

الف) $y = -4x + 11$

ب) $y = -3x + 14$

ج) $y = 3x - 10$

د) $y = \sqrt{3}x - 4\sqrt{3} + 2$

الف) $\sqrt{(2+1)^2} + (7-3)^2 = 5$

ب) $\frac{|\sqrt{2 \times 3} + \sqrt{3 \times 4} - 3|}{\sqrt{3^2 + 4^2}} = \frac{15}{5} = 3$

الف) $2x + 3y = 4$ و $2x + 3y = 9 \rightarrow 2x + 3y = \frac{-4-9}{-1} \rightarrow 2x + 3y + 5 = 0$

$y = -\frac{2}{3}x - \frac{5}{3}$

ب) $2x + 3y = 4$ و $2x + 3y = 9 \rightarrow \frac{|-4+9|}{\sqrt{2^2+3^2}} = \frac{5}{\sqrt{13}} = \frac{5\sqrt{13}}{13}$

$\frac{|2x+3y-3|}{\sqrt{2^2+3^2}} = \frac{|3x-2y-1|}{\sqrt{2^2+3^2}} \rightarrow 2x+3y-3=3x-2y-1$

$y = \frac{1}{5}x + \frac{2}{5}$

$2x+3y-3=2y-3x+1$

$y = -5x + 4$

$\tan \alpha = \left| \frac{m-m'}{1+mm'} \right| \rightarrow \left| \frac{-3-2}{-5} \right| = 1 \rightarrow \alpha = 45^\circ$

زاویری هادهی بین آن‌ها

$\beta = 135^\circ$

زاویری تنفرهی بین آن‌ها

الف) $\sqrt{(3+5)^2 + (-2-4)^2} = \boxed{10}$

ب) $\begin{bmatrix} 1 & -1 \\ 1 & 1 \end{bmatrix} \rightarrow \frac{-5+3}{2} = x \text{ و } \frac{3-2}{2} = y$

الف) $x = \frac{-10 - 2 + 3}{2} = -\frac{9}{2}$ $y = \frac{-13 + 3 + 1}{2} = -\frac{9}{2}$

ب) $\begin{array}{r} 29 \quad -10 \quad -13 \quad + \quad -30 \\ +9 \quad -2 \quad 3 \quad + \quad -2 \\ + \quad -10 \quad 3 \quad + \quad -39 \\ \hline 28 \quad -10 \quad -13 \quad - \quad -61 \end{array} \rightarrow S_{\text{مجموع}} = \frac{28+61}{2} = \boxed{44.5}$

الف) $-y = \frac{2x+1}{5x-3} \rightarrow y = \frac{2x+1}{3-5x}$

ب) $y = \frac{-2x+1}{-5x-3}$

ج) $x = \frac{2y+1}{5y-3} \rightarrow y = \frac{2x+1}{5x-3}$

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

الف) $\begin{cases} x' = x-2 \\ y' = y+3 \end{cases} \rightarrow \begin{cases} x = x'+2 \\ y = y'-3 \end{cases} \rightarrow \frac{2x'+5}{x'-1} = y'-3$

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

ب) $\begin{cases} x' = x-3 \\ y' = y-2 \end{cases} \rightarrow \begin{cases} x = x'+3 \\ y = y'+2 \end{cases} \rightarrow \frac{2x'+4}{x'} = y'+2$

$y' = \frac{2}{x'}$

الف) $\begin{cases} 3x + 4y = 2 \\ 3x - 12y = 3 \end{cases}$

$19y = -1 \rightarrow y = \frac{-1}{19} \quad x = \frac{14}{19}$

ب) $\begin{cases} 3x + 4y = 2 \\ x - 2y = 1 \end{cases} \rightarrow (3x-6) - (1x-2) = -19$

$x = \frac{-(4+10)}{19} = \frac{-14}{19} \quad y = \frac{(3-2)}{-19} = \frac{-1}{19}$