

نام و نام خانوادگی ..... فامیل ..... باسختنامه تشریحی تکلیف شماره ۱۵۰ کلاس ..... از شهر .....  
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الف)  $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{2}{-1} = -2$  ,  $ax + by = c \Rightarrow -2(2) + b = 2 \Rightarrow b = 6$  پس  $y = -2x + 6$

ب) خط موازی (ب)  $\Rightarrow 4x + 1 = -2y \Rightarrow -2x - \frac{1}{2} = y$  و  $m = -2$   $\Rightarrow 2(-2) + b = 2 \Rightarrow b = 6$  پس  $y = -2x + 6$

ج)  $-1 = \text{ضربش در ۳} \Rightarrow 3y = -x + 1 \Rightarrow y = -\frac{1}{3}x + \frac{1}{3}$   $\Rightarrow m = -\frac{1}{3}$   $\Rightarrow \frac{1}{3}(-\frac{1}{3}) + b = 2 \Rightarrow b = 2 + \frac{1}{9} = \frac{19}{9}$  پس  $y = -\frac{1}{3}x + \frac{19}{9}$

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

الف)  $d = \sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2} = \sqrt{16 + 9} = 5$

ب)  $d = \frac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}}$   $y = -\frac{3}{2}x + \frac{3}{2}$   $3x + 2y - 3 = 0$   $\Rightarrow \frac{|3(2) + 2(3) - 3|}{\sqrt{9 + 4}} = \frac{9}{5} = 1.8$

الف)  $ax + by = \frac{c + c'}{2} \Rightarrow \begin{cases} 2x + 4y = 12 \\ 2x + 4y = 8 \end{cases}$   $\Rightarrow \begin{cases} 2x + 4y = 10 \Rightarrow -\frac{1}{2}x + \frac{1}{2} = y \end{cases}$

ب)  $d = \frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{|12 - 8|}{\sqrt{4 + 16}} = \frac{4}{2\sqrt{5}} = \frac{\sqrt{5}}{5}$

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

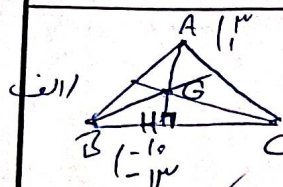
$\Rightarrow \begin{cases} 3x - 2y - 1 = 2x + 3y - 3 \Rightarrow x - 5y = -2 \\ 3x - 2y - 1 = -(2x + 3y - 3) \Rightarrow 5x + y = 4 \end{cases}$

$\begin{cases} y = -\frac{3}{5}x + \frac{4}{5} \\ y' = \frac{3}{5}x + \frac{4}{5} \end{cases}$   $\tan \alpha = \left| \frac{m - m'}{1 + mm'} \right| = \left| \frac{2 - (-3)}{1 - 6} \right| = 1 = \tan 45^\circ$   $\Rightarrow \begin{cases} \alpha = 45^\circ \\ \beta = 135^\circ \end{cases}$

الف)  $\sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2} \Rightarrow \sqrt{(1)^2 + (-4)^2} = \boxed{15}$

ب)  $\left| \frac{x+x'}{y+y'} \right| = \left| \frac{-\frac{r}{r}}{\frac{r}{r}} \right| = \boxed{1, -1}$

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$x_G = \frac{x_A + x_B + x_C}{3} = \frac{-9}{3} = -3$

$y_G = \frac{y_A + y_B + y_C}{3} = \frac{-9}{3} = -3$

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ب)  $\Rightarrow BC \parallel A$   $\Rightarrow BC \left\{ \begin{array}{l} x=1 \\ y=-10 \end{array} \right. \Rightarrow y = 2x + 1$   $\Rightarrow \frac{|2(3) - (1) + 1|}{\sqrt{2+1}} = \frac{12\sqrt{3}}{3} = 4\sqrt{3}$

الف)  $-y = \frac{2x+1}{\varepsilon x-3} \Rightarrow y = \frac{-2x-1}{\varepsilon x-3}$

ب)  $y = \frac{-2x+1}{-3-\varepsilon x}$

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ج)  $x = \frac{2y+1}{\varepsilon y-3} \Rightarrow y = \frac{1+3x}{\varepsilon x-2}$

د)  $-x = \frac{-2y+1}{3+\varepsilon y} \Rightarrow y = \frac{-3x+1}{\varepsilon x+3}$

الف)  $\left\{ \begin{array}{l} x' = x - \alpha \\ y' = y - \beta \end{array} \right. \Rightarrow \left\{ \begin{array}{l} x' + \alpha = x \\ y' + \beta = y \end{array} \right. \Rightarrow \frac{2(x'+\alpha)+1}{(x'+\alpha)-3} = y' + \beta \Rightarrow \frac{2x' + \alpha + 1}{x' - 1} = y'$

1, \sqrt{5}

ب)  $\left\{ \begin{array}{l} x' = x - 3 \\ y' = y - 2 \end{array} \right. \Rightarrow \left\{ \begin{array}{l} x = x' + 3 \\ y = y' + 2 \end{array} \right. \Rightarrow \frac{2(x'+3)+1}{(x'+3)-3} = y' + 2 \Rightarrow \frac{2x' + 7}{x'} = y' + 2 \Rightarrow \frac{2x' + 7}{x'} = y' + 2$

الف)  $\left\{ \begin{array}{l} 3x + \varepsilon y = 2 \\ -3x + 10y = -2 \end{array} \right. \Rightarrow \left\{ \begin{array}{l} 19y = -1 \Rightarrow y = -\frac{1}{19} \\ 3x = \frac{\varepsilon}{19} = 2 \Rightarrow x = \frac{81\varepsilon}{19} \end{array} \right.$

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ب)  $x = -\frac{\begin{vmatrix} \varepsilon & 2 \\ -10 & 1 \end{vmatrix}}{\begin{vmatrix} 3 & \varepsilon \\ 1 & -10 \end{vmatrix}} = -\frac{\varepsilon+20}{-10-\varepsilon} = \frac{12}{19}$   $y = \frac{\begin{vmatrix} 3 & 2 \\ 1 & 1 \end{vmatrix}}{\begin{vmatrix} 3 & \varepsilon \\ 1 & -10 \end{vmatrix}} = \frac{3-2}{-10-\varepsilon} = \frac{-1}{19}$