

الف) $| \frac{5}{2} | \frac{1}{2} \Rightarrow m = -\frac{1}{2} \Rightarrow y - 2 = -\frac{1}{2}(x - 4) \Rightarrow y = -\frac{1}{2}x + 1$

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

ج) $x + 2y = 1 \Rightarrow y = \frac{1}{2} - \frac{x}{2} \Rightarrow m = -\frac{1}{2} \xrightarrow{\text{عکس}} m' = \frac{1}{2} \Rightarrow y - 2 = \frac{1}{2}(x - 4) \Rightarrow y = \frac{1}{2}x + 1$

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

الف) $| \frac{1}{2} | \frac{1}{2} \Rightarrow \sqrt{(2-4)^2 + (1-2)^2} \Rightarrow \sqrt{(-2)^2 + (-1)^2} \Rightarrow \sqrt{4+1} = \sqrt{5}$

ب) $2x + 4y - 6 = 0 \xrightarrow{| \frac{1}{2} |} \frac{|ax + by + c|}{\sqrt{a^2 + b^2}} \Rightarrow \frac{|2 + 12 - 3|}{\sqrt{2^2 + 4^2}} \Rightarrow \frac{11}{\sqrt{20}} \Rightarrow \frac{11\sqrt{5}}{10}$

الف) $2x + 4y - 1 = 0 \Rightarrow 2x + 4y = 1$
 $2x + 4y - 12 = 0 \Rightarrow 2x + 4y = 12$
 $\frac{C+C'}{2} \Rightarrow \frac{-1-12}{2} = -\frac{13}{2} = -6.5$

مضامین
 خط وسط $\Rightarrow 2x + 4y - 6.5 = 0 \Rightarrow y = -\frac{1}{2}x + 1.3$
 این خط

ب) $\frac{|C-C'|}{\sqrt{a^2 + b^2}} \Rightarrow \frac{|-1+12|}{\sqrt{2^2 + 4^2}} \Rightarrow \frac{11}{\sqrt{20}} \Rightarrow \frac{11\sqrt{5}}{10}$

$\frac{|2x - 2y - 1|}{\sqrt{1^2 + (-1)^2}} = \frac{|2x + 2y - 3|}{\sqrt{1^2 + 1^2}} \Rightarrow 2x - 2y - 1 = 2x + 2y - 3 \Rightarrow 4y = 2 \Rightarrow y = \frac{1}{2}$

$y = \frac{x+3}{2} \quad (1)$

$2x - 2y - 1 = -2x - 2y + 3 \Rightarrow 4x = 4 \Rightarrow x = 1$

$2x - 2y - 1 = -2x - 2y + 3 \Rightarrow y = -x + 2 \quad (2)$

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

$y + 2x = 3 \Rightarrow y = -2x + 3$
 $y - 2x = 5 \Rightarrow y = 2x + 5$
 $\tan \theta = \frac{m - m'}{1 + mm'} \Rightarrow \left| \frac{-2 - 2}{1 + (-4)} \right| \Rightarrow \left| \frac{-4}{-3} \right| \Rightarrow \frac{4}{3}$

$\left| \frac{-5}{-3} \right| \Rightarrow (1) \Rightarrow \tan \theta = 1$

★ زاویه بین دو خط ۴۵ درجه است.

$$\text{الف) } \begin{vmatrix} -5 & 3 \\ 2 & -2 \end{vmatrix} \Rightarrow \sqrt{(4)^2 + (-8)^2} \Rightarrow \sqrt{16 + 64} = \sqrt{80} = 10$$

ب) $\Rightarrow \begin{vmatrix} \frac{a+b}{r} \\ \frac{c+d}{r} \end{vmatrix} \Rightarrow \begin{vmatrix} \frac{-d+r}{r} \\ \frac{r-r}{r} \end{vmatrix} \Rightarrow \begin{vmatrix} -1 \\ 1 \end{vmatrix} \Rightarrow (-1, 1)$

$$\begin{aligned} \text{الف) } \begin{vmatrix} -1 & 0 & 1 \\ 1 & -2 & 3 \\ 1 & 1 & 1 \end{vmatrix} & \xrightarrow{\text{مربعات}} \frac{a+b+c}{2} \Rightarrow \frac{-1-2+3}{2} = \frac{-9}{2} \rightarrow \text{xy} \rightarrow (-3) \\ \frac{-1+3+1}{2} = \frac{-9}{2} & \Rightarrow (-3) \rightarrow \text{محطات} \Rightarrow \left(-\frac{9}{2}, -\frac{9}{2} \right) \Rightarrow \boxed{(-3, -3)} \end{aligned}$$

$$b) \frac{1}{x} \begin{vmatrix} -10 & -2 & 2 \\ -12 & 2 & 1 \\ 1 & 1 & 1 \end{vmatrix} \Rightarrow \frac{1}{x} (9 + 22 - 10 - (-20 - 22 - 2)) = \frac{1}{x} (42 + 22) = 64 \times \frac{1}{x} = 64 \neq 52$$

الف) $y = \frac{x+1}{x-2} \Rightarrow y = -\left(\frac{x+1}{x-2}\right) \Rightarrow y = \frac{x+1}{2-x}$

باید از اترین کنیم $\rightarrow y = \frac{-2x+1}{-4x-3}$ $\xrightarrow{\text{ترتیب نسبت به x}} (ب)$

ج) $\frac{y}{x} = \frac{y+1}{x-2} \Rightarrow y+1 = \frac{y}{x} (x-2) \Rightarrow y+1 = y - \frac{2y}{x} \Rightarrow \frac{2y}{x} = -1 \Rightarrow y = -\frac{x}{2}$

د) $\frac{-y+1}{-4y-3} \Rightarrow y(5x+2) = -5x+1 \Rightarrow y = \frac{-5x+1}{5x+2}$

$$\left. \begin{aligned} x' &= x+2 \\ y' &= y-2 \end{aligned} \right\} \xrightarrow{\text{بجایگزینی}} y-2 = \frac{2(x+2)+1}{x+2-2} \Rightarrow y = \frac{2x+5}{x-1}$$

ب) $\begin{cases} x' = x + 2 \\ y' = y + 2 \end{cases} \xrightarrow{\text{ماتریس}} y + 2 = \frac{2(x+2)+1}{x+2-2} \Rightarrow \boxed{y = \frac{4}{x}}$

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

ب) $\begin{cases} 4x + 3y = 7 \\ x - 2y = 1 \end{cases} \rightarrow x = -\frac{7+10}{-12-1} \Rightarrow \frac{17}{13} \rightarrow \frac{\begin{vmatrix} 7 & 3 \\ 1 & -2 \end{vmatrix}}{\begin{vmatrix} 4 & 3 \\ 1 & -2 \end{vmatrix}}$
 $y = \frac{7-x}{-12-1} \Rightarrow -\frac{1}{13} \rightarrow \frac{\begin{vmatrix} 7 & 4 \\ 1 & -1 \end{vmatrix}}{\begin{vmatrix} 4 & 3 \\ 1 & -2 \end{vmatrix}}$