۱۸٫۷۵

نام و نام خانوادگی .مهراز بشیرانی.......... پاسخنامه تشریحی تکلیف شماره ..۱۶... کلاس یازدهم [illegible] A.......

۱ (۲)

$A(4,-6)\ ,\ B(2,8)$ $\xrightarrow{\text{نقطه وسط}}$ $x_M=\frac{6}{2}$, $y_M=\frac{2}{2}$ $\Rightarrow M=(3,1)$

$\rightarrow m=\frac{8-(-6)}{2-4}=-7 \xrightarrow{m\times m'=-1} m'=\frac{1}{7}$

$M=(3,1),\ m'=\frac{1}{7} \longrightarrow y=\frac{1}{7}x+\frac{4}{7}$ ✓

۲ (۲)

$A=(3,1)\quad B=(-4,7)\quad C=(-1,3)$

$S=\frac{1}{2}\begin{vmatrix}3&-4&-1\\1&7&3\\1&1&1\end{vmatrix}=\frac{1}{2}(10)=5$

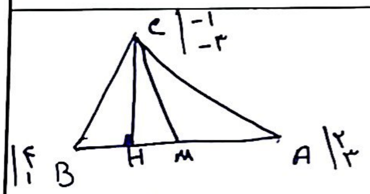
$\overline{BC}=\sqrt{3^2+4^2}=5 \longrightarrow \frac{\overline{BC}\times AH}{2}=5 \longrightarrow \overline{AH}=2 \longrightarrow \overline{BC}-\overline{AH}=3$ ✓

۳ (۲)

$4y-ax-2=0$, $2y-x-7=0 \longrightarrow a=2$

$\left.\begin{matrix}4y-2x-2\\4y-2x-14\end{matrix}\right\} \longrightarrow d=\frac{12}{2\sqrt{5}}=2R \rightarrow R=\frac{3}{\sqrt{5}} \longrightarrow S=\frac{9}{5}\pi$ ✓

۴ (۲)



$M\left|\begin{matrix}\frac{2+4}{2}\\\frac{3+1}{2}\end{matrix}\right. \longrightarrow M\left|\begin{matrix}3\\2\end{matrix}\right. \longrightarrow d=\sqrt{(0.5)^2+(0.5)^2}=\frac{\sqrt{2}}{2}$ ✓

$m_{AB}=\frac{2}{-2}=-1 \longrightarrow \overline{AB} \rightarrow y=-x+5$

$m_{CH} \rightarrow 1 \longrightarrow \overline{CH} \rightarrow y=x-2$

$\longrightarrow 2x=7 \rightarrow x=\frac{7}{2},\ y=\frac{3}{2} \rightarrow H\left|\begin{matrix}\frac{7}{2}\\\frac{3}{2}\end{matrix}\right.$

۵ (۲)

$(3m-2)x+(5-m)y-7=0 \longrightarrow m=\frac{3m-2}{m-5}$ | $(m+1)x-(2m-4)y+1=0 \rightarrow m'=\frac{m+1}{2m-4}$

$\rightarrow m\times m'=-1 \longrightarrow \frac{3m-2}{m-5}\times\frac{m+1}{2m-4}=\frac{3m^2+m-2}{2m^2-14m+20}=-1 \rightarrow 3m^2+m-2=-2m^2+14m-20$

$\rightarrow 5m^2-13m+18=0 \longrightarrow m=-1\ ,\ \frac{18}{5}$ $\xrightarrow{\text{داخل معادله صدق نمی‌کند}}$ جواب ندارد ✓

۶ — (۲)

$AB \Rightarrow y = -\frac{1}{2}x + \frac{3}{2}$, $AC \rightarrow y = 3x - 1$, $BC \rightarrow y = -x + 4$

$\rightarrow A = \begin{vmatrix} 1 \\ 1 \end{vmatrix}$, $B \begin{vmatrix} 5 \\ -1 \end{vmatrix}$, $C \begin{vmatrix} \frac{5}{2} \\ \frac{3}{2} \end{vmatrix}$ — وسط B, C $\rightarrow M = \begin{vmatrix} \frac{10}{4} \\ \frac{3}{4} \end{vmatrix}$

$AH \rightarrow \frac{|1+1-4|}{\sqrt{2}} = \sqrt{2}$, $AM = \sqrt{\left(\frac{7}{4}\right)^2 + \left(\frac{1}{4}\right)^2} = \frac{\sqrt{50}}{4} = \frac{5\sqrt{2}}{4}$

$\rightarrow \frac{AM}{AH} = \frac{\frac{5\sqrt{2}}{4}}{\sqrt{2}} = \frac{5}{4}$ ✓

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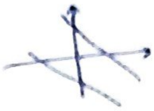
۷ — (۲)

$m = -\frac{1}{2}x \longrightarrow y = -\frac{1}{2}x + b \longrightarrow 2y + x - 2b$



$d = \frac{|-2b|}{\sqrt{5}} = 2\sqrt{5} \rightarrow b = 5$ یا -5

$y = -\frac{1}{2}x + 5 \xrightarrow{y=0} x = 10 \longrightarrow d = \sqrt{125} = \boxed{5\sqrt{5}}$ ✓

$y = -\frac{1}{2}x - 5 \xrightarrow{y=0} x = -10 \longrightarrow d = \sqrt{125}$

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۸ — (۱)

$y = (1-m)x + 2$, $y = \frac{4}{m}x + 2$

جواب صفحه بعد...

$\rightarrow H = 2 \longrightarrow \frac{5}{2}S = \frac{2 \times \text{قاعده}}{2} \longrightarrow$ قاعده (طول اضلاع) $= \frac{5}{2}$ — طول از مبدا $\rightarrow 0 = \frac{4}{m}x + 2 \rightarrow x = -\frac{m}{2}$; $0 = (1-m)x + 2 \rightarrow x = \frac{2}{m-1}$

$\rightarrow \left|\frac{2}{m+1} - \frac{m}{2}\right| = \frac{5}{2}$: $\frac{4}{m+1} - m = 5 \rightarrow 4 - m^2 - m = 5m + 5 \rightarrow m^2 + 6m + 1 = 0$ ✗ ; $\frac{4}{m+1} - m = -5 \rightarrow 4 - m^2 - m = -5m - 5 \rightarrow m^2 - 4m - 9 = 0$ ✗

$\rightarrow \left|\frac{2}{m+1} + \frac{m}{2}\right| = \frac{5}{2}$: $\frac{4}{m+1} + m = 5 \rightarrow 4 + m^2 + m = 5m + 5 \rightarrow m^2 - 4m - 1 = 0$ ✗ ; $\frac{4}{m+1} + m = -5 \rightarrow 4 + m^2 + m = -5m - 5 \rightarrow m^2 + 6m + 9 = 0 \rightarrow m = -3$ ✓

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۹ — (۲)

$y = 2x - 3 \longrightarrow \begin{vmatrix} 0 \\ -3 \end{vmatrix}$ قرینه نسبت به $\begin{vmatrix} 2 \\ -2 \end{vmatrix} \rightarrow \begin{vmatrix} 4 \\ -1 \end{vmatrix} \longrightarrow m = 2$

$\rightarrow \boxed{y = 2x - 9}$ ✓

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۱۰ — (۱/۷۵)

$y = x + 5$, $A(1,2) \xrightarrow{\text{خط عمود}} y = -x + 3$

$x + 5 = -x + 3 \longrightarrow 2x = -2 \longrightarrow \boxed{x = -1}, y = +4 \rightarrow \begin{vmatrix} -1 \\ 4 \end{vmatrix}$

$\begin{vmatrix} 1 \\ 2 \end{vmatrix} \xrightarrow{\text{قرینه نسبت به } \begin{vmatrix} -1 \\ 4 \end{vmatrix}} \begin{vmatrix} -3 \\ 6 \end{vmatrix}$ ✓ $\longrightarrow 2b - a = 15$

۸

ارتفاع = ۲
(خودت درست بنویس)

$y = \frac{۴}{m}x + ۲ \xrightarrow{y=۰} x = \frac{-m}{۲}$

$y = (۱-m)x + ۲ \xrightarrow{y=۰} x = \frac{۲}{m-۱}$

$S_{\text{قاعده}} = \left| \frac{۲}{m-۱} - (-\frac{m}{۲}) \right|$

$S_{\Delta} = \left| \frac{m^۲ - m + ۴}{۲(m-۱)} \right| \times ۲ \times \frac{۱}{۲} = \frac{۵}{۲} \rightarrow$

- معادله اول: $m = ۳$
- معادله دوم: $\Delta > ۰ \rightarrow \frac{c}{a} = -۱$

۳- حاصل ضرب مقادیر m ←