

الف) $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{2}{-1} = -2$, $ax + by = c \Rightarrow -2(2) + b = 2 \Rightarrow b = 6$ پس $y = -2x + 6$

ب) خط موازی (ب) $\Rightarrow 4x + 1 = -2y \Rightarrow -2x - \frac{1}{2} = y$ و $m = -2$ $\Rightarrow 2(-2) + b = 2 \Rightarrow b = 6$ $y = -2x + 6$

ج) $-1 =$ ضریب هارم $\Rightarrow y = -x + 1 \Rightarrow y = -\frac{1}{2}x + \frac{1}{2} \Rightarrow m = -\frac{1}{2} \Rightarrow y = \frac{1}{2}x - 10$

د) $\tan \frac{\pi}{3} = \sqrt{3} = m \Rightarrow 2(\sqrt{3}) + b = 2 \Rightarrow b = 2 - 2\sqrt{3}$ $y = \sqrt{3}x + 2 - 2\sqrt{3}$

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

ب) $d = \frac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}}$ $y = -\frac{3}{2}x + \frac{3}{2}$ $3x + 2y - 3 = 0$ $\frac{|3(2) + 2(2) - 3|}{\sqrt{9 + 4}} = \frac{5}{\sqrt{13}} = \frac{5\sqrt{13}}{13}$

الف) $ax + by = \frac{c + c'}{2} \Rightarrow \begin{cases} 2x + 4y = 12 \\ 2x + 4y = 8 \end{cases}$

ب) $d = \frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{|12 - 8|}{\sqrt{4 + 16}} = \frac{4}{\sqrt{20}} = \frac{2\sqrt{10}}{10}$

$\frac{|ax + by - c|}{\sqrt{a^2 + b^2}} = \frac{|a'x + b'y - c'|}{\sqrt{a'^2 + b'^2}} \Rightarrow \frac{|3x - 2y - 1|}{\sqrt{9 + 4}} = \frac{|2x + 3y - 3|}{\sqrt{4 + 9}} \Rightarrow |3x - 2y - 1| = |2x + 3y - 3|$

$\Rightarrow \begin{cases} 3x - 2y - 1 = 2x + 3y - 3 \Rightarrow x - 5y = -2 \\ 3x - 2y - 1 = -(2x + 3y - 3) \Rightarrow 5x + y = 4 \end{cases}$

$\begin{cases} y = -\frac{3}{5}x + \frac{4}{5} \\ y' = \frac{3}{5}x + \frac{4}{5} \end{cases}$ $\tan \alpha = \left| \frac{m - m'}{1 + mm'} \right| = \left| \frac{2 - (-3)}{1 - 6} \right| = 1 = \tan 45^\circ$ $\begin{cases} \alpha = 45^\circ \\ \beta = 135^\circ \end{cases}$

الف) $\sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2} \Rightarrow \sqrt{(1)^2 + (-4)^2} = \boxed{10}$

$$c) \left| \frac{\frac{x+x'}{r}}{\frac{y+y'}{r}} \right| = \left| \frac{-\frac{r}{r}}{\frac{r}{r}} \right| = \boxed{1}$$



$$x_G = \frac{x_A + x_B + x_C}{3} = \frac{-9}{3} = -3$$

$$y_G = \frac{y_A + y_B + y_C}{3} = \frac{-9}{3} = -3$$

$\Rightarrow BC \Rightarrow \begin{cases} 12 - 2x \\ 1 - 10x \\ 1 - 12x \end{cases} \Rightarrow y = 2x + 12$
 $2x - y + 12 = 0$
 $4 \times 12 = \boxed{48} \leftarrow \left(\frac{12 \times 50}{\omega} \right) = h A$
 $\Rightarrow BC \Rightarrow \begin{cases} 12 - 2x \\ 1 - 10x \\ 1 - 12x \end{cases} \Rightarrow y = 2x + 12$
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$$-y = \frac{2x+1}{x-3} \Rightarrow y = \frac{-2x-1}{x-3}$$

$$y = \frac{-2n-1}{2-\varepsilon n}$$

$$C)_n = \frac{p_{y+1}}{E_y - p} \Rightarrow y = \frac{1 + p_n}{E_n - p}$$

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

$$(الف) \quad \begin{cases} x' = x - \alpha \\ y' = y - \beta \end{cases} \Rightarrow \begin{cases} x' + \alpha = x \\ y' - \beta = y \end{cases} \Rightarrow \begin{cases} \frac{r(x' + \alpha) + 1}{(x' + \alpha) - \alpha} = y' - \beta \Rightarrow \frac{\alpha x' + r + 1}{x' - 1} = y' \end{cases}$$

$$\textcircled{c}) \quad \left| \begin{array}{l} x' = x - r \\ y' = y - r \end{array} \right\} \begin{array}{l} x = x' + r \\ y = y' + r \end{array} \left\{ \begin{array}{l} \frac{r(x' + r) + 1}{(x' + r) - r} = y' + r \\ \frac{r x' + \varepsilon - r x'}{x'} = y' \end{array} \right. \Rightarrow \frac{\varepsilon}{x'} = y'$$

$$\text{مثال 1)} \quad \begin{cases} 3x + 5y = 7 \\ -3x + 10y = -3 \end{cases} \quad \begin{cases} 10y = -1 \Rightarrow y = -\frac{1}{10} \\ 3x - \frac{5}{10} = 7 \Rightarrow x = \frac{81}{10} \end{cases}$$

$$b) \quad x = - \frac{\begin{vmatrix} \epsilon & 2 \\ -\omega & 1 \end{vmatrix}}{\begin{vmatrix} 2 & \epsilon \\ 1 & -\omega \end{vmatrix}} = \frac{-\epsilon + 10}{-\omega - \epsilon} = \boxed{\frac{1\epsilon}{19}} \quad y = \frac{\begin{vmatrix} 2 & 2 \\ 1 & 1 \end{vmatrix}}{\begin{vmatrix} 2 & \epsilon \\ 1 & -\omega \end{vmatrix}} = \frac{2-2}{-\omega - \epsilon} = \boxed{\frac{-1}{19}}$$