

نام و نام خانوادگی آریین انوری پاسخنامه تشریحی تکلیف شماره ۱۹ کلاس A

$$M\left(\frac{f+1}{1}, \frac{1-y}{1}\right) \rightarrow M(1, 1)$$

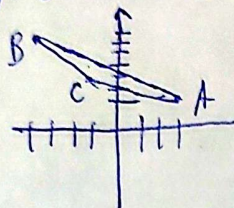
$$m_{AB} = \frac{1-y}{1-f} = -1 \rightarrow m_{\text{عمود}} = \frac{1}{1}$$

$$y-1 = \frac{1}{1}(x-1) \rightarrow y = \frac{1}{1}x + \frac{f}{1}$$

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



$$BC = \sqrt{(1-(-1))^2 + (1-3)^2} = \sqrt{4+4} = \sqrt{8} = 2\sqrt{2}$$

$$m = \frac{3-1}{-1-1} = \frac{2}{-2} = -1 \rightarrow y-1 = -1(x+1) \rightarrow x+y-2=0$$

$$AH = d = \frac{|1(-2)+1-2|}{\sqrt{1+1}} = \frac{2}{\sqrt{2}} = \sqrt{2} \quad BC-AH = 2\sqrt{2} - \sqrt{2} = \sqrt{2}$$

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$$\begin{aligned} &fy - ax = 1 \\ &1y - x = 1 \Rightarrow \frac{f}{1} = \frac{-a}{-1} \Rightarrow a = 1 \Rightarrow \begin{aligned} &fy - 1x = 1 \\ &1y - x = 1 \end{aligned} \rightarrow d = \frac{|1(-1)-1|}{\sqrt{1+1}} = \frac{2}{\sqrt{2}} = \sqrt{2} \end{aligned}$$

$$\pi r^2 = S = \pi \times \left(\frac{\sqrt{2}}{2}\right)^2 = \frac{\pi}{2}$$

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$$M_{AB} = \left(\frac{1+f}{1}, \frac{1+y}{1}\right) \rightarrow M(1, 1) \quad m_{AB} = \frac{1-y}{1-f} = -1 \rightarrow y-1 = -1(x-1)$$

$$\rightarrow y = -x+2 \quad m_{CH} = 1 \rightarrow y+1 = 1(x+1) \rightarrow y = x$$

$$y+x=2$$

$$y-x=1$$

$$\rightarrow y = \frac{3}{2}, x = \frac{1}{2} \rightarrow H\left(\frac{1}{2}, \frac{3}{2}\right) \quad MH = \sqrt{\left(1-\frac{1}{2}\right)^2 + \left(1-\frac{3}{2}\right)^2} = \sqrt{\frac{1}{2}}$$

$$\rightarrow \frac{\sqrt{1/2}}{1} = MH$$

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

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

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

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

$$m = -\frac{1}{m'} \rightarrow \frac{1-1m}{m+1} = \frac{1-1m}{1-m-1} \rightarrow (1-m)(1-1m) = (m+1)(1-1m) \rightarrow 1-m^2-1+m = 1-m^2-1+m$$

$$\rightarrow 1-m^2-1+m+1 \rightarrow \Delta < 0 \Rightarrow \text{مقدارهای } m \text{ وجود ندارد}$$

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$$A \rightarrow \begin{cases} nx+py=r \\ px-y=1 \end{cases} \quad n = \frac{-1 \cdot p}{1 \cdot p - (-1)} = \frac{-p}{p+1} = -1, y = \frac{1 \cdot p}{1 \cdot p - (-1)} = \frac{p}{p+1} = 1$$

$$B \rightarrow B(\omega, -1) \cdot C \rightarrow \left(\frac{\omega}{p}, \frac{r}{p} \right)$$

$$M_{BC} = \left(\frac{0}{p}, \frac{r}{p} \right) \quad m_{BC} = \frac{\frac{r}{p} - (-1)}{\frac{\omega}{p} - (-1)} = -1 \quad y = -x + r, y - 1 = 1(n-1) \rightarrow y = n$$

$$\Rightarrow n = -x + r \rightarrow r = x + 1 \Rightarrow x = r, y = 1 \Rightarrow H(r, 1) \quad AH = \sqrt{r^2}, AM = \frac{\omega \sqrt{r}}{p} \quad \frac{AM}{AH} = \frac{\omega \sqrt{r}}{p \sqrt{r}} = \frac{\omega}{p}$$

$$m = -\frac{1}{r} \rightarrow y = -\frac{1}{r}x + b \rightarrow \frac{1}{r}x + y - b = 0$$

$$d = \frac{|c|}{\sqrt{A^2+B^2}} \rightarrow d = \frac{|b|}{\sqrt{1+\frac{1}{r^2}}} = \frac{|b|}{\sqrt{\frac{r^2+1}{r^2}}} = \frac{r|b|}{\sqrt{r^2+1}} \rightarrow d = \frac{r|b|}{\sqrt{r^2+1}} \xrightarrow{d=\sqrt{r^2+1}} \frac{r|b|}{\sqrt{r^2+1}} = r\sqrt{r^2+1}$$

$$|b| = \omega \rightarrow y = -\frac{1}{r}x \pm \omega \quad B = (0, b), A(r, b, 0)$$

$$AB = \sqrt{r^2 b^2} = |b| \sqrt{r^2} \rightarrow AB = \omega \sqrt{r^2}$$

$$my - rx = rm \quad y = n(1-m) + r \rightarrow m(n(1-m) + r) - rn = rm$$

$$\rightarrow n = 0, y = r \quad A = (0, r) \quad m = \text{حاصل ضرب} = -r$$

$$y = 0 \rightarrow m(0) - rn = rm \rightarrow n = -\frac{m}{r} \rightarrow B\left(-\frac{m}{r}, 0\right) \quad 0 + mn = n + r \rightarrow n = \frac{r}{m-1} \quad C\left(\frac{r}{m-1}, 0\right)$$

$$S = \frac{1}{r} \times |BC| \times r = |BC| \rightarrow |BC| = \left| -\frac{m}{r} - \frac{r}{m-1} \right| \rightarrow \left| -\frac{m}{r} - \frac{r}{m-1} \right| = \frac{\omega}{r}$$

$$-\frac{m}{r} - \frac{r}{m-1} = \frac{\omega}{r} \rightarrow m^2 + rm - 1 = 0 \rightarrow m = \frac{-r \pm \sqrt{r^2+4}}{2} \quad -\frac{m}{r} - \frac{r}{m-1} = -\frac{\omega}{r} \rightarrow (m^2)^{\frac{r}{m-1}} = 0 \rightarrow m = \frac{\omega}{r}$$

$$y = rx - r \quad M(r, -r)$$

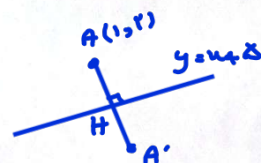
$$n = 0 \rightarrow y = -r \rightarrow P_1(0, -r) \quad \begin{cases} P' = PM - P \rightarrow P_1' = P \times (-1) = r \\ y_1' = -1 \end{cases} \quad P_1' = (r, -1)$$

$$n = 1 \rightarrow y = -1 \rightarrow P_r(1, -1)$$

$$m = \frac{-r+1}{r-1} = r \rightarrow y+1 = r(x-r) \rightarrow y = rx - r$$

$$m_{AH} = -1 \rightarrow AH: y-r = -(x-1) \rightarrow y = -x+r$$

$$\begin{cases} y = x+a \\ y = -x+r \end{cases} \rightarrow H(-1, r) : A', A \text{ متماثلين}$$



$$\frac{1+a}{r} = -1 \rightarrow a = -r$$

$$\frac{r+b}{r} = r \rightarrow b = r^2$$

$$\rightarrow rb - a = 1$$