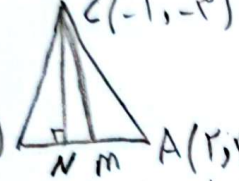


نام و نام خانوادگی: فرهاد فرزین	پاسخنامه تشریحی تکلیف شماره ۱۶ کلاس: (۵۵) بی بی
$A(1, -6) \rightarrow m_2 = \frac{1 - (-6)}{2 - 1} = 7 \xrightarrow{\text{مرد}} \frac{1}{7}$ $B(2, 1)$ نقطه میانی $\rightarrow (\frac{1+2}{2}, \frac{-6+1}{2}) \rightarrow (\frac{3}{2}, -\frac{5}{2}) \rightarrow y - 1 = \frac{1}{7}(x - 2)$ $\rightarrow y = \frac{1}{7}x + \frac{5}{7} \checkmark$	(۲) ۱
 $C(-1, -3)$ $A(2, 3)$ $B(1, 1)$ $M(\frac{1+2}{2}, \frac{1+3}{2}) \rightarrow (1.5, 2)$ $N(\frac{-1+2}{2}, \frac{-3+3}{2}) \rightarrow (0.5, 0)$ $m_{AB} = \frac{3-1}{2-1} = 2 \Rightarrow y - 1 = 2(x - 1) \Rightarrow y = 2x - 1$ $m_{AC} = \frac{3+3}{2+1} = 2 \Rightarrow y - 3 = 2(x - 2) \Rightarrow y = 2x - 1$ $\Rightarrow y = 2x - 1$	(۲) ۲
$y - x = 7 \rightarrow y = \frac{1}{7}x + \frac{7}{7}$ $y = 2x + 5 \rightarrow y = \frac{1}{7}x + \frac{1}{7}$ $d = \frac{ \frac{7}{7} - \frac{1}{7} }{\sqrt{1 + \frac{1}{49}}} = \frac{\frac{6}{7}}{\sqrt{\frac{50}{49}}} = \frac{6}{7} \cdot \frac{7}{\sqrt{50}} = \frac{6}{\sqrt{50}}$ $\text{مساحت} = \pi r^2 = \pi (\frac{6}{\sqrt{50}})^2 = \pi \cdot \frac{36}{50} = \frac{36\pi}{50} \checkmark$	(۲) ۳
$BC = \sqrt{(-1-2)^2 + (-3-3)^2} = \sqrt{25 + 36} = \sqrt{61} \checkmark$ $\text{مساحت} = \frac{1}{2} (2(7-3) + (-1)(3-1) + (-1)(1-7)) = \frac{1}{2} (8 - 2 + 6) = 6$ $\Rightarrow AH = \frac{2 \times 6}{8} = \frac{12}{8} = 1.5 \checkmark$ $\rightarrow BC = AH = 1.5 \checkmark$	(۲) ۴
$(2m-2)x + (5-m)y - 7 = 0 \rightarrow m_1 = \frac{-2m+2}{5-m} \rightarrow m \neq 5$ $(m+1)x + (2m-1)y + 1 = 0 \rightarrow m_2 = \frac{-m-1}{2m-1} \rightarrow m \neq \frac{1}{2}$ $m_1 \cdot m_2 = 1 \Rightarrow (\frac{-2m+2}{5-m}) (\frac{-m-1}{2m-1}) = 1$ $\frac{(2m-2)(m+1)}{(5-m)(2m-1)} = 1 \Rightarrow 2m^2 + 13m + 11 = 0 \Rightarrow \Delta < 0 \checkmark$	(۲) ۵

$$\rightarrow AM = \sqrt{\left(\frac{1}{2} - 1\right)^2 + \left(\frac{5}{2} - 1\right)^2} = \frac{\sqrt{5}}{2} \quad AH = \frac{|AA' + b' + c|}{\sqrt{a^2 + b^2}} = \frac{1 + 5}{\sqrt{5}} = \frac{6}{\sqrt{5}} \quad \checkmark$$

$$\begin{cases} AB = x + y = 5 \\ AC = y + 2x - 1 \end{cases} \xrightarrow{AB=AC} x + 2(x-1) = 5 \Rightarrow x + 2x - 2 = 5 \Rightarrow 3x = 7 \Rightarrow x = \frac{7}{3}, y = 1$$

خواص سوال: $\frac{AM}{AH} = \frac{a}{r}$

$\rightarrow AB, BC = (x-y) + y = 5 \rightarrow x + y = 5 \rightarrow y = 5 - x$
 $x = 1 + \sqrt{5} \rightarrow B = (5, -1)$

$\rightarrow AC, BC = x + 2x - 1 \rightarrow 2x = 5 \Rightarrow x = \frac{5}{2}, y = \frac{5}{2}$

$$m = -\frac{1}{r}$$

$y = -\frac{1}{r}x + b$ (1, 0) $\rightarrow \sqrt{(1-1)^2 + (0-0)^2} = \sqrt{0} = 0$ $\checkmark$

$y = -\frac{1}{r}x + c$ (0, 0) $\rightarrow x = 1, y = 0$

$\rightarrow \frac{|c|}{\sqrt{1+m^2}} = \sqrt{5} \Rightarrow \frac{|c|}{\sqrt{1+\frac{1}{r^2}}} = \frac{r|c|}{\sqrt{r^2+1}} \Rightarrow r|c| = 1 \Rightarrow |c| = \frac{1}{r} \Rightarrow c = \pm \frac{1}{r}$

$$my - fx = 2m \rightarrow y = \frac{fx}{m} + 2 \xrightarrow{y=0} x_1 = \left(-\frac{m}{f}, 0\right)$$

$$y + mx = x + 2 \rightarrow y = x(-1-m) + 2 \xrightarrow{y=0} x_2 = \left(-\frac{2}{m+1}, 0\right)$$

$$S = \frac{1}{r} \times 2|x_2 - x_1| \rightarrow \frac{2}{r} \left| -\frac{m}{f} - \frac{2}{m+1} \right| = \frac{2}{r} \left| -\frac{m}{f} - \frac{2}{m+1} \right|$$

$\rightarrow \Delta m - \delta = -m^2 + m - f \rightarrow m^2 + fm - 1 = 0 \rightarrow S = 1, (m-5)^2 = 0 \Rightarrow m = 5$
 $-\Delta m + \delta = -m^2 + m - f \rightarrow m^2 - 9m + 9 = 0 \rightarrow S = 3(-1) = -3 \quad \checkmark$

$$y = 2x - 5 \rightarrow M = (2, -5)$$

$\rightarrow x = 2a - 2, y = 2b - 5$

$x = f - a, y = f - y \rightarrow y = f - (2a - 2) = f - 2a + 2$
 $\Rightarrow -2a - 1 \xrightarrow{2f-a} -2(f-a) - 1 = -2f + 2a - 1 = 2a - 9 \quad \checkmark$

$A(1, 2)$

$y = x + 5 \rightarrow A' \quad 2A' = 2A_B - A_A = -5 - 1 = -6 \quad \checkmark$
 $2A' = 2y_B - y_A = 1 - 2 = -1 \quad \checkmark$

$2b - a = ? \rightarrow 2(4) - (-2) = 10 \quad \checkmark$

$y - 2 = x + 1 \rightarrow y = x + 3$
 $\rightarrow -x + 5, x + 5 \rightarrow 2x = 5 \rightarrow \boxed{x = 1}, \boxed{y = 3}$