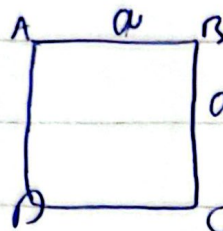


عسل کا مرصہ ۲۰ یار (مرصہ) سے پہلے کا (C)

A(-2, k)
B(ξ, m)

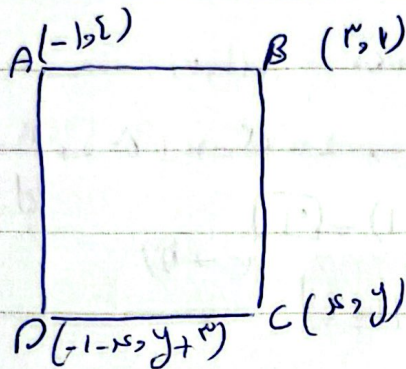


سوال ←

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

$$C \rightarrow \sqrt{(\xi+2)^2 + (m-k)^2} = \sqrt{3+9} \sqrt{10}$$

$$\sum \sqrt{10} \times \sqrt{10} \times \boxed{10} \quad (2)$$



سوال ←

$$\frac{x-1}{2} = \frac{4-y}{2} \rightarrow x-1=4-y \rightarrow 2x=5+y \rightarrow \frac{x}{2} = \frac{5+y}{2} \quad (1)$$

$$\frac{\xi+y}{2} = \frac{y+2}{2} \rightarrow \xi+y=2+y \rightarrow \xi=2$$

$$\rightarrow m_{AB} = \frac{2-1}{-1-2} = \frac{1}{-3} = -\frac{1}{3} \rightarrow m_{BC} = \frac{2}{3}$$

$$\rightarrow \frac{2}{3} = \frac{1-y}{2} \rightarrow y = -1$$

$$AB = \sqrt{1+9} = \sqrt{10} \quad BC = \sqrt{4+9} = \sqrt{13} \rightarrow \text{Area} = \frac{1}{2} \times \sqrt{10} \times \sqrt{13} \times \boxed{10}$$

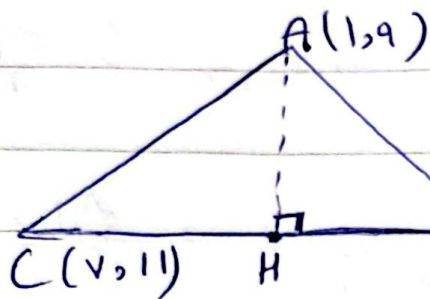
$$\frac{-2m}{m^2-1} = \sqrt{3} \rightarrow \sqrt{3}m^2 - \sqrt{3} = -2m$$

سوال ←

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

$$m = \frac{-\frac{2}{\sqrt{3}} \pm \sqrt{\frac{4}{3} + 4}}{2} = \frac{-\frac{2}{\sqrt{3}} \pm \sqrt{\frac{16}{3}}}{2}$$

$$m = \frac{-\frac{2}{\sqrt{3}} \pm \frac{4}{\sqrt{3}}}{2} = \frac{-1 \pm 2}{\sqrt{3}} = \frac{1}{\sqrt{3}} \text{ or } -\frac{3}{\sqrt{3}} = -\sqrt{3}$$



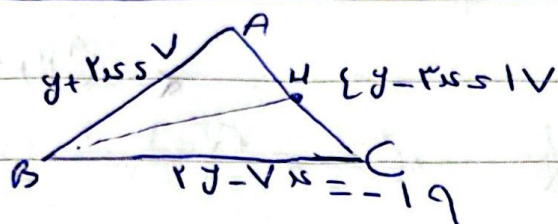
سوال ۲

۲

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

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

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



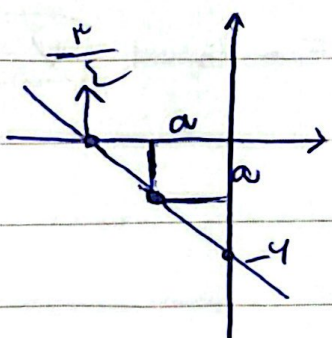
سوال ۲

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$$BH = 2$$

$$\begin{cases} y - 2x + 3 = 0 \\ y + 2x = 5 \end{cases} \rightarrow \begin{cases} -2y - 2x = -10 \\ y - 2x = -19 \end{cases} \rightarrow -11x = -33 \rightarrow x = 3, y = 1 \rightarrow B(3,1)$$

$$AC \text{ از } B \text{ فاصله} = \frac{|-19 - 9 + 2|}{\sqrt{2^2 + 1^2}} = \frac{26}{\sqrt{5}}$$



سوال ۲

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

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

$$\text{فاصله} = \sqrt{2} \times \frac{y}{1 + \sqrt{2}} = \frac{y\sqrt{2}}{1 + \sqrt{2}}$$

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

سوال ۲

۲

$$a = 1 \rightarrow \begin{cases} y - x = 1 \rightarrow (1,2) \rightarrow 2-1=1 \checkmark \\ y - x = 0 \rightarrow (1,1) \rightarrow 1-1=0 \times \end{cases}$$

$$a = -1 \rightarrow \begin{cases} y + x = 1 \rightarrow (1,0) \rightarrow 1+0=1 \checkmark \\ -y - x = -2 \rightarrow (1,2) \rightarrow -1-2=-3 \neq -2 \end{cases} \rightarrow a = \frac{1}{\sqrt{2}}$$

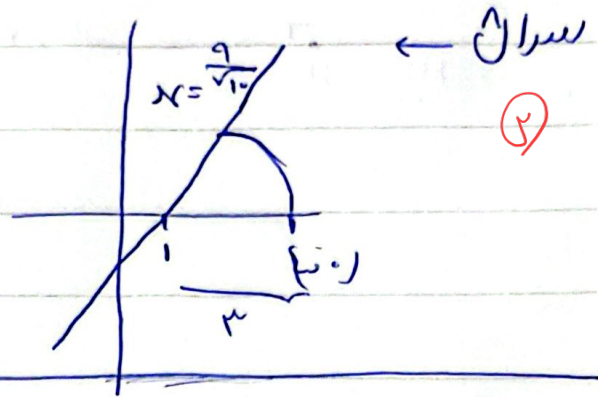
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$$b^2 + \frac{1}{r} = r^2 \rightarrow b^2 = \frac{r^2}{r} \rightarrow b = \frac{r}{\sqrt{r}} \rightarrow S_{ABCD} = \frac{r}{\sqrt{r}} \times \frac{1}{\sqrt{r}} = \left(\frac{r}{r}\right)$$

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

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

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



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

سراش

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

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

سراش

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

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

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