

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۱۴... کلاس:
 نام:
 نام خانوادگی:

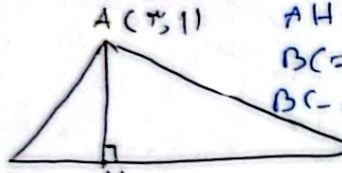
عدد منفی، خط گذر از A، B بر آن عمود است پس: $m = \frac{\Delta y}{\Delta x} = \frac{-4-1}{4-2} = \frac{-5}{2} = -\frac{5}{2}$ $m \cdot m' = -1$

$m' = \frac{2}{5} \Rightarrow y = \frac{2}{5}x + b$

$M(x, y) = \frac{x_A + x_B}{2} = \frac{y_A + y_B}{2} = y$

$\Rightarrow \frac{4+2}{2} = 3, \frac{1+(-1)}{2} = 0 \Rightarrow M(3, 1)$

$y = \frac{2}{5}x + \frac{4}{5}$ $5y - 2x = 4$ ✓



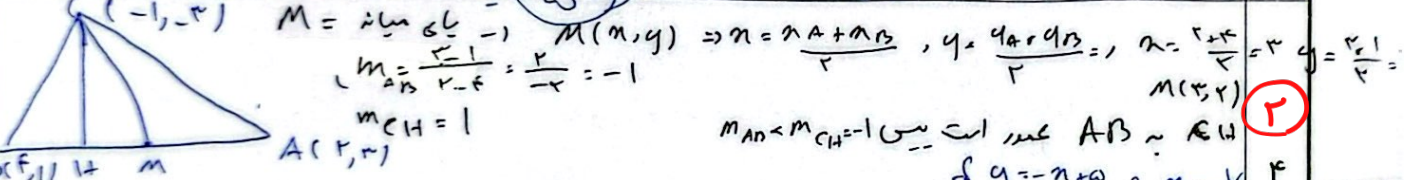
$BC = \sqrt{(x_B - x_C)^2 + (y_B - y_C)^2} = \sqrt{(-4 - (-1))^2 + (7 - 2)^2} = \sqrt{9 + 25} = \sqrt{34}$

$BC = \sqrt{34}$ $BC \sim AH$ $H(-1,2)$

$m_{BC} = \frac{y_B - y_C}{x_B - x_C} = \frac{7-2}{-4-(-1)} = \frac{5}{-3} = -\frac{5}{3}$ $m_{AH} = \frac{y_H - y_A}{x_H - x_A} = \frac{2-1}{-1-3} = \frac{1}{-4} = -\frac{1}{4}$ $m_{BC} \cdot m_{AH} = (-\frac{5}{3}) \cdot (-\frac{1}{4}) = \frac{5}{12} \neq -1$

$2y - x = 2$ $4y - 2x = 4$ $m = \frac{1}{2}$ $m' = \frac{a}{b} = \frac{1}{2} \Rightarrow a = 2, b = 1 \Rightarrow 2y - x = 2$

$\frac{|C - C'|}{\sqrt{a^2 + b^2}} = \frac{|2 - 1|}{\sqrt{4 + 1}} = \frac{1}{\sqrt{5}} = \frac{\sqrt{5}}{5}$



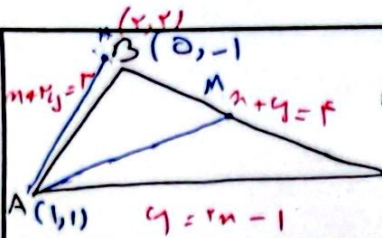
$AB \Rightarrow y = -x + b$ $3 = -2 + b \Rightarrow b = 5 \Rightarrow y = -x + 5$ $CH \Rightarrow y = mx + b$ $2 = m(-1) + b \Rightarrow b = 2 + m$ $y = mx + 2 + m$

$M(3, 2)$ $MH = \sqrt{(x_H - x_M)^2 + (y_H - y_M)^2} = \sqrt{(\frac{1}{2} - 3)^2 + (\frac{1}{2} - 2)^2} = \sqrt{(\frac{-5}{2})^2 + (\frac{-3}{2})^2} = \sqrt{\frac{25}{4} + \frac{9}{4}} = \sqrt{\frac{34}{4}} = \frac{\sqrt{34}}{2}$

$(2m-2)x + (0-m)y - 15 = 0$ $(m+1)x + (2m-4)y + 1 = 0$ $m = -\frac{a}{b} = -\frac{(2m-2)}{(m+1)}$ $m' = \frac{m+1}{2m-4}$ $m \cdot m' = -1 \Rightarrow m' = -\frac{1}{m} \Rightarrow \frac{m+1}{2m-4} = -\frac{1}{m} \Rightarrow m^2 + m = -2m + 4 \Rightarrow m^2 + 3m - 4 = 0 \Rightarrow (m+4)(m-1) = 0 \Rightarrow m = -4 \text{ or } m = 1$

$3m^2 + m - 2 = -4m^2 + 14m + 2 \Rightarrow 0m^2 - 13m + 18 = 0 \Rightarrow 13m - 18 = 0 \Rightarrow m = \frac{18}{13}$

$\Delta = 149 - 34 = 115$



$AC = BC \Rightarrow \sqrt{(x-1)^2 + (y-1)^2} = \sqrt{(x-0)^2 + (y+1)^2}$
 $AC = AB \Rightarrow \sqrt{(x-1)^2 + (y-1)^2} = \sqrt{(x-1)^2 + (y+1)^2}$
 $BC = AB \Rightarrow \sqrt{(x-0)^2 + (y+1)^2} = \sqrt{(x-1)^2 + (y+1)^2}$
 $C(\frac{5}{4}, \frac{5}{4})$ $A(1,1), B(0,-1), C(\frac{5}{4}, \frac{5}{4})$

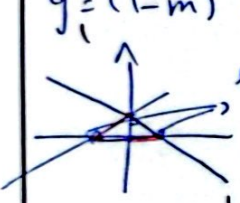
$AC: y = 2x - 1 \Rightarrow y = 2x - 1$
 $AB: x + y = 1 \Rightarrow y = 1 - x$
 $BC: x + y = 1 \Rightarrow y = 1 - x$
 $M = (\frac{5}{4}, \frac{5}{4})$
 $MA = \sqrt{(\frac{5}{4}-1)^2 + (\frac{5}{4}-1)^2} = \sqrt{\frac{1}{4} + \frac{1}{4}} = \sqrt{\frac{2}{4}} = \frac{\sqrt{2}}{2}$
 $MB = \sqrt{(\frac{5}{4}-0)^2 + (\frac{5}{4}+1)^2} = \sqrt{\frac{25}{16} + \frac{49}{16}} = \sqrt{\frac{74}{16}} = \frac{\sqrt{74}}{4}$
 $MC = \sqrt{(\frac{5}{4}-\frac{5}{4})^2 + (\frac{5}{4}-\frac{5}{4})^2} = \sqrt{0 + 0} = 0$

$y = mx + c \Rightarrow y = mx + c \Rightarrow \sqrt{1+m^2} = \frac{|y - mx + c|}{\sqrt{1+m^2}} = \frac{|c|}{\sqrt{1+m^2}}$

$A(x_1, y_1), B(x_2, y_2) \Rightarrow y = mx + c \Rightarrow y = mx + c$

$C, y = 0 \Rightarrow 0 = mx + c \Rightarrow mx = -c \Rightarrow x = -\frac{c}{m}$
 $A(-\frac{c}{m}, 0), B(0, c)$
 $AB = \sqrt{(\frac{c}{m})^2 + c^2} = \sqrt{\frac{c^2}{m^2} + c^2} = \sqrt{c^2(\frac{1}{m^2} + 1)} = |c| \sqrt{\frac{1}{m^2} + 1} = |c| \sqrt{\frac{1+m^2}{m^2}} = \frac{|c| \sqrt{1+m^2}}{|m|}$

$y = (1-m)x + 2$
 $y = \frac{1}{m}x + 2$
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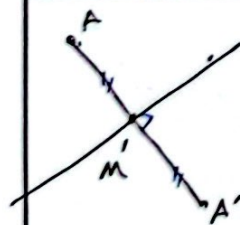
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$0m - 0 = m^2 + 0 - 1 \Rightarrow m^2 + 0 - 1 = 0 \Rightarrow m^2 = 1 \Rightarrow m = \pm 1$
 $m = 1 \Rightarrow y = 0x + 2 = 2$
 $m = -1 \Rightarrow y = 2x + 2$

$y = 2x - 1$
 $y = 2x - 1$
 $y = 2x - 1$

$A(0, 2), B(2, 0)$
 $M(1, 1)$
 $MA = \sqrt{(1-0)^2 + (1-2)^2} = \sqrt{1 + 1} = \sqrt{2}$
 $MB = \sqrt{(1-2)^2 + (1-0)^2} = \sqrt{1 + 1} = \sqrt{2}$
 $MC = \sqrt{(1-1)^2 + (1-1)^2} = \sqrt{0 + 0} = 0$

$y = 2x - 1$
 $y = 2x - 1$
 $y = 2x - 1$



$AA' = 2$
 $AA' = 2$
 $AA' = 2$

$M = (\frac{1+a}{2}, \frac{b+1}{2})$
 $y = x + 1$
 $y = x + 1$

$I, II \begin{cases} a+b=2 \\ a-b=-2 \end{cases} \Rightarrow a=0, b=2$
 $a=0, b=2$
 $a=0, b=2$

$$m_{AH}=1 \rightarrow y = x + b \quad A(b,1), \quad 1 = 1 + b \Rightarrow b = 0 \quad y_{AH} = x \text{ (95\%)}.$$

$$AH, B \text{ (كل تلاقى)} = H \Rightarrow y - x = y + x - r \Rightarrow r = x = r = y, \quad y = r$$

$$\text{H} = (r, r) \rightarrow AH = \sqrt{(r-1)^2 + (r-1)^2} = \sqrt{r} \Rightarrow \frac{AM}{AH} = \frac{AM = \frac{\partial \sqrt{r}}{\partial r}}{AH = \sqrt{r}}$$

$$\frac{AM}{AH} = \frac{\frac{\partial \sqrt{r}}{\partial r}}{\sqrt{r}} = \frac{\frac{0.5}{\sqrt{r}}}{\sqrt{r}} = \frac{0.5}{r} \Rightarrow \frac{AM}{AH} = \frac{0.5}{r} \checkmark$$