

(سوال ۱)

$$m = \frac{y - (-2)}{x - 8} = -\frac{1}{8} \rightarrow y = -\frac{1}{8}x + b \xrightarrow{(8, -2)} -2 = -\frac{1}{8}(8) + b \rightarrow b = 1 \rightarrow y = -\frac{1}{8}x + 1 \quad (\text{الف})$$

(ب) m ها يك

$$m = -3 \Rightarrow y = -3x + b \xrightarrow{(2, 2)} 2 = -3(2) + b \rightarrow b = 14 \rightarrow y = -3x + 14$$

$$m \times m' = -1 \quad (\text{ج.})$$

$$m = -\frac{1}{3} \Rightarrow m' = 3$$

$$y = 3x + b \xrightarrow{(2, 2)} 2 = 3(2) + b \rightarrow b = -10 \rightarrow y = 3x - 10$$

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

$$y = \sqrt{3}x + b \xrightarrow{(2, 2)} 2 = \sqrt{3}(2) + b \Rightarrow y = \sqrt{3}x + 2 - 2\sqrt{3} \quad (\text{د.})$$

$$d = \frac{|\sqrt{14}x + 3y|}{\sqrt{(\sqrt{14})^2 + 3^2}} = \frac{|(2 - (-1)) + (2 - \sqrt{3})|}{\sqrt{14 + 9}} = \frac{3 - \sqrt{3}}{\sqrt{23}} \quad (\text{سوال ۲})$$

(الف)

$$\frac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}} = \frac{|(3 \times 2) + (4 \times 2) - 12|}{\sqrt{9 + 16}} = \frac{10}{5} = 2 \quad (\text{ب.})$$

$$4x + 3y - 12 = 0$$

$$\begin{aligned} 2x + 3y - 4 &= 0 \\ 4x + 3y - 12 &= 0 \end{aligned}$$

(سوال ۳)

b, a
ضرایب

$$4x + 3y - 12 = 0$$

$$\xrightarrow{\div 2} 2x + 3y - 6 = 0$$

$$\begin{aligned} c &= c' \\ &= \frac{-1 - 12}{4} = -\frac{13}{4} \end{aligned}$$

(ب)

$$\frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{|c|}{\sqrt{14 + 9}} = \frac{13}{5\sqrt{23}} = \frac{13\sqrt{23}}{115}$$

(سوال ۴)

$$\frac{|ax + by - c|}{\sqrt{a^2 + b^2}} = \frac{|a'x + b'y - c'|}{\sqrt{(a')^2 + (b')^2}} \rightarrow \frac{|3x - 2y - 1|}{\sqrt{13}} = \frac{|2x + 3y - 3|}{\sqrt{13}}$$

$$3x - 2y - 1 = 2x + 3y - 3 \rightarrow -5y = -x - 2 \rightarrow 5y = x + 2$$

$$y = \frac{1}{5}x + \frac{2}{5}$$

$$3x - 2y - 1 = -2x - 3y + 3 \rightarrow 5x - 5y = 4 \rightarrow y = x - \frac{4}{5}$$

سوال (۵)

$$m = 2 \quad m' = -3$$

$$\tan \alpha = \left| \frac{m - m'}{1 + mm'} \right| \Rightarrow \tan \alpha = \left| \frac{2 - (-3)}{1 + 2(-3)} \right| \Rightarrow \tan \alpha = 1 \Rightarrow \alpha = 45^\circ$$

بهمین جهت

$$d = \sqrt{(\Delta x)^2 + (\Delta y)^2} = \sqrt{(-1)^2 + (4)^2} = 1.5$$

$$m \left| \begin{array}{l} \frac{-2+3}{2} = -1 \\ \frac{4-2}{2} = 1 \end{array} \right. \rightarrow m \left| \begin{array}{l} -1 \\ 1 \end{array} \right.$$

$$x_{\text{تقاطع}} = \frac{-10 - 2 + 3}{2} = -\frac{9}{2} = -4.5$$

$$y_{\text{تقاطع}} = \frac{-13 + 3 + 1}{2} = -\frac{9}{2} = -4.5$$

سوال (۷)

$$\left| \begin{array}{l} -3 \\ -2 \end{array} \right|$$

تقریباً

$$\begin{array}{ccc|c} -10 & -13 & 1 & (-30 - 2 - 39) + (9 + 24 - 10) \\ -2 & 3 & 1 & \\ 2 & 1 & 1 & \end{array} = |94| = 94 \times \frac{1}{2} = 47$$

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

$$x + \frac{d}{19} = 1 - \frac{d}{19} \Rightarrow \frac{19}{19}$$

سوال (۸)

$$x = \frac{2y+1}{2y-3} \rightarrow 2yx - 3x = 2y+1$$

$$2yx - 2y = 3n+1 \rightarrow y(2n-2) = 3n+1$$

$$2 \times \frac{2}{19} \times \frac{n+1}{19} = \frac{2}{19}$$

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

$$-y = \frac{2n+1}{2n-3} \quad (\text{الف})$$

$$y = \frac{2n+1}{-2n-3} \quad (\text{ب})$$

$$-x = \frac{-2y+1}{-2y-3} \rightarrow 2xy + 3x = -2y+1 \rightarrow 2xy + 2y = -3x+1$$

$$y(2n+2) = -3n+1$$

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

$$y' = y + 3$$

$$\hookrightarrow y = y' - 3$$

$$= \frac{2n'+1}{n'-1}$$

$$n' = n - 2$$

$$\hookrightarrow n = n' + 2$$

در صورت

$$y' - 3 = \frac{2(n'+2)+1}{(n'+2)-3} \Rightarrow y' = \frac{2n'+5}{n'-1} \quad (\text{الف ۹ سوال})$$

$$y' = y - 1 \quad n' = n - 3 \quad \xrightarrow{\text{جواب}} \quad y' + 1 = \frac{2(n' + 3) + 1}{(n' + 3) - 3} = \frac{2n' + 7}{n'}$$

$$\rightarrow y' = \frac{2n' + 7 - 2n'}{n'} = \frac{7}{n'}$$

$$\begin{cases} \cancel{3}n + \epsilon y = 2 \\ (\cancel{3} - 2y = 1) x - 3 \end{cases}$$

$$19y = -1 \rightarrow y = -\frac{1}{19}, \quad n = -\frac{14}{19}$$

$$\text{مجموع} = \begin{bmatrix} 3 & \epsilon \\ 1 & -5 \end{bmatrix} = -15 - \epsilon = -19$$

$$n \text{ صورت} = \begin{bmatrix} \epsilon & 2 \\ -5 & 1 \end{bmatrix} = \epsilon + 10 = 14$$

$$y \text{ صورت} = \begin{bmatrix} 3 & 2 \\ 1 & 1 \end{bmatrix} = 3 - 2 = 1 \quad \left(n = -\frac{14}{19} \right) y = -\frac{1}{19}$$