

نام و نام خانوادگی شماره کلاس یازدهم دبیرستان پاسخنامه تشریحی تکلیف شماره ۵۱

$$\text{الف)} \alpha = \frac{a_1}{a_2} = \frac{-2-2}{5-4} = -4 \Rightarrow y-2 = -4(x-4) \Rightarrow \boxed{y = -4x + 18}$$

$$\text{ب)} 2y + 4x = -1 \Rightarrow y = \left(-\frac{1}{2}\right)x - \frac{1}{4} \Rightarrow \alpha = -\frac{1}{2} \Rightarrow y-2 = -\frac{1}{2}(x-4) \Rightarrow \boxed{y = -\frac{1}{2}x + 4}$$

$$\text{ج)} x + 3y = 1 \Rightarrow y = \left(-\frac{1}{3}\right)x + \frac{1}{3} \Rightarrow \alpha = -\frac{1}{3} \Rightarrow y-2 = -\frac{1}{3}(x-4) \Rightarrow \boxed{y = -\frac{1}{3}x + \frac{10}{3}}$$

$$\text{د)} \alpha = \tan \frac{\pi}{3} = \sqrt{3} \Rightarrow y-2 = \sqrt{3}(x-4) \Rightarrow \boxed{y = \sqrt{3}x - 4\sqrt{3} + 2}$$

$$\text{الف)} d = \sqrt{(7-3)^2 + (-1-2)^2} = \sqrt{16+9} = \sqrt{25} = \boxed{5}$$

$$\text{ب)} d = \frac{|\sqrt{3}x^2 + 4x + 3 - 3|}{\sqrt{3^2 + 4^2}} = \frac{|1|}{\sqrt{25}} = \frac{1}{5} = \boxed{\frac{1}{5}}$$

$$4x + 6y = 8 \xrightarrow{\div 2} 2x + 3y = 4$$

$$\text{الف)} ax + by = \frac{c+c'}{r} \Rightarrow 2x + 3y = \frac{4+6}{r} \Rightarrow 2x + 3y = 5 \Rightarrow \boxed{y = -\frac{2}{3}x + \frac{5}{3}}$$

$$\text{ب)} d = \frac{|c'-c|}{\sqrt{a^2+b^2}} = \frac{|6-4|}{\sqrt{2^2+3^2}} = \frac{2}{\sqrt{13}} = \boxed{\frac{2\sqrt{13}}{13}}$$

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

$$\text{① } 3x-2y-1 = 2x+3y-3$$

$$x-5y+2=0$$

$$\boxed{y = \frac{x}{5} + \frac{2}{5}}$$

$$\text{② } 3x-2y-1 = -(2x+3y-3)$$

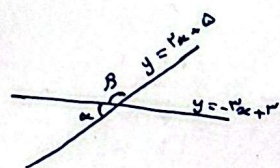
$$5x+y-4=0$$

$$\boxed{y = -5x + 4}$$

$$y = -3x + 3, y = 2x + 5 \quad \text{خطها:}$$

$$\tan \alpha = \left| \frac{m-m'}{1+mm'} \right| = \left| \frac{2-(-3)}{1-6} \right| = \left| \frac{5}{-5} \right| = |-1| = 1 \Rightarrow \alpha = 45^\circ$$

$$\beta = 180^\circ - \alpha = 135^\circ$$



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الف) $d = \sqrt{(4-(-2))^2 + (-5-3)^2} = \sqrt{6^2 + 8^2} = \boxed{10}$

ب) $x_A = \frac{x_1 + x_2}{2} = \frac{-5 + 3}{2} = -1$

$y_A = \frac{y_1 + y_2}{2} = \frac{4 - 2}{2} = 1$

$\Rightarrow A: \begin{bmatrix} -1 \\ 1 \end{bmatrix}$

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الف) $x_A = \frac{x_1 + x_2 + x_3}{3} = \frac{-10 - 2 + 3}{3} = -3$

$y_A = \frac{y_1 + y_2 + y_3}{3} = \frac{-13 + 3 + 1}{3} = -3$

$\Rightarrow A: \begin{bmatrix} -3 \\ -3 \end{bmatrix}$

ب) $S_0 = \frac{1}{2} \begin{vmatrix} -10 & -13 & 1 \\ -2 & 3 & 1 \\ 3 & 1 & 1 \end{vmatrix} = \frac{|4 - 10 + 26 + 30 + 2 + 39|}{2} = \frac{44}{2} = \boxed{22}$

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

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

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

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

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الف) $x' = x-2 \Rightarrow y+3 = \frac{2(x-2)+1}{x-2-3} = \frac{2x-3}{x-5} \Rightarrow y = \frac{2x-3-3x+15}{x-5} = \frac{-x+12}{x-5}$

ب) $x' = x-3 \Rightarrow y-2 = \frac{2(x-3)+1}{x-3-3} = \frac{2x-5}{x-6}$

$\Rightarrow y = \frac{2x-5+2x-12}{x-6} = \frac{4x-17}{x-6}$

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الف) $\begin{cases} 3x+4y=2 \\ (x-5y=1) \times (-3) \end{cases} \Rightarrow \begin{cases} 3x+4y=2 \\ -3x+15y=-3 \end{cases} \Rightarrow y = \frac{-1}{19} \Rightarrow x = \frac{-2}{19} + 1 = \frac{17}{19}$

ب) $x = -\frac{\begin{vmatrix} 4 & 2 \\ 15 & 1 \end{vmatrix}}{\begin{vmatrix} 3 & 4 \\ 1 & -5 \end{vmatrix}} = -\frac{4-30}{-15-4} = \frac{17}{19}$

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$y = \frac{\begin{vmatrix} 3 & 2 \\ 1 & 1 \end{vmatrix}}{\begin{vmatrix} 3 & 4 \\ 1 & -5 \end{vmatrix}} = \frac{3-2}{-15-4} = \frac{-1}{19}$