

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

ب) $b = 14 \Rightarrow y = -3x + 14$

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

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

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

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

$2x + 3y = 4$ $2x + 3y = 4$
 الف) $m = -\frac{2}{3}$ $b = \frac{4+12}{3} = 5$ $y = -\frac{2}{3}x + 5$

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

$\frac{|3x - 2y - 1|}{\sqrt{13}} = \frac{|2x + 3y - 3|}{\sqrt{13}} \rightarrow 3x - 2y - 1 = 2x + 3y - 3 \rightarrow 3y = x + 2$ ③
 $3x - 2y - 1 = -2x - 3y + 3 \rightarrow y = -5x + 4$

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

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

الف) $x' = \frac{3-2-10}{3} = -3$ $y' = \frac{1+3-13}{3} = -3$ ⑥

ب) $\frac{1}{2}x \begin{vmatrix} 3 & 1 & 1 \\ -2 & 3 & 1 \\ -10 & -13 & 1 \end{vmatrix} = 9 + (-10) + 24 - (-30 - 2 - 34) = \frac{94}{2} = 47$

$$\text{الف) } y = \frac{-2x-1}{4x-3} \quad \text{ب) } y = \frac{-2x+1}{-4x-3} \quad \text{ج) } y = \frac{3x+1}{4x-2} \quad \text{د) } y = -\frac{3x-1}{4x+2} \quad (11)$$

$$\text{الف) } x' = x-2 \rightarrow x = x'+2 \quad y' = \frac{5x'+2}{x'-1} \quad (9)$$

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

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

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

$$\text{الف) } \begin{cases} 3x+4y=2 \\ 3x-15y=3 \end{cases} \rightarrow 19y = -1 \rightarrow y = -\frac{1}{19} \quad x = \frac{14}{19} \quad (10)$$

$$\text{ب) } \begin{cases} 3x+4y=2 \\ x-5y=1 \end{cases} \quad x = -\frac{4+10}{-15-4} = \frac{14}{19}$$

$$y = \frac{3-2}{-15-4} = -\frac{1}{19}$$