

۱- الف

$$y - 2 = -4(x - 4) \quad \frac{4}{-1} = -4 = m \quad m = \frac{y_2 - y_1}{x_2 - x_1}$$

پ) وقتی دو خط فقط عرض از مبدأ آنها متناوب است
است پس جایگزینی می کنیم و عرض از مبدأ را به دست می آوریم

$$2(2) + 4(4) = c \rightarrow c = 24 \rightarrow 2y + 4x - 24 = 0 \Rightarrow y = -2x + 12$$

ج) عمود یعنی شیب متضاد ~~مکمل~~

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

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

د) دوباره شیب می شد $\tan \alpha \leftarrow \tan \alpha = \sqrt{3} \leftarrow \tan \frac{\pi}{3} = \sqrt{3}$

$$y - 2 = \sqrt{3}(x - 4) \rightarrow y = \sqrt{3}x - 4\sqrt{3} + 2$$

۲- ب

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \quad \sqrt{(2 - (-1))^2 + (3 - 4)^2} \quad \sqrt{9 + 4} = 5$$

$$\frac{|ax_1 + by_1 + c|}{\sqrt{a^2 + b^2}} \rightarrow \frac{|4 + 12 - 3|}{\sqrt{9 + 16}} = 2$$

$$3x + 4y - 3 = 0$$

الف) خطیب برابر کنیم $ax + by = \frac{c + c'}{2}$

$$\begin{cases} 4x + 6y = 12 \\ 4x + 6y = 10 \end{cases} \rightarrow \begin{cases} 4x + 6y = 12 \\ 4x + 6y = 10 \end{cases} \rightarrow 4x + 6y - 10 = 0$$

$$\frac{|c - c'|}{\sqrt{a^2 + b^2}} \rightarrow \frac{2}{\sqrt{16 + 9}} \rightarrow \frac{2}{5} \rightarrow \frac{2\sqrt{14}}{14}$$

$$\frac{|3x - 2y + 1|}{\sqrt{13}} = \frac{|2x + 3y + 1|}{\sqrt{13}} \rightarrow \begin{cases} 3x - 2y + 1 = 2x + 3y + 1 \\ 3x - 2y + 1 = -2x - 3y + 1 \end{cases}$$

$$\rightarrow x - 5y = 0 \rightarrow 5x + y = 5$$

$$\tan \alpha = \left| \frac{m-m'}{1+mm'} \right| = \left| \frac{2-(-3)}{1+2(-3)} \right| = 1 \rightarrow \alpha = \frac{\pi}{4} \quad (2)$$

$$y = 2x + 3$$

$$y = -2x + 3$$

$$\sqrt{(x_A - x_B)^2 + (y_A - y_B)^2} = \sqrt{(2 - (-2))^2 + (-1 - 1)^2} = \sqrt{4 + 4} = \sqrt{8} = 2\sqrt{2} \quad (2)$$

$$\frac{x_A + x_B}{2} = x' \quad \frac{y_A + y_B}{2} = y' \quad \frac{2 + (-2)}{2} = -1 = x$$

$$\frac{-1 + 1}{2} = 0 = y$$

$$y = \frac{y_A + y_B + y_C}{3} \quad \frac{x_A + x_B + x_C}{3} = x$$

$$\Rightarrow \frac{-1 + 0 + 1}{3} = 0 = x \quad \frac{-1 + 1 + 1}{3} = \frac{1}{3} = y$$

$$\Rightarrow \frac{1}{3} \times 9 = 3$$

$$y = \frac{2x+1}{4x-3} \quad y = \frac{2x+1}{4x-3}$$

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

$$y = \frac{3x+1}{4x-2} \quad x = \frac{4y+1}{4y-2}$$

$$y = \frac{-3x+1}{4x+2} \quad -x = \frac{-2y+1}{-4y-2}$$

$$\begin{cases} x' = x - 1 \rightarrow x = x' + 1 \\ y' = y + 3 \rightarrow y = y' - 3 \end{cases} \rightarrow y' - 3 = \frac{r(x' + 1) + 1}{x' + 1 - 3}$$

9. (2) (ب)

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

$$\begin{cases} x' = x - 3 \rightarrow x = x' + 3 \\ y' = y - 2 \rightarrow y = y' + 2 \end{cases} \rightarrow y' + 2 = \frac{r(x' + 3) + 1}{x' + 3 - 2}$$

(ب)

$$\rightarrow y' = \frac{V}{x' - 1} \quad \checkmark$$

$$\begin{cases} 2x + 4y = 2 \\ x - 5y = 1 \end{cases} \rightarrow x = 1 + 5y$$

10. (2) (ب)

محل

$$x + \frac{3}{5} = 1$$

$$x = \frac{2}{5} \quad \checkmark$$

$$A \begin{vmatrix} \frac{2}{5} \\ \frac{1}{19} \\ -\frac{1}{19} \end{vmatrix}$$

$$-3x + 15y = -3 \rightarrow 19y = -1 \rightarrow y = -\frac{1}{19} \quad \checkmark$$

$$x = - \frac{\begin{bmatrix} 2 & 1 \\ 1 & -5 \end{bmatrix}}{\begin{bmatrix} 2 & 4 \\ 1 & -5 \end{bmatrix}} \quad \checkmark$$

$$= \frac{-14}{-19}$$

$$\rightarrow \frac{14}{19} = x \quad \checkmark$$

$$y = \frac{\begin{bmatrix} 2 & 1 \\ 1 & -5 \end{bmatrix}}{\begin{bmatrix} 2 & 4 \\ 1 & -5 \end{bmatrix}} \quad \checkmark$$

$$= \frac{3-2}{-15-4}$$

$$\rightarrow -\frac{1}{19} = y \quad \checkmark$$

دترمینان اینجده $\begin{vmatrix} a & b \\ c & d \end{vmatrix} \sim []$: