

الف) $y = ax + b \rightarrow a = \frac{y_2 - y_1}{x_2 - x_1} = \frac{2 - (-2)}{4 - 5} = -4 \rightarrow y = -4x + b \xrightarrow{1} 2 = -14 + b \rightarrow y = -4x + 16$ ✓	۱	(۲)
ب) $2y + 4x = -1 \rightarrow \text{شیب} = -\frac{1}{2} \rightarrow y = -\frac{1}{2}x + b \xrightarrow{1} 2 = -\frac{1}{2} + b \rightarrow b = \frac{5}{2} \rightarrow y = -\frac{1}{2}x + \frac{5}{2}$ ✓		
ج) $x + 3y = 1 \rightarrow \text{شیب} = -\frac{1}{3} \rightarrow y = -\frac{1}{3}x + b \xrightarrow{1} 2 = -\frac{1}{3} + b \rightarrow y = -\frac{1}{3}x + \frac{7}{3}$ ✓		
د) $\tan \frac{\pi}{4} = a = 1 \rightarrow y = x + b \xrightarrow{1} 2 = 1 + b \rightarrow y = x + 1$ ✓		

الف) $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \sqrt{(2 - (-1))^2 + (3 - 1)^2} = \sqrt{10} = \sqrt{2} \times \sqrt{5} = \sqrt{2} \times \sqrt{5}$ ✓	۲	(۲)
ب) $d = \frac{ 3x_0 + 4y_0 - 1 }{\sqrt{3^2 + 4^2}} = \frac{ 3(2) + 4(3) - 1 }{\sqrt{25}} = \frac{16}{5} = \frac{16}{5}$ ✓		

الف) $ax + by = \frac{c + c'}{2} \rightarrow 2x + 3y = \frac{4 + 4}{2} = 4 \rightarrow 2x + 3y = 4$ ✓	۳	(۲)
ب) $d = \frac{ c' - c }{\sqrt{a^2 + b^2}} = \frac{ 4 - 4 }{\sqrt{2^2 + 3^2}} = \frac{0}{\sqrt{13}} = 0$ ✓		

$\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 $	۴	(۲)
$\begin{cases} 3x - 2y - 1 = 2x + 3y - 3 \rightarrow x - 5y = -2 \\ 3x - 2y - 1 = -(2x + 3y - 3) \rightarrow 5x + y = 4 \end{cases}$ ✓		

$y + 3x = 3 \rightarrow \text{شیب} = -\frac{1}{3} \quad \{ \quad y - 2x = 5 \rightarrow \text{شیب} = \frac{1}{2}$	۵	(۱, ۷۵)
$\tan \alpha = \left \frac{m - m'}{1 + mm'} \right = \frac{5}{-5} = -1 \rightarrow \alpha = 45^\circ$ همیشه زاویه حاده به نقطه است!		

$$\text{الف) } d = \sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2} = \sqrt{(4 - (-2))^2 + (-5 - 3)^2} = \sqrt{100} = 10 \quad \checkmark$$

$$\text{ب) } A \begin{vmatrix} \frac{x_2 + x_1}{2} \\ \frac{y_2 + y_1}{2} \end{vmatrix} \rightarrow A \begin{vmatrix} -1 \\ 1 \end{vmatrix} \quad \checkmark$$

$$\text{الف) } m \begin{vmatrix} \frac{x_1 + x_2 + x_3}{3} \\ \frac{y_1 + y_2 + y_3}{3} \end{vmatrix} \rightarrow m \begin{vmatrix} -3 \\ -3 \end{vmatrix} \quad \checkmark$$

$$\text{ب) } \begin{vmatrix} -10 & -13 & 1 \\ -2 & 3 & 1 \\ 3 & 1 & 1 \end{vmatrix} = -30 - 2 - 39 - 9 + 10 - 24 = -94 \rightarrow S = \frac{94}{2} = 47 \quad \checkmark$$

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

$$\text{ب) } y = \frac{-2x+1}{-2x-3} \quad \checkmark$$

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

$$\text{د) } -x = \frac{-2y+1}{-2y-3} \rightarrow y = \frac{1-2x}{2x+3} \quad \checkmark$$

$$\text{الف) } x' = x - 2 \rightarrow x = x' + 2 \quad \{ \quad y' = y + 3 \rightarrow y = y' - 3$$

$$\rightarrow y' - 3 = \frac{2x' + 5}{x' - 1} \rightarrow y' = \frac{5x' + 2}{x' - 1} \quad \checkmark$$

$$\text{ب) } x' = x - 3 \rightarrow x = x' + 3 \quad \{ \quad y' = y - 2 \rightarrow y = y' + 2$$

$$y' + 2 = \frac{2x' + 5}{x'} \rightarrow y' = \frac{5}{x'} \quad \checkmark$$

$$\text{الف) } \begin{cases} 3x + 4y = 2 \\ 3x - 10y = 3 \end{cases} \quad 3x - 10y - 3x + 4y = 1 \rightarrow x = \frac{1}{19} \quad y = -\frac{1}{19} \quad \checkmark$$

$$\text{ب) } \begin{cases} 3x + 4y = 2 \\ x - 5y = 1 \end{cases} \quad x = -\frac{1}{19} \quad , \quad y = \frac{1}{19}$$

راد حل؟!