

ترتیب طهریان - تلفیف ۱۵ - یازدهم دفتر

$$m = \frac{y_A - y_B}{x_A - x_B} = \frac{2 - (-2)}{1 - 0} = -4$$

۱- الف) ۲

$$y - y_A = m(x - x_A) \Rightarrow y - 2 = -4(x - 1) \Rightarrow$$

$$y = -4x + 14 + 2 \Rightarrow y = -4x + 16$$

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

ب)

$$y - y_A = m(x - x_A) \Rightarrow y - 2 = -2(x - 1)$$

$$\Rightarrow y = -2x + 4$$

۲)

$$x + 3y = 1 \leadsto m = \frac{-1}{3} \quad \frac{mm' = -1}{\rightarrow} m' = 3$$

$$y - y_A = m(x - x_A) \Rightarrow y - 2 = 3(x - 1) \Rightarrow$$

$$y = 3x - 1$$

$$\frac{c}{m} = \tan \theta \quad \theta = \frac{\pi}{4} \rightarrow m = \tan \frac{\pi}{4} = \sqrt{3}$$

۳)

$$y - y_A = m(x - x_A) \Rightarrow y - 2 = \sqrt{3}(x - 1)$$

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

$$d = \sqrt{(x_A - x_B)^2 + (y_A - y_B)^2} = \sqrt{(2 - (-1))^2 + (3 - 1)^2}$$

۲- الف)

$$= \sqrt{9 + 4} = \sqrt{13} = \boxed{\omega}$$

$$3x + 2y - 3 = 0 \quad d = \frac{|ax_A + by_A + c|}{\sqrt{a^2 + b^2}}$$

۲) ۳)

$$\Rightarrow d = \frac{|3 \times 2 + 2 \times 3 - 3|}{\sqrt{9 + 4}} = \frac{10}{\omega} = 3$$

$$(1x + 4y = 4) \xrightarrow{\times 2} \begin{cases} 2x + 8y = 8 \\ 2x + 4y = 1 \end{cases} \rightarrow 2x + 8y = \frac{8+1}{2} = 1$$

$$\Rightarrow \boxed{px + my = d} \quad \text{b} \quad \boxed{px + my - d = 0} \quad \text{b} \quad \boxed{y = -\frac{p}{m}x + \frac{d}{m}} \quad \text{b}$$

$$d = \frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{|14 - 11|}{\sqrt{3^2 + 4^2}} = \frac{3}{\frac{\sqrt{25}}{5}} = \frac{3}{1} \times \frac{5}{5} = \frac{15}{5} = 3$$

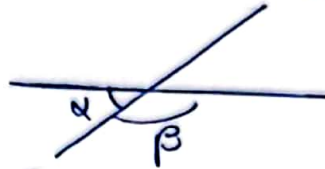
$$\tan \alpha = \left| \frac{m - m'}{1 + mm'} \right| \Rightarrow \tan \alpha = \left| \frac{2 - (-3)}{1 - 6} \right| = 1$$

$$d: y = 2x + 3 \Rightarrow m = 2$$

$$d': y = -3x + 3 \Rightarrow m = -3$$

$$\Rightarrow \alpha = 45^\circ$$

$$\beta = 135^\circ$$



$$d = \sqrt{(x_A - x_B)^2 + (y_A - y_B)^2} = \sqrt{(3 - (-3))^2 + (4 - (-2))^2}$$

$$= \sqrt{16 + 36} = 10$$

$$M \left| \begin{array}{l} \frac{x_A + x_B}{2} = \frac{3 - 3}{2} = -1 \\ \frac{y_A + y_B}{2} = \frac{4 - 2}{2} = 1 \end{array} \right.$$

$$M(-1, 1)$$

$$G \left| \begin{array}{l} \frac{x_A + x_B + x_C}{3} = \frac{-1 - 1 + 3}{3} = \frac{1}{3} \\ \frac{y_A + y_B + y_C}{3} = \frac{-1 + 1 + 1}{3} = \frac{1}{3} \end{array} \right.$$

$$G\left(\frac{1}{3}, \frac{1}{3}\right)$$

$$\begin{bmatrix} -1 & -2 & 3 \\ -3 & 3 & 1 \\ 1 & 1 & 1 \end{bmatrix} = \begin{vmatrix} -3 & -2 & 3 & -9 & -24 & 10 \end{vmatrix}$$

$$= 94$$

$$S = \frac{1}{3} \times 94 = 31$$

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

٨- الف) عرض نفقة قرينه مرشد :

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

ب) صد نفقة قرينه مرشد :

ج) جابری صحت و عرض را با جابری سنجیم:

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

$$\Rightarrow 4xy - 3x = 2y + 1$$

$$\Rightarrow (4x-2)y = 3x+1 \Rightarrow y = \frac{3x+1}{4x-2}$$

د) جابری صحت و عرض را با جابری سنجیم و آنرا با جابری سنجیم:

$$-x = \frac{-2y+1}{-4y-3} \xrightarrow{\div (-1)} x = - \frac{-2y+1}{-4y-3} = \frac{-2y+1}{4y+3}$$

$$\Rightarrow 4xy + 3x = -2y + 1 \Rightarrow (4x+2)y = -3x+1$$

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

$$y' = y + 3 \quad x' = x - 2$$

۹- الف)

$$\hookrightarrow y = y' - 3 \quad \hookrightarrow x = x' + 2$$

$$\xrightarrow{\text{جابری}} y' - 3 = \frac{2(x'+2)+1}{(x'+2)-3} \Rightarrow y' - 3 = \frac{2x' + 5}{x' - 1}$$

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

$$y' = y - 2 \quad x' = x - 3$$

ب)

$$\hookrightarrow y = y' + 2 \quad \hookrightarrow x = x' + 3$$

$$\xrightarrow{\text{جابری}} y' + 2 = \frac{2(x'+3)+1}{(x'+3)-3} = \frac{2x' + 7}{x'}$$

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

١٠- الف) $\begin{cases} 3x + 5y = 2 \\ (x - 5y = 1) \end{cases} \xrightarrow{\times (-5)} \begin{cases} 3x + 5y = 2 \\ -3x + 15y = -5 \end{cases}$

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

$$x + \frac{5}{19} = 1 \Rightarrow x = \frac{14}{19}$$

ب) $\begin{cases} 3x + 5y = 2 \\ x - 5y = 1 \end{cases} \quad x = -\frac{14}{-19} \quad y = \frac{1}{-19}$

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

$$x \text{ صورت} = \begin{bmatrix} 5 & 2 \\ -5 & 1 \end{bmatrix} = 5 - (-10) = 15$$

$$y \text{ صورت} = \begin{bmatrix} 3 & 2 \\ 1 & 1 \end{bmatrix} = 3 - 2 = 1$$

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

$$\frac{|ax + by - c|}{\sqrt{a^2 + b^2}} = \frac{|a'x + b'y + c'|}{\sqrt{a'^2 + b'^2}}$$

-K
5

$$\frac{|10x - 2y - 11|}{\sqrt{9 + 4}} = \frac{|2x + 10y - 10|}{\sqrt{4 + 9}} \Rightarrow |10x - 2y - 11| = |2x + 10y - 10|$$

$$\Rightarrow 10x - 2y - 11 = 2x + 10y - 10 \Rightarrow \boxed{x - 6y = -1}$$

$$\Rightarrow 10x - 2y - 11 = -2x - 10y + 10 \Rightarrow \boxed{12x + 8y = 21}$$