frac{\Delta y}{\Delta x} = -\frac{1}{4} \Rightarrow -\frac{1}{4}x + b = y \Rightarrow a = -2 \Rightarrow 1 + b = 6$$

$$x = 8 \Rightarrow -2 + b = m \Rightarrow \begin{cases} 1 + b = 6 \\ 1 + b = 6 \\ -2 + b = m \end{cases} \Rightarrow \begin{cases} b = 5 \\ b = 5 \\ m = 3 \end{cases} \Rightarrow \text{فرض کنیم } m = 3 \Rightarrow \text{رابطه خط مستقیم}$$

$$\Rightarrow |AB| = \sqrt{(x_A - x_B)^2 + (y_A - y_B)^2} = \sqrt{(4)^2 + (3)^2} = \sqrt{25}$$

$$\Rightarrow S = (AB)^2 = (\sqrt{25})^2 = 25 \Rightarrow \text{مساحت مربع}$$

$$A(-1, 4) \quad B(3, 1) \quad C(m, y) \quad D(-1, -1) \quad m = \frac{1-4}{3-(-1)} = -\frac{3}{4}$$

$$m = \frac{y+4-y}{-1-(-1)} \Rightarrow -\frac{3}{4} \Rightarrow -\frac{3}{4} = -\frac{3}{4} \Rightarrow y = 1 \Rightarrow m = 1 \Rightarrow a = 1 \Rightarrow 10$$

$$m_{BC} = \frac{y-1}{1-3} \quad m_{AD} = \frac{4-y-3}{-1+3} \Rightarrow m_{BC} = m_{AD} \Rightarrow \frac{y-1}{-2} = \frac{1-y}{2} \Rightarrow y-1 = -(1-y) \Rightarrow y-1 = -1+y \Rightarrow 0=0$$

$$|AB| = \sqrt{(3-(-1))^2 + (1-4)^2} = \sqrt{20}$$

$$|BC| = \sqrt{(1-3)^2 + (y-1)^2} = \sqrt{4}$$

$$\Rightarrow \text{مساحت} = 10 + 2 = 12 \quad D = (-2, 0) \quad C = (1, 1) \Rightarrow \text{مساحت} = 1$$

$$m \tan \theta + (m^2 - 1)y = 3 \Rightarrow \theta = 45^\circ \Rightarrow \tan \theta = 1 \Rightarrow m(m^2 - 1)y = 3 - m \Rightarrow y = \frac{-m}{m^2 - 1} \Rightarrow \frac{3}{m^2 - 1} = \frac{-m}{m^2 - 1}$$

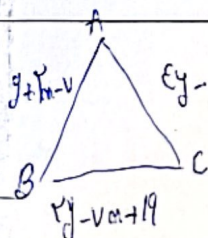
$$\Rightarrow \tan \theta = \frac{-m}{m^2 - 1} \Rightarrow \frac{-m}{m^2 - 1} = 1 \Rightarrow -m = m^2 - 1 \Rightarrow \sqrt{3}m^2 - m - \sqrt{3} = 0$$

$$m_1 = \frac{1 + \sqrt{13}}{2\sqrt{3}} \quad m_2 = \frac{1 - \sqrt{13}}{2\sqrt{3}} \Rightarrow m_1 + m_2 = \frac{2}{\sqrt{3}}$$

الیه از فرمول می توان برآورد افت ...

$$A(1, 9), \quad B(3, 3), \quad C(5, 11) \Rightarrow m_{BC} = \frac{\Delta y}{\Delta x} = \frac{8}{2} = 4 \Rightarrow y = 4x + b \Rightarrow 9 = 4 + b \Rightarrow b = 5 \Rightarrow y = 4x + 5$$

$$\Rightarrow y = 4x + 5 \Rightarrow \text{مساحت} = \frac{1}{2} |x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)| = \frac{1}{2} |1(3-11) + 3(11-9) + 5(9-3)| = 10$$



$$B \text{ در } AC \Rightarrow \begin{cases} y - 3x - 11 = 0 \\ y - 4x + 5 = 0 \end{cases} \Rightarrow \begin{cases} y = 3x + 11 \\ y = 4x - 5 \end{cases} \Rightarrow 3x + 11 = 4x - 5 \Rightarrow x = 16$$

$$\Rightarrow y = 1 \Rightarrow B(1, 1) \Rightarrow \text{مساحت} = \frac{1}{2} |x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)| = \frac{1}{2} |1(9-11) + 3(11-9) + 5(9-3)| = 10$$

$$A(-\frac{w}{\epsilon}, 0) \quad B(0, -y) \Rightarrow D = au + b \Rightarrow b = -y \Rightarrow au - y = y \Rightarrow a = -\frac{y}{\epsilon} \Rightarrow -\frac{y}{\epsilon}a - y = 0 \Rightarrow -\frac{y}{\epsilon}a = y \Rightarrow a = -1 \Rightarrow -1u - y = y \Rightarrow 1u + 4y = 0 = D$$

$$\Rightarrow \text{Distance} \Rightarrow \frac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}} \Rightarrow \frac{4}{\sqrt{40}} \frac{\sqrt{40}}{\sqrt{40}} \Rightarrow \frac{4\sqrt{40}}{40}$$

$$A = y - ax = 1 \Rightarrow \begin{cases} y - ax - 1 = 0 \\ ay - a - u + 1 = 0 \end{cases} \Rightarrow a = 1 \Rightarrow \begin{cases} y - x - 1 = 0 \\ y - x = 0 \end{cases}$$

به نظر می آید که این دو خط موازی هستند و هیچ نقطه اشتراکی ندارند.

$$AB \Rightarrow \frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{|1 - 1|}{\sqrt{1}} \Rightarrow \frac{1}{\sqrt{1}} \quad D = \text{خط} = 2 \Rightarrow y_2 = \frac{1}{1 + u^2} \Rightarrow a^2 = \frac{49}{1}$$

$$\Rightarrow a = \frac{7}{\sqrt{1}} \Rightarrow \frac{1}{\sqrt{1}} \times \frac{7}{\sqrt{1}} = \frac{7}{1} = 7 \quad D$$

$$A(1, 0) \quad L = u - y = 1 \Rightarrow L \perp A \Rightarrow \frac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}} \Rightarrow \frac{1}{\sqrt{10}}$$

$$B(1 + \frac{1}{10}, 1) \Rightarrow \sqrt{(\frac{1}{10})^2 + (1)^2} = \frac{1}{10} \Rightarrow \frac{1}{10} - 1u + 1 = \frac{1}{10} \Rightarrow 1u - 1u + 1 = \frac{1}{10} \Rightarrow 1u - 1u + 1 = \frac{1}{10}$$

$$\Rightarrow 1u - 1u + 1 = \frac{1}{10} \Rightarrow (1u - 1u) = \frac{1}{10} - 1 \Rightarrow u = \frac{9}{10} \Rightarrow u_B = \frac{9}{10} \quad y_B = \frac{1}{10}$$

$$C(1 + \frac{1}{10}, 1) \Rightarrow BC = \sqrt{(\frac{1}{10})^2 + (1)^2} \Rightarrow |BC| = \frac{1}{10} \quad (1 - \frac{1}{10}) = \frac{9}{10}$$

$$P(\frac{1}{10}, \frac{1}{10}) \Rightarrow BC_{\text{min}} = \frac{1}{\sqrt{10}} \times \frac{1}{10} \Rightarrow \delta = \frac{1}{10} \times \frac{1}{\sqrt{10}} \times \frac{1}{10} \times \frac{1}{\sqrt{10}} = \frac{1}{100}$$

$$\Delta = \sqrt{10}u + D = y \Rightarrow A(-\frac{1}{\sqrt{10}}, b) \quad B(-\frac{1}{\sqrt{10}}, u) \Rightarrow \begin{cases} -\frac{\sqrt{10}}{10} + D = b \\ -\frac{\sqrt{10}}{10} + D = u \end{cases}$$

$$|AB| = \sqrt{(x_A - x_B)^2 + (y_A - y_B)^2} \Rightarrow \sqrt{(-\frac{1}{\sqrt{10}} + \frac{1}{\sqrt{10}})^2 + (\frac{1}{\sqrt{10}} - \frac{1}{\sqrt{10}})^2} \Rightarrow \frac{1}{\sqrt{10}} + \frac{1}{\sqrt{10}} = \frac{2}{\sqrt{10}} \Rightarrow AB = \frac{2}{\sqrt{10}} = \frac{1}{\sqrt{5}}$$

$$\Rightarrow \frac{1}{\sqrt{5}} \Rightarrow \frac{1}{\sqrt{5}} + \frac{1}{\sqrt{5}} = \frac{2}{\sqrt{5}} \Rightarrow \text{خط} = \frac{\sqrt{10}}{10}$$

$$1. \text{ فاصله } = (-2 - \frac{1}{2})^2 + (-1)^2 = 2 \Rightarrow m = \frac{-2 - \frac{1}{2}}{-1 - 0} = \frac{5}{2}$$

$$\text{خط } m = -\frac{3}{5} \Rightarrow y = -\frac{3}{5}x + 1 \Rightarrow \text{خط } m = \frac{5}{3} \Rightarrow y = \frac{5}{3}x + b$$

$$\text{فاصله} = \frac{|b|}{\sqrt{(\frac{5}{3})^2 + 1}} = 2 \Rightarrow \sqrt{1 + \frac{25}{9}} = \sqrt{\frac{34}{9}} = \frac{\sqrt{34}}{3} \Rightarrow \frac{|b|}{\frac{\sqrt{34}}{3}} = 2 \Rightarrow |b| = \frac{2\sqrt{34}}{3}$$

$$b = \frac{2\sqrt{34}}{3} \quad \text{خط } m = -\frac{3}{5} \Rightarrow y = -\frac{3}{5}x + 1 \quad \text{خط } m = \frac{5}{3} \Rightarrow y = \frac{5}{3}x + \frac{2\sqrt{34}}{3}$$

$$\Rightarrow \frac{5}{3}x + \frac{2\sqrt{34}}{3} = -\frac{3}{5}x + 1 \Rightarrow x = -\frac{1}{5} \quad y = -\frac{1}{5}$$

$$m \times y = (-1)(-1) = 1$$