

الف) $|x-4| = 2 \Rightarrow m = -4 \Rightarrow y-2 = -4(x-4) \Rightarrow y = -4x+18$

ب) $2y+3x = -1 \Rightarrow y = -\frac{3}{2}x - \frac{1}{2} \Rightarrow m = -\frac{3}{2} \Rightarrow y-2 = -\frac{3}{2}(x-4) \Rightarrow y = -\frac{3}{2}x+10$

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) $|x-1| = \sqrt{(2-1)^2 + (2-1)^2} \Rightarrow \sqrt{(3)^2 + (-4)^2} \Rightarrow \sqrt{25} = 5$

ب) $2x+3y-5=0 \xrightarrow{|x|} \frac{|ax+by+c|}{\sqrt{a^2+b^2}} \Rightarrow \frac{|4+12-5|}{\sqrt{25}} \Rightarrow \frac{11}{5}$

الف) $2x+3y-1=0 \Rightarrow 2x+3y-12=0$
 $2x+3y-5=0 \Rightarrow 2x+3y-6=0$
 $\frac{C+C'}{r} \Rightarrow \frac{-1-12}{2} = -\frac{13}{2} = -6.5$

ب) $\frac{|C-C'|}{\sqrt{a^2+b^2}} \Rightarrow \frac{|-1+12|}{\sqrt{4+9}} \Rightarrow \frac{11}{\sqrt{13}} \Rightarrow \frac{11\sqrt{13}}{13}$

$\frac{|2x-3y-1|}{\sqrt{13}} = \frac{|2x+3y-3|}{\sqrt{13}} \Rightarrow 2x-3y-1 = 2x+3y-3 \Rightarrow 6y = x+2 \Rightarrow y = \frac{x+2}{6}$ ①

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

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

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

$\left| \frac{-5}{-2} \right| \Rightarrow ① \Rightarrow \tan \theta = 1$

الف) $\begin{vmatrix} -5 & 3 \\ 2 & -2 \end{vmatrix} \Rightarrow \sqrt{(2)^2 + (-8)^2} \Rightarrow \sqrt{4 + 64} = \sqrt{68} = \sqrt{100} = 10$

ب) $\Rightarrow \begin{vmatrix} \frac{a+b}{c+d} \\ \frac{c+d}{c+d} \end{vmatrix} \rightarrow \begin{vmatrix} \frac{-5+3}{2-2} \\ 1 \end{vmatrix} \Rightarrow \begin{vmatrix} -1 \\ 1 \end{vmatrix} \Rightarrow (-1, 1)$

الف) $\begin{vmatrix} -10 & -2 & 3 \\ -1 & 2 & 1 \\ -1 & 2 & 1 \end{vmatrix}$ میزش $\frac{a+b+c}{c} \Rightarrow \frac{-10-2+3}{2} = \frac{-9}{2} \Rightarrow x = -\frac{9}{2}$
 $\frac{-10+2+1}{2} = -\frac{7}{2} \Rightarrow (-\frac{9}{2}, -\frac{7}{2}) \Rightarrow (-4.5, -3.5)$

ب) $\frac{1}{2} \times \begin{vmatrix} -10 & -2 & 3 \\ -1 & 2 & 1 \\ 1 & 1 & 1 \end{vmatrix} \Rightarrow \frac{1}{2} (9 + 10 - 10 - (-50 - 10 - 2)) = \frac{1}{2} (25 + 71) = 48$
 $48 \times \frac{1}{2} = 24$

الف) $\Rightarrow$ باید از رتبه نهم $\rightarrow -y = \frac{2x+1}{5x-2} \Rightarrow y = -\frac{2x+1}{5x-2}$
 ب) $\Rightarrow$ باید از رتبه نهم $\rightarrow y = \frac{-2x+1}{-5x-2}$
 ج) $\Rightarrow$ باید خارج از رتبه نهم $\rightarrow x = \frac{2y+1}{5y-2} \Rightarrow 2y+1 = 5xy-2x \Rightarrow y(2-5x) = -2x-1 \Rightarrow y = \frac{-2x-1}{2-5x}$
 د) $\Rightarrow$ باید خارج از رتبه نهم $\rightarrow -x = \frac{-2y+1}{-5y-2} \Rightarrow y(5x+2) = -2x+1 \Rightarrow y = \frac{-2x+1}{5x+2}$

الف) $\begin{cases} x' = x+2 \\ y' = y-2 \end{cases} \xrightarrow{\text{جابجایی}} y-2 = \frac{2(x+2)+1}{x+2-2} \Rightarrow y = \frac{2x+5}{x-1}$

ب) $\begin{cases} x' = x+3 \\ y' = y+2 \end{cases} \xrightarrow{\text{جابجایی}} y+2 = \frac{2(x+3)+1}{x+3-2} \Rightarrow y = \frac{2x+5}{x+1}$

الف) $\begin{cases} 4x+5y=2 \\ x-5y=1 \end{cases} \Rightarrow \begin{cases} 4x+5y=2 \\ 4x-25y=4 \end{cases} \Rightarrow \begin{cases} x-5y=1 \\ x+\frac{5}{19}=1 \end{cases} \Rightarrow \begin{cases} y = -\frac{1}{19} \\ x = \frac{14}{19} \end{cases}$

ب) $\begin{cases} 4x+5y=2 \\ x-5y=1 \end{cases} \rightarrow x = -\frac{4+10}{-10-4} \Rightarrow \frac{14}{19} \rightarrow \begin{vmatrix} 4 & 2 \\ 1 & -5 \end{vmatrix} \rightarrow \begin{vmatrix} 4 & 2 \\ 1 & -5 \end{vmatrix} \rightarrow \begin{vmatrix} 4 & 2 \\ 1 & -5 \end{vmatrix}$
 $y = \frac{2-14}{-10-4} \Rightarrow -\frac{1}{19} \rightarrow \begin{vmatrix} 4 & 2 \\ 1 & -5 \end{vmatrix} \rightarrow \begin{vmatrix} 4 & 2 \\ 1 & -5 \end{vmatrix}$