

$$\begin{vmatrix} 4 \\ 2 \end{vmatrix}$$

-1

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

$$\begin{vmatrix} 2 \\ -2 \end{vmatrix} \quad \text{ان}$$

$$y = ax + b \rightarrow y = -2x + b \xrightarrow{\begin{vmatrix} 2 \\ -2 \end{vmatrix}} -2 = -2(2) + b \rightarrow b = 1$$

$$y = -2x + 1$$

$$2y + 4x = -1 \rightarrow m' = \frac{-4}{2} = -2$$

$$m' = m = -2$$

$$y = ax + b \rightarrow y = -2x + b \xrightarrow{\begin{vmatrix} 2 \\ -2 \end{vmatrix}} 2 = -2(2) + b \rightarrow b = 6$$

$$y = -2x + 6$$

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

$$y = 3x + b \xrightarrow{\begin{vmatrix} 2 \\ -1 \end{vmatrix}} 2 = 3(2) + b \rightarrow b = -4$$

$$y = 3x - 4$$

15

$$\tan\left(\frac{\pi}{4}\right) = \sqrt{3} = m$$

$$y = \sqrt{3}x + b \xrightarrow{\begin{vmatrix} 2 \\ -1 \end{vmatrix}} 2 = \sqrt{3}(2) + b \rightarrow b = 2 - 2\sqrt{3}$$

$$y = \sqrt{3}x + 2 - 2\sqrt{3}$$

20

۲- $\frac{2}{13}$

(الف)

$$\sqrt{(-1-2)^2 + (1-3)^2} = \sqrt{9+4} = \sqrt{13} = 3.605 \text{ واحد}$$

(ب)

$$\frac{|3x+4y-3|}{\sqrt{9+16}} = \frac{|3(\frac{4}{5})+4(\frac{12}{5})-3|}{5} = \frac{15}{5} = 3 \text{ واحد}$$

۳-

10

$$\begin{cases} 4x+4y=1 \rightarrow 2x+2y=0.5 \\ 2x+3y=4 \end{cases} \quad C = \frac{4+4}{2} = 4$$

(الف)

$$2x+3y=4$$

15

$$\frac{|C-C'|}{\sqrt{4+4}} = \frac{|1-4|}{\sqrt{13}} = \frac{3}{\sqrt{13}} \xrightarrow{\text{جدد}} \frac{2\sqrt{13}}{13}$$

۴-

$$\begin{cases} 3x-2y=1 \rightarrow m = \frac{3}{2} \\ 2x+3y=3 \rightarrow m = -\frac{2}{3} \end{cases} \quad \text{مستقیم}$$

20

$$\frac{|3x-2y-1|}{\sqrt{9+4}} = \frac{|2x+3y-3|}{\sqrt{4+9}} \rightarrow (3x-2y-1) = \pm (2x+3y-3)$$

$$1) 3x-2y-1 = 2x+3y-3 \rightarrow x-5y+2=0 \text{ معادله شیب اول}$$

$$2) 3x-2y-1 = -(2x+3y-3) \rightarrow 5x+y-4=0 \text{ معادله شیب دوم}$$

Arman

$$y + 3x = 3, \quad y - 2x = 5 \quad - \omega$$

$$\tan \alpha = \left| \frac{m - m'}{1 + mm'} \right| \rightarrow \tan \alpha = \left| \frac{-3 - 2}{1 + (-4)} \right| \rightarrow \left| \frac{-5}{1 - 4} \right| = \left| \frac{-5}{-3} \right| = 1$$

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

$$\tan \alpha = 1 \rightarrow \alpha = 45^\circ$$

$$A \mid \begin{matrix} 3 \\ -2 \end{matrix}$$

$$B \mid \begin{matrix} -5 \\ 4 \end{matrix}$$

-4

$$\sqrt{\frac{(-2-4)^2}{36} + \frac{(3-(-5))^2}{48}} = \sqrt{100} = 10 \quad \text{واحد}$$

(الف)

$$x' = \frac{3-5}{2} = \frac{-2}{2} = -1, \quad y' = \frac{4-2}{2} = \frac{2}{2} = 1$$

(ب)

$$C \Rightarrow \begin{vmatrix} -1 \\ 1 \end{vmatrix}$$

$$\begin{vmatrix} -1 \\ -13 \end{vmatrix}, \begin{vmatrix} -2 \\ 3 \end{vmatrix}, \begin{vmatrix} 3 \\ 1 \end{vmatrix}$$

-V

(الف)

$$x = \frac{x_1 + x_2 + x_3}{3} = \frac{-1 - 2 + 3}{3} = \frac{-9}{3} = -3$$

$$y = \frac{y_1 + y_2 + y_3}{3} = \frac{-13 + 3 + 1}{3} = \frac{-9}{3} = -3$$

20

$$\text{مركز ثقل} \Rightarrow \begin{vmatrix} -3 \\ -3 \end{vmatrix}$$

Arman

(ب) دترجینان ←

$$\begin{array}{ccc} -1. & -2 & 3 \\ -13 & 3 & 1 \\ 1 & 1 & 1 \end{array}$$

$$5 \quad S = \frac{1}{2} |(-30 - 39 - 2 - 9 - 24 + 10)| = \frac{1}{2} \times 94 = 47 \quad \text{واحد مربع}$$

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

$$y' = -y \quad \text{الف}$$

$$10 \quad -y = \frac{2n+1}{En-3} \rightarrow y = \frac{-2n-1}{En-3}$$

$$u' = -u \quad \text{ب}$$

$$y = \frac{2(-u)+1}{E(-u)-3} \rightarrow y = \frac{-2u+1}{-Eu-3} \rightarrow y = \frac{2u-1}{Eu+3}$$

$$15 \quad y = u \quad \text{ج}$$

$$u = \frac{2y+1}{Ey-3} \rightarrow Euy-3u = 2y+1 \rightarrow Euy-2y = 3u+1$$

$$\rightarrow y(Eu-2) = 3u+1 \rightarrow y = \frac{3u+1}{Eu-2}$$

$$20 \quad y' = -u, \quad u' = -y \quad \leftarrow \quad y = -u \quad \text{د}$$

$$-u = \frac{2(-y)+1}{E(-y)-3} \rightarrow -u = \frac{-2y+1}{-Ey-3} \rightarrow Euy+3u = -2y+1 \rightarrow$$

$$\text{Arman} \quad Euy+2y = 1-3u \rightarrow y(Eu+2) = 1-3u \rightarrow$$

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

$$y = \frac{2x+1}{x-3} \quad -9$$

$$x = x' + a \quad y = y' + b \quad (a, b) \text{ مضافہ } | -\frac{2}{3} \text{ (الف)}$$

$$x = x' + 2$$

$$y = y' - 3$$

$$(y' - 3) = \frac{2(x' + 2) + 1}{(x' + 2) - 3} \rightarrow y' - 3 = \frac{2x' + 5}{x' - 1} \rightarrow$$

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

$$10 \quad y' = \frac{5x' + 2}{x' - 1} \quad \left. \vphantom{y'} \right\} \text{ نکالو } \rightarrow y = \frac{5x + 2}{x - 1}$$

$$x = x' + a \quad y = y' + b \quad (a, b) \quad | -\frac{2}{3} \text{ (ب)}$$

$$x = x' + 3$$

$$15 \quad y = y' + 2 \quad y' + 2 = \frac{2(x' + 3) + 1}{x' + 3 - 3} \rightarrow y' + 2 = \frac{2x' + 7}{x'} \rightarrow$$

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

$$\rightarrow y' = \frac{7}{x'} \quad \left. \vphantom{y'} \right\} \text{ نکالو } \rightarrow y = \frac{7}{x}$$

- 10

انف

$$\begin{cases} 3x + 4y = 2 \\ x - 12y = 1 \end{cases} \xrightarrow{\times 3} \begin{cases} 3x + 4y = 2 \\ 3x - 36y = 3 \end{cases}$$

$$19y = -1 \rightarrow y = -\frac{1}{19}$$

$$x - 12y = 1 \rightarrow x - 12\left(-\frac{1}{19}\right) = 1 \rightarrow x + \frac{12}{19} = 1 \rightarrow$$

$$x = \frac{19}{19} - \frac{12}{19} = \frac{7}{19}$$

$$x = \frac{-(-10-4)}{4-(-12)} = \frac{14}{16}$$

$$y = \frac{2-3}{4-(-12)} = -\frac{1}{16}$$

15

20

Arman