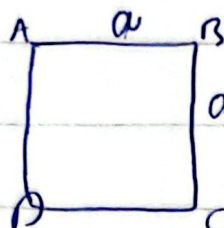


یاز (مردم) سید بنیاد (C)

عسل کامری

A(-2, k)

B(ξ, m)



سوال ←

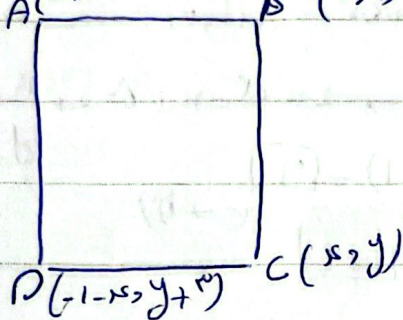
$$m = \frac{k-m}{-2-\xi} = -\frac{1}{2} = \frac{k-m}{-4}$$

$$C \rightarrow \sqrt{(\xi+2)^2 + (m-k)^2} = \sqrt{3+9} \sqrt{\xi^2}$$

$$\xi = \sqrt{\xi^2} \text{ and } \sqrt{\xi^2} \text{ and } \boxed{\xi^2}$$

A(-2, ξ)

B(3, η)



سوال ←

$$\frac{x-1}{\xi} = \frac{\eta-x}{\eta} \rightarrow x-1 = \eta - x \rightarrow 2x = \eta + 1 \rightarrow x = \frac{\eta+1}{2}$$

$$\frac{\xi+y}{\eta} = \frac{\eta+y}{\eta} \rightarrow \xi+y = \eta+y \rightarrow \xi = \eta$$

$$\rightarrow m_{AB} = \frac{\xi-1}{-1-\eta} = \frac{\eta}{\xi} \rightarrow m_{BC} = \frac{\xi}{\eta}$$

$$\rightarrow \frac{\xi}{\eta} = \frac{1-\eta}{\eta} \rightarrow \eta = -1$$

$$AB = \sqrt{1+9} = \sqrt{10} \text{ and } BC = \sqrt{\xi^2 + 9} = \frac{\eta}{\xi} \rightarrow \eta = \sqrt{10} \text{ and } \boxed{\xi^2}$$

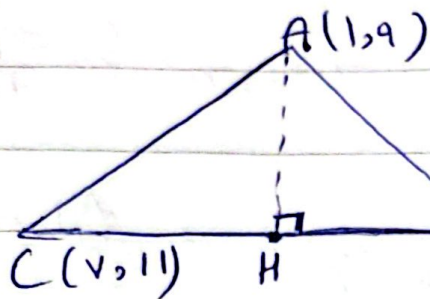
$$\frac{-2m}{m^2-1} = \sqrt{3} \rightarrow \sqrt{3}m^2 - \sqrt{3} = -2m$$

سوال ←

$$\rightarrow \sqrt{3}m^2 + 2m - \sqrt{3} = 0 \rightarrow m^2 + 2m - 3 = 0 \rightarrow (m+3)(m-1) = 0$$

$$m = \frac{3}{\sqrt{3}} = \sqrt{3}$$

$$m = \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3} \rightarrow \frac{\sqrt{3}}{3} - 1 = \frac{\sqrt{3}-3}{3}$$

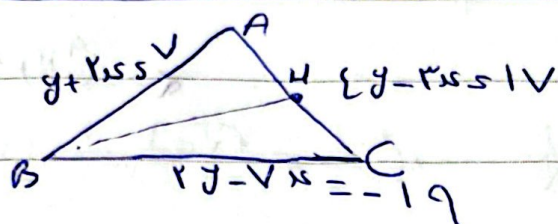


سوال ←

$$m_{BC} = \frac{11-3}{7-3} = 2$$

$$\rightarrow y = 2x - 3 \rightarrow y - 2x + 3 = 0$$

$$\text{فاصله نقطه از خط} \rightarrow \frac{|1 - 2(1) + 3|}{\sqrt{2^2 + (-1)^2}} = \frac{2}{\sqrt{5}} = \frac{2\sqrt{5}}{5}$$

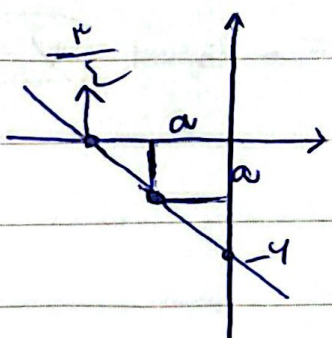


سوال ←

$$BH = ?$$

$$\begin{cases} y + 2x = 5 \\ y - 3x = 14 \end{cases} \rightarrow \begin{cases} -2y - 2x = -10 \\ y - 3x = 14 \end{cases} \rightarrow -11x = -34 \rightarrow x = \frac{34}{11}, y = \frac{1}{11}$$

$$AC \text{ از } B \text{ فاصله} = \frac{|-14 - 9 + 2|}{\sqrt{2^2 + 1^2}} = \frac{21}{\sqrt{5}}$$



سوال ←

$$\frac{y-a}{4} = \frac{a}{\frac{1}{\sqrt{2}}} \rightarrow \frac{y-a}{4} = \frac{a\sqrt{2}}{1} \rightarrow y-a = 4a\sqrt{2} \rightarrow a = \frac{y}{1+4\sqrt{2}}$$

$$\frac{1}{a} = -\frac{a}{1} + \frac{1}{a-1} \rightarrow a^2 = -1 \rightarrow a^2 = 1 \rightarrow a = \pm 1$$

$$a = 1 \rightarrow \begin{cases} y - x = 1 \rightarrow (1, 2) \\ y - x = 0 \rightarrow (1, 1) \end{cases} \rightarrow 1 \neq 0 \rightarrow \text{OK}$$

$$a = -1 \rightarrow \begin{cases} y + x = 1 \rightarrow (1, 2) \\ -y - x = -2 \rightarrow (1, 2) \end{cases} \rightarrow a = \frac{1}{\sqrt{2}}$$

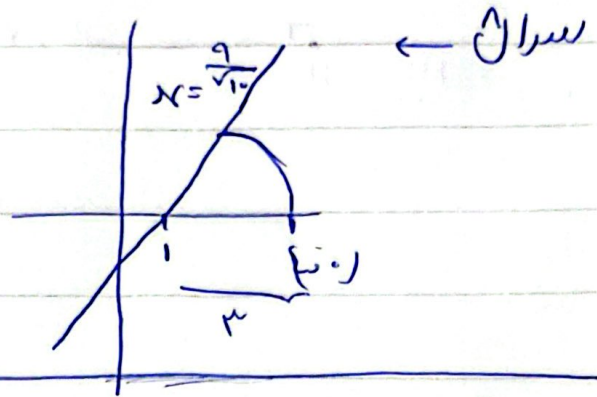
Scanned with

$$b^2 + \frac{1}{r} = r^2 \rightarrow b^2 = \frac{r^2}{r} \rightarrow b = \frac{r}{\sqrt{r}} \rightarrow S_{ABCD} = \frac{r}{\sqrt{r}} \times \frac{1}{\sqrt{r}} = \left(\frac{r}{r}\right)$$

$$a = \frac{|x-1|}{\sqrt{1+9}} = \frac{r}{\sqrt{10}}$$

$$x = \sqrt{a - \frac{a}{10}} = \sqrt{\frac{11}{10}} = \frac{r}{\sqrt{10}}$$

$$S = \frac{1}{2} \times \frac{r}{\sqrt{10}} \times \frac{r}{\sqrt{10}} = \frac{1}{2} \times \frac{r^2}{10}$$



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

$$\Rightarrow \sqrt{\left(-\frac{1}{r} + \frac{1}{r}\right)^2 + (b-a)^2} = \frac{1}{r} \rightarrow \sqrt{r} \leq \frac{1}{r} \Rightarrow \sqrt{r} \leq \frac{1}{r}$$

$$C_{AB} = \sqrt{(0+1)^2 + (0+1)^2} = \sqrt{2}$$

سران

$$m_{OA} = \frac{1}{r} \rightarrow m_{AC} = -\frac{1}{m_{OA}} = -\frac{r}{1} \rightarrow \frac{-1-B}{-1-A} = -\frac{r}{1}$$

$$\rightarrow B = -1, A = -r$$

$$C(-1, -1) \rightarrow AB = -\sqrt{1+1} = \sqrt{2}$$