

نام و نام خانوادگی جیسے: پاسخانمہ تشریحی تکلیف شماره ۱۰۰ کلاس (A).....

الف) $y - y_1 = m(x - x_1)$ $y - 2 = m(x - 1)$ $-2 - 2 = m(1 - 1) \rightarrow m = -4$ $y = -4x$ ج) $x + 3y = 1 \rightarrow y = -\frac{1}{3}x + \frac{1}{3} \rightarrow a' = -\frac{1}{3}$ $a' = 3$ $y = 3x + b$ $y - 2 = 3(x - 1) \rightarrow y = 3x - 1$	۱) $y_1 + y_2 = -1 \rightarrow y_1 + y_2 + 1 = 0$ $\frac{y}{a} = \frac{y}{b} \rightarrow \begin{cases} a=1 \\ b=2 \end{cases} \rightarrow y + 2x + C = 0$ $\frac{1}{C} \neq \frac{2}{1} \Rightarrow C = -1 \checkmark$ $y = -2x - 1 \Leftarrow C = -1 \checkmark$ ۲) $a = \tan \theta = \sqrt{3}$ $(y - 2) = \sqrt{3}(x - 1)$ $y - 2 = \sqrt{3}x - \sqrt{3} \rightarrow y = \sqrt{3}x - \sqrt{3} + 2$
الف) $\sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$ حسابی: $\sqrt{(2 - (-1))^2 + (3 - 2)^2} = \sqrt{9 + 1} = \sqrt{10} \Rightarrow$	۲) $ax_1 + by_1 + c$ $\begin{cases} 2x_1 + 3y_1 = 2 \\ 2x_1 + 3y_1 - 2 = 0 \end{cases}$ حسابی: $\frac{ 2(2) + 3(3) - 2 }{\sqrt{2^2 + 3^2}} = \frac{10}{\sqrt{13}} = 3$
الف) $\begin{cases} 2x_1 + 3y_1 = 2 \\ 5x_1 + 2y_1 = 1 \end{cases} \rightarrow 2x_1 + 3y_1 = 2$ $ax + by = \frac{C + C'}{P}$ $2x + 3y = \frac{2 + 2}{4} = 1$ $2x + 3y = 1 \rightarrow y = -\frac{2}{3}x + \frac{1}{3}$	۳) $d = \frac{ C - C' }{\sqrt{a^2 + b^2}}$ حسابی $\frac{ 4 - 2 }{\sqrt{2^2 + 3^2}}$ $\frac{2}{\sqrt{13}} = \frac{2}{\sqrt{13}} = \frac{2\sqrt{13}}{13}$
$\frac{ ax + by - c }{\sqrt{a^2 + b^2}} = \frac{ a'x + b'y - c' }{\sqrt{(a')^2 + (b')^2}}$ حسابی: $\frac{ 2x + 3y - 2 }{\sqrt{2^2 + 3^2}} = \frac{ 3x - 2y - 1 }{\sqrt{3^2 + (-2)^2}}$	۴) $\begin{cases} 2x + 3y - 2 = 3x - 2y - 1 \\ 2x + 3y - 2 = 3x - 2y - 1 \\ -x + 5y = 1 \\ 2x + 3y - 2 = -(3x - 2y - 1) \\ 5x + y = 3 \end{cases}$
$\tan \alpha = \left \frac{m - m'}{1 + mm'} \right$ $y - 2x = 1 \rightarrow m = 2$ $y = 2x + 1 \rightarrow m' = 2$ $y + 2x = 2 \rightarrow m' = -2$	۵) $\text{حسابی: } \left \frac{2 - (-2)}{1 + (2)(-2)} \right = \left \frac{4}{-3} \right = \left -\frac{4}{3} \right = 1.33$ $\tan \alpha = 1 \rightarrow \alpha = 45^\circ$ $\beta = 180^\circ - \alpha = 180^\circ - 45^\circ = 135^\circ$

$$\sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

$$\sqrt{(-1 - (-1))^2 + (-2 - (-2))^2} = \sqrt{(-1)^2 + (-2)^2}$$

$$\sqrt{1 + 4} = \sqrt{5} = 1$$

$$(x', y') : x' = \frac{x_1 + x_2}{2} = \frac{-1 - 1}{2} = -1$$

$$y' = \frac{y_1 + y_2}{2} = \frac{-2 + (-2)}{2} = -2$$

$$P(-1, -1)$$

$$| -1 |$$

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$$x' = \frac{x_1 + x_2 + x_3}{3}$$

$$y' = \frac{y_1 + y_2 + y_3}{3}$$

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

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

$$\begin{pmatrix} -1 \\ -2 \\ -1 \end{pmatrix}$$

$$\frac{1}{3} \begin{vmatrix} -1 & -2 & -1 \\ -1 & -2 & -1 \\ -1 & -2 & -1 \end{vmatrix} =$$

$$= \frac{1}{3} \times \begin{vmatrix} -1 & -2 & -1 \\ -1 & -2 & -1 \\ -1 & -2 & -1 \end{vmatrix} =$$

$$= \frac{1}{3} \times \frac{1 - 9}{1} = \frac{-8}{3} = -\frac{8}{3}$$

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$$(x, y) \rightarrow (x, -y)$$

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

$$(x, y) \rightarrow (-x, y)$$

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

$$(x, y) \rightarrow (y, x)$$

$$x = \frac{xy + 1}{xy - 2} \rightarrow y' = \frac{-x - 1}{xy - 2} + y' = \frac{x + 1}{xy - 2}$$

$$(x, y) \rightarrow (-y, -x)$$

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

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$$x' = x - 2$$

$$y' = y - (-2) = y + 2$$

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

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

$$y = \frac{2x - 4 - 2x + 8}{x - 4} \rightarrow y = \frac{-2x + 4}{x - 4}$$

$$x' = x - 2$$

$$y' = y - 2$$

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

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

$$y = \frac{2x - 4 + 2x - 8}{x - 4} \rightarrow y = \frac{4x - 12}{x - 4}$$

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$$\begin{cases} 3x + 5y = 2 \\ x - 5y = 1 \rightarrow x = 5y + 1 \end{cases}$$

$$3(5y + 1) + 5y = 2$$

$$15y + 3 = 2 \rightarrow y = \frac{-1}{14}$$

$$x = 5\left(\frac{-1}{14}\right) + 1 = \frac{-5}{14} + \frac{14}{14} = \frac{9}{14}$$

$$x = -\frac{b'c'}{b'c'}$$

$$y = \frac{a'c'}{a'b'}$$

$$x = -\frac{1 \cdot 1}{1 \cdot 1} = -1$$

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

$$x = \frac{1}{14} \quad y = \frac{-1}{14}$$

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