

الف) $m_2 = \frac{-2-3}{5-1} = -1 \Rightarrow y_2 = -x + 1$ ب) $2y_2 = 1 - 6x$ $y_2 = -\frac{1}{2}x + \frac{1}{4}$ ج) $2y_2 = 1 - x \rightarrow y_2 = \frac{1-x}{2} \rightarrow m_2 = -\frac{1}{2} \xrightarrow{\text{مرد}} 3 \rightarrow y_2 = 2x - 1$ د) $\frac{\pi}{2} = 90^\circ \rightarrow m_2 = \tan 90^\circ = \sqrt{3} \rightarrow y_2 = \sqrt{3}x - 4\sqrt{3} + 2$	۱
الف) $\sqrt{(1-2)^2 + (-1-2)^2} = \sqrt{1+9} = \boxed{5}$ ب) $\frac{ 2x_1 + 4y_1 - 3 }{\sqrt{3^2 + 4^2}} = \frac{ (2 \times 2) + (4 \times 2) - 3 }{5} = \boxed{3}$	۲
$\begin{cases} 2x + 3y = 6 \\ x + 2y = 1 \end{cases} \xrightarrow{\times 2} \begin{cases} 2x + 3y = 6 \\ 2x + 4y = 2 \end{cases} \Rightarrow 2x + 3y = \frac{12+1}{2} = 2x + 3y = 10$ $\Rightarrow 2x + 3y = 5$ ب) $\frac{ C-C' }{\sqrt{a^2+b^2}} = \frac{ 12-11 }{\sqrt{14+29}} = \boxed{\frac{1}{\sqrt{43}}}$	۳
$\frac{ 2x_1 + 3y_1 - 3 }{\sqrt{4+9}} = \frac{ 2x_1 - 3y_1 - 1 }{\sqrt{9+4}}$ $\Rightarrow 2x_1 + 3y_1 - 3 \begin{cases} 2x_1 - 3y_1 - 1 \rightarrow -x_1 + 4y_1 = 2 \\ -2x_1 + 3y_1 + 1 \rightarrow 5x_1 + y_1 = 4 \end{cases}$	۴
$\begin{cases} y_2 = 2x_1 + 5 \rightarrow m_2 = 2 \\ y_2 = -2x_1 + 3 \rightarrow m_2 = -2 \end{cases} \rightarrow \tan \alpha = \left \frac{2 - (-2)}{1 + (-4)} \right = 1$ $\Rightarrow \tan \alpha = 1 \Rightarrow \alpha = \frac{\pi}{4} = \boxed{45^\circ}$	۵

$$\sqrt{(f+2)^2 + (-8-2)^2} = \sqrt{36+100} = \boxed{10} \quad (\text{الف})$$

$$x_1 = \frac{5-0}{2} = \boxed{-1} \rightarrow (-1, +1) \quad (\text{ب})$$

$$y_1 = \frac{-2+2}{2} = \boxed{0}$$

$$x_1 = \frac{(-1) + (-2) + (3)}{3} = \boxed{-3}, y_1 = \frac{(-12) + (3) + (1)}{3} = -3 \quad (\text{الف})$$

$$(-3, -3)$$

$$\frac{1}{2} \times \begin{bmatrix} -1 & -2 & 3 \\ -12 & 3 & 1 \\ 1 & 1 & 1 \end{bmatrix} = \frac{1}{2} \begin{pmatrix} -30 - 24 - 2 - 4 + 10 - 24 \end{pmatrix} \quad (\text{ب})$$

$$\Rightarrow -96 \times \frac{1}{2} = -48 \quad \text{مساحة} \quad \boxed{48}$$

$$-y_1 = \frac{2x+1}{x-5} \quad (\text{الف})$$

$$y_1 = \frac{-2x+1}{-x-5} \quad (\text{ب})$$

$$x_1 = \frac{2y+1}{y-5} \rightarrow y_1 = \frac{2x+1}{x-5} \quad (\text{ج})$$

$$-x_1 = \frac{-2y+1}{-y+1} \rightarrow y_1 = \frac{1-2x}{x+1} \quad (\text{د})$$

$$x'_1 = x_1 + 2 \Rightarrow x_1 = x'_1 - 2$$

$$y'_1 = y_1 + 5 \Rightarrow y_1 = y'_1 - 5 \rightarrow y_1 - 5 = \frac{2(x_1+2)+1}{(x_1+2)-5} \rightarrow y_1 = \frac{2x_1+9}{x_1-1} + 5$$

$$x_1 = x'_1 + 2 \rightarrow y_1 + 5 = \frac{2(x_1+2)+1}{(x_1+2)-5} \rightarrow y_1 + 5 = \frac{2}{x_1-1} + 5 \rightarrow y_1 = \frac{2}{x_1-1}$$

$$\begin{cases} 2x+y=2 \\ x-5y=1 \end{cases} \Rightarrow \begin{cases} 2x+y=2 \\ -2x+10y=-2 \end{cases} \Rightarrow 11y=-1 \Rightarrow y_1 = \boxed{-\frac{1}{11}} \quad (\text{الف})$$

$$x_1 = \frac{\begin{vmatrix} 2 & 1 \\ -5 & -2 \end{vmatrix}}{\begin{vmatrix} 1 & 1 \\ 1 & -5 \end{vmatrix}} = \frac{2 - (-2)}{-5 - 1} = \frac{4}{-6} = \boxed{-\frac{2}{3}} \quad (\text{ب})$$

$$y_1 = \frac{\begin{vmatrix} 2 & 2 \\ 1 & 1 \end{vmatrix}}{\begin{vmatrix} 1 & 1 \\ 1 & -5 \end{vmatrix}} = \frac{2-2}{-5-1} = \boxed{0}$$