

تکلیف ۱۵

یازدهم دوره

دوره سه عده

(۲، ۱)

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الف) $y = ax + b$

$a = \frac{\Delta y}{\Delta x} = -2$

$y = -2x + b$

$2 = -2(4) + b \rightarrow b = 18$

ب) $2y + 4x = -1$

$m = -\frac{1}{2} \rightarrow y = -\frac{1}{2}x + b \rightarrow y = -\frac{1}{2}x + 14$

$20 = 2(8) + b \rightarrow b = 16$

ج) $x + 2y = 1$

$m = -\frac{1}{2} \rightarrow m = +\frac{1}{2}$

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

$y = 2x + 1 \rightarrow 2 = 2(4) + b \rightarrow b = -10$

د) $\tan \theta = \sqrt{3}$

$y = ax + b \rightarrow y = \sqrt{3}x + b$

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

$2 = \sqrt{3} + b \rightarrow b = 2 - \sqrt{3}$

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$a = \sqrt{3^2 + 4^2} = 5$

الف) $\frac{1}{5}$

$\frac{|4 + 12 - 30|}{5} = \frac{14}{5} = \frac{14}{5}$

$3x + 4y = 30$

$2x + 3y = 4$

$2x + 3y - 4 = 0$

$5x + 4y = 1$

$5x + 4y - 1 = 0$

$2x + 3y - 4 = 0$

$2x + 3y = 4$

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

الف)

$$d = \frac{|c - c'|}{\sqrt{a'^2 + b'^2}} = \frac{|-4 + 5|}{\sqrt{1^2 + 1^2}} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$2x + 3y = 10$$

$$2x - 3y = 1$$

نمود:

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

$$\frac{|2x - 3y - 1|}{\sqrt{10}} = \frac{|2x + 3y - 10|}{\sqrt{10}}$$

$$2x - 3y - 1 = 2x + 3y - 10$$

$$-6y + 9 = 0 \quad (1)$$

$$2x - 3y - 1 = -2x - 3y + 10$$

$$4x - 11 = 0 \quad (2)$$

$$y - 2x = 0$$

$$m = \frac{-b}{a} = -2$$

$$y - 2x = 0$$

$$m = \frac{-b}{a} = 2$$

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

$$A \begin{pmatrix} 1 \\ -2 \end{pmatrix}$$

$$B \begin{pmatrix} -2 \\ 1 \end{pmatrix}$$

$$d = \sqrt{1^2 + 4^2} = \sqrt{17}$$

الف:

$$M(-1, 2)$$

$$m = \frac{-2 - 10}{1} = -12 \quad y = \frac{10 - 1}{1} = 9$$

$$\begin{vmatrix} -10 & -2 & 3 \\ -13 & 3 & 1 \end{vmatrix} \quad \text{①}$$

$$G(-13-0)$$

$$G \left| \begin{array}{l} \frac{-2+3-10}{3} = -3 \text{ (الف)} \\ \frac{-13+3+1}{3} = -3 \end{array} \right.$$

$$S = \frac{1}{4} \begin{vmatrix} -10 & -2 & 3 \\ -13 & 3 & 1 \\ 1 & 1 & 1 \end{vmatrix} = \frac{1}{4} \times 194 = 48.5 \text{ (ب)}$$

$$|-10-13-2-(9-10+24)| = 194$$

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

الف) فریب سبب - جبراً

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

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

ب) $\frac{2x-1}{x+3}$ و $\frac{2x+1}{x-3}$ جبراً

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

ج) حذف زائد و صفر

$$2xy - 3x = 2y + 1$$

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

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

د) حذف صفر و صفر

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

(4)

$$\begin{cases} x' = x - 2 \\ y' = y + 3 \end{cases} \rightarrow \begin{cases} x = x' + 2 \\ y = y' - 3 \end{cases}$$

الف) $\frac{2}{-3}$

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

$$\begin{cases} x' = x' + 3 \\ y = y' + 2 \end{cases}$$

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

ب) $\frac{3}{2}$

$$\Rightarrow y' = \frac{V}{x'}$$

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

(1)

$$-19y = 1$$

الف) ضرب

$$y = -\frac{1}{19} \Rightarrow x = \frac{18}{19}$$

$$x = -\frac{4 + 10}{-15 - 6} = -\frac{+14}{-19} = \frac{+14}{19}$$

ب) کسری

$$y = \frac{3 + 2}{-10 - 6} = \frac{1}{-16}$$