

$A/\sqrt{r}$

(1)

$$m = \frac{\Delta y}{\Delta x} = \frac{r}{-1} = -r$$

الف) $|r| \cdot \frac{5}{-r}$

$$\rightarrow y = -rx + 11$$

$$\rightarrow y = -rx + 14$$

ب) $-r = \frac{-4}{r}$ $\leftarrow$ $\frac{x}{y}$ قديم $\frac{y}{x}$ جديد $\leftarrow 2y + 4x + 1 = 0$

$$\rightarrow y = rx - 10$$

ج) $\leftarrow \frac{-1}{r} = \frac{x}{y}$ قديم $\frac{y}{x}$ جديد $\leftarrow x + ry - 1 = 0$

$$y = \sqrt{3}x - 5\sqrt{3} + 2$$

$\leftarrow \frac{r}{r} = 4^\circ \rightarrow \tan 4^\circ = \sqrt{3}$ د)

$A/\sqrt{r}$

(2)

الف) $|r| \cdot \frac{1}{\sqrt{r}} \rightarrow \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} = \sqrt{(r)^2 + (r)^2} = \sqrt{2}r$ ا)

ب) $d = \frac{|ax + by + c|}{\sqrt{a^2 + b^2}} = \frac{|4 + 12 - r|}{\sqrt{4 + 12}} = \frac{r}{\sqrt{16}} = \frac{r}{4}$ $A/\sqrt{r}$ و $rx + ry - r = 0$ ج)

د) $rx + ry - r = 0$, $rx + 4y - 11 = 0$ ه)

الف) $\rightarrow rx + 4y - 12 = 0$, $rx + 4y - 11 = 0$

$$\rightarrow ax + by + \frac{c + c'}{r} = 0 \rightarrow rx + 4y - 10 = 0$$

ب) $\frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{|-12 - (-11)|}{\sqrt{r^2 + 4r^2}} = \frac{r}{\sqrt{5r^2}} = \frac{r}{r\sqrt{5}} = \frac{1}{\sqrt{5}}$ $\left(\frac{2\sqrt{13}}{13} \right)$

$$3x - 2y - 1 = 0, 2x + 3y - 3 = 0$$

(۴)

$$\frac{|a_1x_1 + b_1y_1 + c_1|}{\sqrt{a_1^2 + b_1^2}} = \frac{|a_2x_2 + b_2y_2 + c_2|}{\sqrt{a_2^2 + b_2^2}}$$

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

$$\rightarrow \begin{cases} x - 5y + 2 = 0 \\ -x + 5y - 4 = 0 \end{cases}$$

$$\frac{\tan \alpha - \tan \beta}{1 + \tan \alpha \tan \beta} = \frac{-\frac{3}{4} - \frac{2}{1}}{1 + (-\frac{3}{4} \times 2)} = \frac{-\frac{7}{4}}{-\frac{1}{2}} = \frac{7}{2} = 1$$

(۵)

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

$$A \left| \frac{3}{-2} \right|, B \left| \frac{-2}{1} \right| \quad \sqrt{(1)^2 + (4)^2} = 10$$

(۶)

$$\left(\frac{3(-5)}{2}, \frac{-2+4}{2} \right) = (-1, 1)$$

(ب)

$$A \left| \frac{3}{1} \right|, B \left| \frac{-2}{1} \right|, C \left| \frac{-10}{-14} \right| \quad \text{میدان} = \left(\frac{3-2-10}{3}, 1 + \frac{3-14}{3} \right) \quad (۷)$$

$$\begin{cases} m = 9 + 2y - 10 = 2y \\ n = -2 - 2y - 2y = -4y \end{cases} \rightarrow \text{میدان} = (-3, -3)$$

Genobar

$$S = \frac{1}{2} |m - n| = \frac{1}{2} \times 4y = (2y)$$

Subject: (

المهندسين في الرياضيات

Date:

$$y = \frac{r_m + 1}{\varepsilon_m - r}$$

$$-y = \frac{r_m + 1}{\varepsilon_m - r} \Rightarrow y = \frac{-r_m - 1}{-\varepsilon_m + r} \quad (1) \quad \text{النقطة}$$

~~هو~~

$$y = \frac{-r_m + 1}{-\varepsilon_m - r}$$

(ب)

$$x = \frac{ry + 1}{\varepsilon y - r} \rightarrow \varepsilon xy - r_m = ry + 1$$

(ج)

$$\rightarrow \varepsilon xy - ry = r_m + 1 \rightarrow y(\varepsilon_m - r) = r_m + 1$$

$$\Rightarrow y = \frac{r_m + 1}{\varepsilon_m - r} \quad \leftarrow$$

$$-x = \frac{-ry + 1}{-\varepsilon y - r} \rightarrow \varepsilon xy + r_m = -ry + 1$$

(د)

$$\rightarrow \varepsilon xy + ry = -r_m + 1$$

$$\rightarrow y(\varepsilon_m + r) = -r_m + 1 \rightarrow y = \frac{-r_m + 1}{\varepsilon_m + r}$$

$$y - r = \frac{r(m+r) + 1}{(x+r) - r} \Rightarrow y - r = \frac{r_m + 1}{x - 1} \rightarrow y = \frac{r_m + 1}{x - 1} \quad (4) \quad \text{النقطة}$$

$$y = \frac{r_m + 1}{m - 1} \quad \leftarrow$$

$$y + r = \frac{r_m + 1}{(m+r) - r} \rightarrow y = \frac{r_m + 1}{m} \quad \leftarrow$$

(هـ)

— Arman —

(الف) حل کنید (۱۰)

$$\begin{cases} 3x + 4y = 2 \\ x - 5y = 1 \end{cases} \xrightarrow{x} \begin{cases} 3x + 4y = 2 \\ 3x - 15y = 3 \end{cases}$$

$$14y = -1 \rightarrow y = \frac{-1}{14} \rightarrow x = \frac{14}{14}$$

(ب) کلام

$$\begin{cases} 3x + 4y = 2 \\ x - 5y = 1 \end{cases} \quad \begin{bmatrix} 3 & 4 \\ 1 & -5 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 2 \\ 1 \end{bmatrix}$$

$$\Rightarrow \overset{-10}{3} \times \overset{-10}{(-5)} - \overset{-12}{(4)} \times \overset{-12}{(1)} = \boxed{-14} = D$$

$$D_x = \overset{-10}{(4)} \times \overset{-10}{(-5)} - \overset{-12}{(1)} \times \overset{-12}{(1)} = -12$$

$$D_y = \begin{bmatrix} 3 & 2 \\ 1 & 1 \end{bmatrix} \rightarrow (3)(1) - (2)(1) = 3 - 2 = 1$$

$$\rightarrow x = \frac{D_x}{D} = \frac{-12}{-14} = \left(\frac{12}{14} \right)$$

$$\rightarrow y = \frac{D_y}{D} = \frac{1}{-14} = \left(\frac{-1}{14} \right)$$