نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ...۱۷... کلاس ...یازدهم... ..... ۱۹,۲۵

۱

$A(4,-4)$ ، $B(2,8)$: معادله‌ی عمود منصف

$M = \left| \frac{4+2}{2} = 3 \right.$ ، $\left. \frac{-4+8}{2} = 1 \right.$ ← $(3,1)$

$m = \frac{-4-8}{4-2} = -6 \rightarrow m' = \frac{-1}{m} = \frac{1}{6}$

$y - y_0 = m'(x - x_0) : y - 1 = \frac{1}{6}(x-3) : y = \frac{1}{6}x + \frac{5}{6}$

۲

$A(3,1)$ ، $B(-4,6)$ ، $C(-1,3)$ → $\triangle ABC$: $d_{BC} - d_{AH} = ?$

$d_{BC} = \sqrt{9+16} = 5$

$m_{BC} = \frac{6-3}{-4+1} = \frac{-3}{3} \rightarrow y - 3 = \frac{-3}{3}(x+1) : y = \frac{-3}{3}x + \frac{5}{3} : y + \frac{3}{3}x - \frac{5}{3} = 0$

$d_{AH} = \frac{|3 + 3 - \frac{5}{3}|}{\sqrt{1+\frac{9}{9}}} = \frac{\frac{10}{3}}{\frac{5}{3}} = 2$

$\Rightarrow 5 - 2 = \frac{3}{3}$

۳

$2y = ax + 2$ ، $x - 2y = 7$ $\Rightarrow \begin{cases} 2y - ax = 2 \\ 2y - x = 14 \end{cases}$

$\Rightarrow d = \text{فاصله} = \frac{|14-2|}{\sqrt{16+4}} = \frac{12}{\sqrt{20}} \rightarrow \sin^2\theta = \frac{3}{5}$

$\Rightarrow S = 12\pi^2 \rightarrow \frac{9}{5}\pi$

۴

$m_{AB} = \frac{3-1}{4-2} = 1 \rightarrow y - 1 = -(x-4) \Rightarrow y = -x + 5$: $d_{CH} = \frac{|-1+3-5|}{\sqrt{2}} = \frac{9}{\sqrt{2}}$

$y + x - 5 = 0$

$M = \left| \frac{2+4}{2} = 3 \right.$ ، $\left. \frac{2+1}{2} = 2 \right.$: $M(3,2) \rightarrow d_{CM} = \sqrt{16+25} = \sqrt{41}$

$\Rightarrow x = \sqrt{41 - \frac{81}{2}} = \frac{\sqrt{2}}{2}$: HM طول

۵

$(2m-2)x + (5-m)y - 7 = 0$

$(m+1)x - (2m-4)y + 1 = 0$

$\rightarrow a = \frac{-2m+2}{5-m}$

$\rightarrow a' = \frac{m+1}{2m-4}$

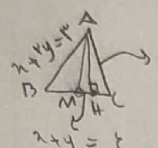
خطوط $\rightarrow m = ?$

$\Rightarrow a \cdot a' = -1 : \frac{-2m+2}{5-m} \times \frac{m+1}{2m-4} = -1$

$\Rightarrow -2m^2 - m + 2 = 2m^2 - 14m + 20 : 3m^2 - 13m + 18 = 0 \rightarrow \Delta < 0$

$\Rightarrow$

به ازای هیچ مقدار m ای این ۲ خط بر هم عمود نیستند ✗



$y=2x-1$

$2x-1=4-x \rightarrow 3x=5 \rightarrow x=\frac{5}{3}, y=\frac{7}{3} \rightarrow (\frac{5}{3},\frac{7}{3})$

$2x-x=1-2x \rightarrow x=0, y=-1 \rightarrow B(0,-1)$

$\frac{AM}{AH}=?$

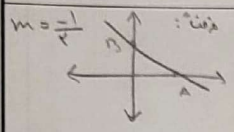
$AM=\sqrt{(1-\frac{5}{3})^2+(1-\frac{7}{3})^2}=\sqrt{\frac{4}{9}+\frac{1}{9}}=\frac{\sqrt{5}}{3}$

$M\left|\begin{matrix}\frac{0+5}{2}=\frac{5}{2} \\ \frac{-1+7}{2}=\frac{3}{2}\end{matrix}\right. : M(\frac{5}{2},\frac{3}{2})$

$AH=\frac{|1+1+1|}{\sqrt{2}}=\sqrt{3}$

$\frac{AM}{AH}=\frac{\frac{\sqrt{5}}{3}}{\sqrt{3}}=\frac{\sqrt{5}}{3}$

(۶)



$m=\frac{-1}{2}$ شیب

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

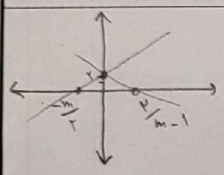
$\frac{|c|}{\sqrt{1+\frac{1}{4}}}=\sqrt{5} \Rightarrow |c|=5 \rightarrow c=\pm 5$

$A: y=0 \rightarrow x=2c \quad (2c,0)$

$B: x=0 \rightarrow y=c \quad (0,c)$

$d_{AB}=\sqrt{4c^2+c^2}=\sqrt{5c^2}=5\sqrt{5}$

(۷)



$my-4x=4m \Rightarrow \begin{cases}x=0 \rightarrow y=4 \\ y=0 \rightarrow x=-m\end{cases}$

$y+mx=x+2 \Rightarrow \begin{cases}x=0 \rightarrow y=2 \\ y=0 \rightarrow x=\frac{2}{m-1}\end{cases}$

$S_\Delta=\left|\frac{m^2-m+4}{2(m-1)}\right| \times 2 \times \frac{1}{2}=\frac{5}{2}$

$\Rightarrow m=3, \quad m^2+2m-1=0$

$\frac{c}{a}=-1$

$3x-1=-3$

$x(m-1)=2$

$\left(\frac{-m}{2}-\frac{2}{m-1}\right)\times 2 \times \frac{1}{2}=\frac{5}{2} : \frac{-m(m-1)-4}{2(m-1)}=\frac{5}{2} \Rightarrow -m^2+m-4=5m-5$

$\Rightarrow m^2+4m-1=0 \rightarrow P=\frac{c}{a}=-1$

(۱,۲۵)

(۸)

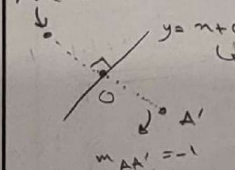
$y=2x-4 \xrightarrow{\text{قرینه}} M(x_0,-1)$

$\Rightarrow x'=3-x \quad : x=3-x' \quad \Rightarrow -1-y'=2(3-x')-4$

$\Rightarrow y'=-3-y \quad : y=-3-y' \quad \Rightarrow y'=2x'-9$

(۹)

$A(1,2) \xrightarrow{\text{قرینه}} y=x+a \rightarrow A'(a,b) : 2b-a=?$



$y=x+a$ به ازای $m=1$

$m_{AA'}=-1$

$y-2=-1(x-1) \rightarrow y=-x+3$

$y=y : -x+3=x+a \rightarrow x=\frac{3-a}{2}, y=\frac{3+a}{2}$

$\Rightarrow O(\frac{3-a}{2},\frac{3+a}{2})$

$x_{A'}+1=-2 \rightarrow x_{A'}=-3$

$y_{A'}+2=8 \rightarrow y_{A'}=6$

$A'(-3,6) \Rightarrow \begin{cases}a=-3 \\ b=6\end{cases} \Rightarrow 2b-a=\frac{15}{}$

(۱۰)