

19,0

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۱۵ کلاس: تاریخ:

$m = \frac{y_A - y_B}{x_A - x_B} \rightarrow \frac{2 - (-2)}{2 - 2} \rightarrow \text{undefined} \rightarrow y - y_A = m(x - x_A) \rightarrow y - 2 = \text{undefined}(x - 2) \rightarrow y = \text{undefined}x + 2$ $2y + 4x = -1 \rightarrow m = -\frac{4}{2} = -2 \rightarrow y - 2 = -2(x - 2) \rightarrow y = -2x + 4$ $x + 3y = 1 \rightarrow m = -\frac{1}{3} \xrightarrow{m' = 3} m' = 3 \rightarrow y - 2 = 3(x - 2) \rightarrow y = 3x - 4$ $m = \tan \theta \xrightarrow{\frac{\pi}{4}} m = 1 \rightarrow y - 2 = 1(x - 2) \rightarrow y = x$	الف ب ج د	۱
$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \sqrt{(2 - (-1))^2 + (3 - 1)^2} = \sqrt{9 + 4} = \sqrt{13} = \sqrt{13}$ $3x + 2y - 3 = 0 \rightarrow d = \frac{ ax_A + by_A + c }{\sqrt{a^2 + b^2}}$ $\rightarrow d = \frac{ 3 \cdot 2 + 2 \cdot 3 - 3 }{\sqrt{9 + 4}} = \frac{12}{\sqrt{13}} = \frac{12\sqrt{13}}{13}$	الف ب	۲
$(2x + 3y = 4) \xrightarrow{\times 2} \begin{cases} 2x + 3y = 4 \\ 2x + 4y = 8 \end{cases} \rightarrow \begin{cases} 2x + 3y = 4 \\ 2x + 4y = 8 \end{cases} \rightarrow \begin{cases} 2x + 3y = 4 \\ 2x + 4y = 8 \end{cases} \rightarrow \begin{cases} 2x + 3y = 4 \\ 2x + 4y = 8 \end{cases} \rightarrow \begin{cases} 2x + 3y = 4 \\ 2x + 4y = 8 \end{cases}$ $d = \frac{ c - c' }{\sqrt{a^2 + b^2}} = \frac{ 4 - 8 }{\sqrt{2^2 + 4^2}} = \frac{4}{\sqrt{20}} = \frac{2}{\sqrt{5}} = \frac{2\sqrt{5}}{5}$	الف ب	۳
$d_1: 2x + 3y = 4 \rightarrow m_1 = -\frac{2}{3}$ $d_2: 3x - 2y = 1 \rightarrow m_2 = \frac{3}{2}$ $\rightarrow \tan \alpha = \left \frac{m_1 - m_2}{1 + m_1 m_2} \right = \left \frac{-\frac{2}{3} - \frac{3}{2}}{1 + (-\frac{2}{3})(\frac{3}{2})} \right = \left \frac{-\frac{17}{6}}{1 - 1} \right = \left \frac{-\frac{17}{6}}{0} \right = \text{undefined} \rightarrow \alpha = 90^\circ$ $ k_1 + j_2 = k_2 + j_1 $ $\begin{cases} 2x + 3y = 4 \\ 3x - 2y = 1 \end{cases} \rightarrow \begin{cases} 2x + 3y = 4 \\ 3x - 2y = 1 \end{cases} \rightarrow \begin{cases} 2x + 3y = 4 \\ 3x - 2y = 1 \end{cases} \rightarrow \begin{cases} 2x + 3y = 4 \\ 3x - 2y = 1 \end{cases}$ $\rightarrow d_1 = y - \frac{2}{3} = -\frac{2}{3}(x - \frac{4}{3}) \rightarrow y = -\frac{2}{3}x + \frac{8}{9}$ $\rightarrow d_2 = y - \frac{3}{2} = \frac{3}{2}(x - \frac{1}{3}) \rightarrow y = \frac{3}{2}x - \frac{3}{2}$ $\alpha + \beta = 90^\circ$	الف ب ج د	۴
$\tan \alpha = \left \frac{m - m'}{1 + mm'} \right \rightarrow \tan \alpha = \left \frac{2 - (-3)}{1 - 6} \right = 1$ $d: y = 2x + 2 \rightarrow m = 2$ $d': y = -3x + 3 \rightarrow m = -3$ $\alpha = 45^\circ$ $\beta = 135^\circ$	الف ب ج د	۵

$d = \sqrt{(x_A - x_B)^2 + (y_A - y_B)^2} = \sqrt{1^2 - (-2)^2 + (2 - (-1))^2} = \sqrt{1 + 4 + 9} = 10$ الف $m \left\{ \begin{array}{l} \frac{x_A + x_B}{2} = \frac{1 - 2}{2} = -1 \\ \frac{y_A + y_B}{2} = \frac{2 - (-1)}{2} = 1 \end{array} \right. \rightarrow m = (-1, 1)$ ب 5	6
$G \left\{ \begin{array}{l} \frac{-10 - 1 + 11}{11} = -1 \\ \frac{-11 + 11 + 1}{11} = -1 \end{array} \right. \rightarrow G = (-11, -11)$ الف 5 $\begin{bmatrix} 1 & -1 & 11 \\ -11 & 11 & 1 \\ 1 & 1 & 1 \end{bmatrix} = \begin{vmatrix} -11 & -1 & 11 & -1 & 11 & 10 \end{vmatrix} \rightarrow S = \frac{1}{11} \times 94 = 8.54$ ب	7
$y = \frac{-11x + 1}{-11x + 11} \quad \text{ب} \quad -y = \frac{11x + 1}{11x - 11} \quad \text{الف}$ $x = \frac{11y + 1}{11y - 11} \rightarrow y = \frac{11x + 1}{11x - 11} \quad \text{ب}$ $-x = \frac{-11y + 1}{-11y - 11} \rightarrow x = \frac{-11y + 1}{11y + 11} \rightarrow y = \frac{-11x + 1}{11x + 11} \quad \text{ب}$	8
$\begin{array}{l} y' = y + 1 \\ \downarrow \\ y = y' - 1 \end{array} \quad \begin{array}{l} x' = x - 1 \\ \downarrow \\ x = x' + 1 \end{array} \quad \left\{ \begin{array}{l} y' - 1 = \frac{1(x' + 1) + 1}{(x' + 1) - 1} \rightarrow y' - 1 = \frac{1x' + 2}{x' - 1} \\ \rightarrow y' = \frac{1x' + 2 + x' - 1}{x' - 1} = \frac{2x' + 1}{x' - 1} \end{array} \right.$ الف 5 $\begin{array}{l} y' = y - 1 \\ \downarrow \\ y = y' + 1 \end{array} \quad \begin{array}{l} x' = x - 1 \\ \downarrow \\ x = x' + 1 \end{array} \quad \left\{ \begin{array}{l} y' + 1 = \frac{1(x' + 1) + 1}{(x' + 1) - 1} = \frac{1x' + 2}{x' - 1} \rightarrow y' = \frac{1x' + 2 - x' + 1}{x' - 1} = \frac{3}{x' - 1} \end{array} \right.$ ب	9
$\begin{cases} 11x + 12y = 1 \\ (x - 2y = 1) \times -11 \end{cases} \quad \begin{cases} 11x + 12y = 1 \\ -11x + 22y = -11 \end{cases} \rightarrow 14y = -10 \rightarrow y = \frac{-10}{14} \text{ و } x = \frac{14}{14}$ الف $\begin{cases} 11x + 12y = 1 \\ x - 2y = 1 \end{cases} \quad \text{من } \begin{bmatrix} 11 & 12 \\ 1 & -2 \end{bmatrix} = -12 - 12 = -24$ ب 5 $\text{من } \begin{bmatrix} 12 & 11 \\ -2 & 1 \end{bmatrix} = 12 - (-10) = 22$ $\text{من } \begin{bmatrix} 11 & 12 \\ 1 & -2 \end{bmatrix} = 11 - 2 = 9 \rightarrow x = \frac{14}{9} \text{ و } y = \frac{-1}{9}$	10