

$A(2, 1)$
 $\frac{dy}{dx} m = \frac{y-1}{x-2}$
 الف) $B(5, -2)$ $\frac{dy}{dx} m = \frac{y+2}{x-5}$
 $-x+b \rightarrow -14+b=2 \rightarrow b=16$
 $-x+b=2y \rightarrow -x+b=2 \rightarrow b=2$
 $m_1 m_2 = -1 \rightarrow -2 \cdot m_2 = -1 \rightarrow m_2 = \frac{1}{2}$
 $y-2 = \frac{1}{2}(x-5) \rightarrow 2y-4 = x-5 \rightarrow x=2y+1$
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$A'(2, 3)$

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

ب) $\frac{|ax+by+c|}{\sqrt{a^2+b^2}} = \frac{|2x+3y-1|}{\sqrt{4+9}} = \frac{|2x+3y-1|}{\sqrt{13}}$

$\frac{c-c'}{\sqrt{a^2+b^2}} = \frac{11-1}{\sqrt{4+9}} = \frac{10}{\sqrt{13}}$
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$y+3x=2$
 $y-2x=5$

$\tan \alpha = \left| \frac{m-m'}{1+mm'} \right| = \left| \frac{1-\frac{1}{2}}{1+\frac{1}{2}} \right| = \left| \frac{\frac{1}{2}}{\frac{3}{2}} \right| = \frac{1}{3}$
 $\tan \alpha = \frac{1}{3} \rightarrow \alpha = 18^\circ$

$$A(3, -2)$$

$$B(-5, 4)$$

الف) فاصله $\rightarrow \sqrt{(x-x')^2 + (y-y')^2} \rightarrow \sqrt{1^2 + 4^2} = \sqrt{17}$

ب) $\mu = \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2} \right)$

فاصله $\rightarrow \left(\frac{3-5}{2}, \frac{-2+4}{2} \right) \rightarrow (-1, 1)$

$$A(3, 1)$$

$$B(-2, 3)$$

$$C(-6, -13)$$

الف) $\mu = \left(\frac{x_1+x_2+x_3}{3}, \frac{y_1+y_2+y_3}{3} \right)$

$\rightarrow \left(\frac{3-2-6}{3}, \frac{1+3-13}{3} \right) \rightarrow \left(\frac{-5}{3}, \frac{-9}{3} \right)$

ب) $\begin{bmatrix} 3 & 1 & -6 \\ -2 & 3 & -13 \\ 1 & -13 & -6 \end{bmatrix} \rightarrow \begin{cases} -6+17+9 \rightarrow 10 \\ -29+(-2)+-13 \rightarrow -44 \end{cases}$

$$y = \frac{2x+1}{5x-3}$$

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الف) $x - 2y = 1 \rightarrow x' = 2y' + 1$

$(y' - 3) = 4(x' + 1) + 1$

ب) $x + 3y = 1 \rightarrow x' = 1 - 3y'$

$2y' = y' \rightarrow y' = \frac{1}{1}$

$$\begin{cases} x + y = 1 \\ x - y = 1 \end{cases}$$

$x = \frac{1}{2}, y = \frac{1}{2}$

$$y = \frac{1}{19}$$