

$$m = \frac{-2-2}{5-4} = \frac{-4}{1} = -4$$

$$y-2 = (-4)(x-4)$$

$$\Rightarrow y = -4x + 18$$

$$m = \frac{-4}{1} = -4 \Rightarrow y-2 = (-4)(x-4) \Rightarrow y = -4x + 18$$

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

$$m = \tan \frac{\pi}{3} = \sqrt{3} \Rightarrow y-2 = \sqrt{3}(x-4) \Rightarrow y = \sqrt{3}x - 4\sqrt{3} + 2$$

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

$$d = \frac{|4 + 12 - 3|}{\sqrt{9 + 16}} = \frac{13}{5} = \boxed{\frac{13}{5}}$$

$$2x + 3y = 7 \xrightarrow{\times 2} 4x + 6y = 14$$

$$4x + 6y = \frac{14 + 12}{2} \Rightarrow 4x + 6y = 13$$

$$d = \frac{|13 - 14|}{\sqrt{16 + 36}} = \frac{1}{\sqrt{52}}$$

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

$$2x + 3y - 3 \Rightarrow x - 2y + 2 = 0$$

$$\Rightarrow 3x - 2y - 1 = -2x - 3y + 3 \Rightarrow 5x + y - 4 = 0$$

$$m = -3 \quad m' = 2$$

$$\tan \alpha = \left| \frac{-3-2}{1+(-6)} \right| = 1 \Rightarrow \alpha = \frac{\pi}{4}$$

$$d = \sqrt{(3+0)^2 + (-2-4)^2} = \sqrt{37}$$

$$M = \left(\frac{-5+3}{2}, \frac{4+(-2)}{2} \right) \Rightarrow M(-1, +1)$$

$$M \left(\frac{3+(-2)+(-10)}{3}, \frac{1+3+(-13)}{3} \right) = (-3, -3)$$

$$S = \frac{1}{2} \begin{vmatrix} -10 & -13 & 1 \\ -2 & 3 & 1 \\ 3 & 1 & 1 \end{vmatrix} = \frac{1(9+29+(-10)) - (-30+(-2)+(-39))}{2} = \boxed{48}$$

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

(الف - 1)

$$y = \frac{-2x+1}{-4x-3}$$

(ب)

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

(ج)

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

(د)

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

(الف - 9)

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

(ب)

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

$$\left. \begin{array}{l} 3x+4y=2 \\ 3x-18y=3 \end{array} \right\} \quad 19y = -1 \Rightarrow y = -\frac{1}{19} \quad x = \frac{14}{19}$$

-10

(الف)

$$x = - \frac{\begin{vmatrix} 1 & 2 \\ -8 & 1 \end{vmatrix}}{\begin{vmatrix} 3 & 4 \\ 3 & -18 \end{vmatrix}} = -\frac{14}{-19} = \frac{14}{19}$$

$$y = \frac{\begin{vmatrix} 1 & 3 \\ 1 & -8 \end{vmatrix}}{\begin{vmatrix} 3 & 4 \\ 3 & -18 \end{vmatrix}} = -\frac{1}{19}$$

(ب)