

الف) $m = \frac{2+2}{4-5} = -4 \rightarrow y = -4x + b \xrightarrow{|r|} 2 = -14 + b \rightarrow b = 16$ (1)

$$y = -4x + 16$$

ب) $b = 14 \Rightarrow y = -3x + 14$ (2)

ج) $y = \frac{1}{3} - \frac{x}{3} \Rightarrow m = -\frac{1}{3} \Rightarrow m' = 3 \rightarrow y = 3x - 10$

د) $\frac{\pi}{4} = 45^\circ \rightarrow \tan 45^\circ = \sqrt{3} \rightarrow y = \sqrt{3}x + 2 - 4\sqrt{3}$

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

ب) $4y + 3x - 3 = 0 \rightarrow d = \frac{|4+12-3|}{\sqrt{14+9}} = \frac{13}{5} = \frac{13}{5}$ (4)

$2x + 3y = 4$ $2x + 3y = 4$

الف) $m = -\frac{2}{3}$ $b = \frac{4+4}{3} = \frac{8}{3}$ $y = -\frac{2}{3}x + \frac{8}{3}$ (5)

ب) $\frac{|11-4|}{\sqrt{4+9}} = \frac{7}{\sqrt{13}} = \frac{7\sqrt{13}}{13}$

$\frac{|3x-2y-11|}{\sqrt{13}} = \frac{|2x+3y-4|}{\sqrt{13}} \rightarrow 3x-2y-11 = 2x+3y-4 \rightarrow 4y = x+7$ (6)

$\rightarrow 3x-2y-11 = -2x-3y+4 \rightarrow y = -5x+15$

$\frac{|3+2|}{|1+(-4)|} = \frac{5}{5} = 1 \quad \tan \alpha = 1 \rightarrow \alpha = 45^\circ$ (7)

الف) $d = \sqrt{(2+5)^2 + (-2-4)^2} = 10$ ب) $x' = \frac{3-5}{2} = -1$ $y' = \frac{-4+4}{2} = 0$ $\begin{bmatrix} -1 \\ 0 \end{bmatrix}$ (8)

الف) $x' = \frac{3-2-10}{3} = -3$ $y' = \frac{1+3-13}{3} = -3$ $\begin{bmatrix} -3 \\ -3 \end{bmatrix}$ (9)

ب) $\begin{vmatrix} 3 & 1 & 1 \\ \frac{1}{3}x & -2 & 3 \\ -10 & -13 & 1 \end{vmatrix} = 9 + (-10) + 24 - (-30 - 2 - 39) = \frac{94}{3} = 31\frac{2}{3}$

$$\text{الف) } y = \frac{-2x-1}{kx-3} \quad \text{ب) } y = \frac{-2x+1}{-kx-3} \quad \text{ج) } y = \frac{3x+1}{kx-2} \quad \text{د) } y = -\frac{3x-1}{kx+2} \quad (17)$$

$$\text{الف) } x' = x - 2 \rightarrow x = x' + 2 \quad y' = \frac{2x' + 2}{x' - 1} \quad (9)$$

$$y' = y + 3 \rightarrow y = y' - 3$$

$$\text{ب) } x' = x - 3 \rightarrow x = x' + 3 \quad y' = \frac{4}{x'}$$

$$y' = y - 2 \rightarrow y = y' + 2$$

$$\text{الف) } \begin{cases} 3x + ky = 2 \\ 3x - 15y = 3 \end{cases} \rightarrow 19y = -1 \rightarrow y = -\frac{1}{19} \quad x = \frac{1k}{19} \quad (10)$$

$$\text{ب) } \begin{cases} 3x + ky = 2 \\ x - 15y = 1 \end{cases} \quad x = -\frac{k+10}{-15-k} = \frac{1k}{19}$$

$$y = \frac{3-2}{-15-k} = -\frac{1}{19}$$