

الف) $x' = x - 1$ $y' = y + 1$

$x = x' + 1$ $y = y' - 1$

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

ب) $x' = x - 1 \Rightarrow x = x' + 1$, $y' = y + 1 \Rightarrow y = y' - 1$

$y' + 1 = \frac{1(x' + 1) + 1}{(x' + 1) - 1} \rightarrow y' = \frac{1x' + 1 - 1}{x' - 1} \rightarrow y' = \frac{1}{x' - 1}$

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$\begin{cases} 1x + 1y = 1 \\ 1x - 1y = 1 \end{cases} \rightarrow 19y = -1 \rightarrow y = \frac{-1}{19} \Rightarrow$

$\frac{-1}{19} + 1 = x \rightarrow x = \frac{18}{19}$

ب) $x = - \begin{bmatrix} 1 & 1 \\ -1 & 1 \end{bmatrix}$
 $-10 - 18 = \begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix}$

$y = \begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$
 $\begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix}$

$x = \frac{18 + 1}{-10 - 18} = \frac{19}{-28}$

$y = \frac{1 - 1}{-10 - 18} = \frac{0}{-28}$

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$$\cos \alpha = \frac{|m - m'|}{1 + mm'} \Rightarrow m = 2, m' = 3 \rightarrow$$

$$\cos \alpha = \frac{2 \cdot 3}{1 + 6} = 1 \rightarrow \alpha = 0^\circ \checkmark$$

$$\alpha = 210^\circ \text{ قوس}$$

الف) $d = \sqrt{4x + 3y} = 10$

ب) $x = \frac{-d + 3}{2} = -1$, $y = \frac{4 - x}{2} = 1 \rightarrow M = (-1, 1)$

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

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

$\Rightarrow$ مركز الدائرة $(-3, -3)$

الف) $\begin{bmatrix} -10 & -13 & 1 \\ -2 & 3 & 1 \\ 3 & 1 & 1 \end{bmatrix}$

$$-30 - 39 - 2 = -71$$

$$9 + 24 - 10 = 23 \rightarrow \text{س} -71 - 23 \text{ س} 94$$

$$94 \times \frac{1}{2} = 47$$

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

ب) $y = \frac{-2m+1}{-m-3}$

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

$\rightarrow y = \frac{3m+1}{m-2}$

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

$\rightarrow y = \frac{1-3m}{m+2}$

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①

$$\text{الف) } m = \frac{y_1 - y_0}{x_1 - x_0} \rightarrow m = \frac{14}{-1} = -14 \quad , \quad y = ax + b \quad (x_1, y_1) \\ y = -14x + b \rightarrow b = 11$$

$$\rightarrow y = -14x + 11$$

$$\text{ب) } 2y + 4m = 1 \rightarrow m = -\frac{1}{2} \rightarrow -\frac{1}{2} = \frac{y_1 - y_0}{x_1 - x_0}$$

$$-3m + 11 = y_1 - 2 \rightarrow y = -3m + 13$$

$$\text{ج) } m m' = -1 \rightarrow m' = \frac{1}{m} \rightarrow \frac{1}{m} = \frac{y_1 - y_0}{x_1 - x_0}$$

$$12m - 12 = y_1 - 2 \rightarrow y = 12m - 10$$

$$\text{د) } m = \tan \frac{\pi}{3} = \sqrt{3} \rightarrow \sqrt{3} = \frac{y_1 - y_0}{x_1 - x_0} \rightarrow \sqrt{3}x - 1\sqrt{3} + 2 = y$$

$$\text{الف) } d = \sqrt{(y_1 - y_0)^2 + (x_1 - x_0)^2} \rightarrow d = \sqrt{14 + 9} = 5$$

$$\text{ب) } d = \frac{|am_1 + by_1 + c|}{\sqrt{a^2 + b^2}} \rightarrow d = \frac{|1 + 12 - 13|}{\sqrt{1 + 14}} = \frac{10}{5} = 2$$

$$\text{الف) } km + 4y \leq 1 \rightarrow km + 4y \leq k, \quad km + 4y \leq 4 \rightarrow \frac{C+C}{2} \rightarrow b \leq \frac{4+k}{2} \text{ sat} \\ \rightarrow km + 4y \leq 5$$

$$\text{ب) } d = \frac{|C - C'|}{\sqrt{a^2 + b^2}} = \frac{1}{\sqrt{13}} = \frac{1\sqrt{13}}{13}$$

$$\frac{|ax_1 + by_1 + c|}{\sqrt{a^2 + b^2}} = \frac{|am_1 + by_1 + c|}{\sqrt{a^2 + b^2}} \rightarrow \frac{|km + 4y - 4|}{\sqrt{13}} = \frac{|km + 4y - 1|}{\sqrt{13}} \quad \text{②}$$

$$\rightarrow km + 4y - 4 = km + 4y - 1 \rightarrow 3y - x - 3 = 0$$

$$km + 4y - 4 = -(km + 4y + 1) \rightarrow 5x + y - 3 = 0$$

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