

نام و نام خانوادگی: مسیحی بزرگوار پاسخنامه تشریحی تکلیف شماره ۱۸۱ ... کلاس: یازدهم بهار B

الف) $m = \frac{\Delta y}{\Delta x} = \frac{3 - (-2)}{4 - 5} = \frac{5}{-1} = -5$ $y = -5x + b \Rightarrow 2 = -10 + b \Rightarrow b = 12$
 $y = -5x + 12$

ب) $2y + 3x = b \Rightarrow 4 + 6 = b = 10 \Rightarrow 2y + 3x = 10$ $m = \tan \frac{\pi}{6} = \frac{1}{\sqrt{3}}$
 ج) $x + 3y = 1 \Rightarrow -3x + y = b \Rightarrow -12 + 2 = b = -10$ $y = \frac{1}{\sqrt{3}}x + b \Rightarrow 2 + \frac{2}{\sqrt{3}} + b = 0 \Rightarrow b = -2 - \frac{2}{\sqrt{3}}$
 $y = \frac{1}{\sqrt{3}}x - 2 - \frac{2}{\sqrt{3}}$

الف) $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \sqrt{3^2 + (-4)^2} = \sqrt{9 + 16} = \sqrt{25} = 5$

ب) $3x + 4y - 3 = 0$ $\frac{|3x_1 + 4y_1 - 3|}{\sqrt{3^2 + 4^2}} = \frac{|15|}{5} = 3$

الف) $2x + 3y = 4$ $\left\{ \begin{array}{l} \text{ضرب در ۲} \\ \text{تفاضل} \end{array} \right. \Rightarrow 2x + 3y = \frac{4+6}{2} \Rightarrow 2x + 3y = 5$

ب) $2x + 3y = 4$ $\frac{|4 - 4|}{\sqrt{2^2 + 3^2}} = \frac{0}{\sqrt{13}} = 0$

$\frac{|3x - 2y - 1|}{\sqrt{3^2 + 2^2}} = \frac{|2x + 3y - 3|}{\sqrt{2^2 + 3^2}} \Rightarrow |3x - 2y - 1| = |2x + 3y - 3|$
 $\Rightarrow 3x - 2y - 1 = 2x + 3y - 3 \Rightarrow x - 5y = -2 \Rightarrow y = \frac{1}{5}x + \frac{2}{5}$
 $\Rightarrow 3x - 2y - 1 = -(2x + 3y - 3) \Rightarrow 5x + y = 4 \Rightarrow y = -5x + 4$

$y = 2x + 5$

$y = -3x + 3$

$\tan \alpha = \left| \frac{2 - (-3)}{1 - 4} \right| = \left| \frac{5}{-3} \right| = 1 \Rightarrow \alpha = 45^\circ$

الف) $AB = \sqrt{(\Delta x)^2 + (\Delta y)^2} = \sqrt{1^2 + 4^2} = \sqrt{17} = \sqrt{17} \cdot \sqrt{100} = 10$

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ب) $M \begin{vmatrix} \frac{x_A + x_B}{2} = \frac{3+5}{2} = 4 \\ \frac{y_A + y_B}{2} = \frac{2+4}{2} = 3 \end{vmatrix} \Rightarrow M \begin{vmatrix} 4 \\ 3 \end{vmatrix}$

الف) $M \begin{vmatrix} \frac{x_1 + x_2 + x_3}{3} = \frac{-10 + 2 + 3}{3} = -3 \\ \frac{y_1 + y_2 + y_3}{3} = \frac{-13 + 3 + 1}{3} = -3 \end{vmatrix} \Rightarrow M \begin{vmatrix} -3 \\ -3 \end{vmatrix}$

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ب) $\begin{vmatrix} 3 & 1 & 1 \\ -2 & 3 & 1 \\ -10 & -13 & 1 \end{vmatrix} = \frac{1}{3} (9 - 10 + 22 + 30 + 2 + 39) = \frac{1}{3} 72 = 24$

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

د) $x \rightarrow -x$ $y \rightarrow -x$

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

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

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

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

الف) $x' = x-2 \Rightarrow x = x'+2$
 $y' = y+2 \Rightarrow y = y'-2$

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

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ب) $x' = x-3 \Rightarrow x = x'+3$
 $y' = y-2 \Rightarrow y = y'+2$

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

الف) $3x+4y=2$
 $x-5y=1$ $\xrightarrow{\times 5} \begin{cases} 3x+4y=2 \\ 5x-25y=5 \end{cases} \Rightarrow 19y = -1 \Rightarrow y = \left(\frac{-1}{19}\right) \Rightarrow x = \left(\frac{12}{19}\right)$

ب) $3x+4y=2$
 $x-5y=1$ $x = \frac{2-4(-1)}{-10-2} = \frac{12}{-12} = -1$ $y = \frac{3-2}{-10-2} = \left(\frac{1}{12}\right)$

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