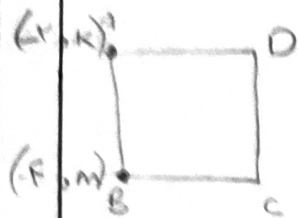


پیش فرض

مستطیل

نام خانوادگی: ...

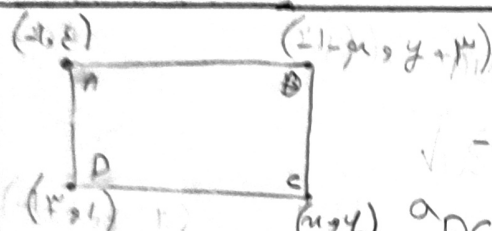
$$\frac{k-m}{-r-\varepsilon} = -\frac{1}{1} \Rightarrow \frac{k-m}{r+4} = +\frac{1}{1} \Rightarrow \boxed{k-m=3}$$



$$\rightarrow AB \cdot \sqrt{((-r-(-r))^2 + (k-m)^2)} = \sqrt{r^2 + 9} = \sqrt{10}$$

$$\sum_{\text{طول}} = (\sqrt{10})^2 = 10$$

1



$$O_{AB} = -\frac{r}{\varepsilon} \Rightarrow \text{واحد } AD, BC, \frac{\varepsilon}{r}$$

$$-1+x = r-1-x \Rightarrow x = \frac{r}{2}$$

$$O_{DC} \Rightarrow \frac{y-1}{x-r} = -\frac{r}{\varepsilon} \Rightarrow \frac{y-1}{r-\frac{r}{2}} = -\frac{r}{\varepsilon}$$

$$-r(y-1) = \varepsilon \Rightarrow y = -1 \sqrt{\varepsilon + \frac{9}{\varepsilon}} \Rightarrow BC = \frac{\varepsilon}{r}$$

$$\sqrt{r^2 + 9} = AB = \varepsilon \Rightarrow \frac{\varepsilon}{r} + \varepsilon = 10$$

2

$$rmx + (m^2-1)y = r \Rightarrow rmx - r = (1-m^2)y$$

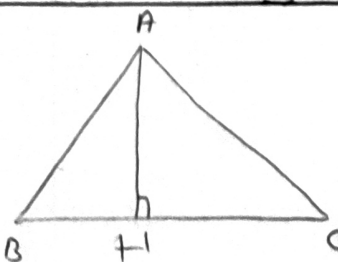
$$\Rightarrow \tan 40^\circ = \sqrt{r} \Rightarrow \frac{rm}{1-m^2} = \sqrt{r} \Rightarrow rm = \sqrt{r} - \sqrt{r}m^2$$

$$\Rightarrow \sqrt{r}m^2 + rm - \sqrt{r} = 0 \Rightarrow \Delta = r - \varepsilon(\sqrt{r})(-\sqrt{r}) = 14$$

$$\Rightarrow x_1 = \frac{-r + \varepsilon}{r\sqrt{r}} = \frac{\sqrt{r}}{r} \Rightarrow x_1 = \frac{-r - \varepsilon}{r\sqrt{r}} = \frac{-r}{r\sqrt{r}} = \frac{-1}{\sqrt{r}} = -\sqrt{r}$$

$$\text{مقدار} = \frac{\sqrt{r}}{r} + \frac{\sqrt{r}}{r} = \frac{2\sqrt{r}}{r}$$

3

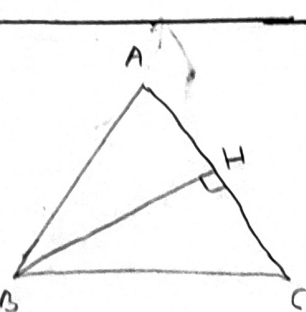


$$BC \perp AH \Rightarrow O_{BC} = \frac{11-r}{v-r} = \frac{1}{r} = r \Rightarrow r = r(r) + b$$

$$y = rm - r \rightarrow y = rm + r$$

$$AH = \frac{|9 - r + r|}{\sqrt{10}} = \frac{1 \cdot \sqrt{10}}{\sqrt{10}} = 1 \cdot \sqrt{10}$$

4



$$AB: y = -rm + v$$

$$AC: ry = rm + v$$

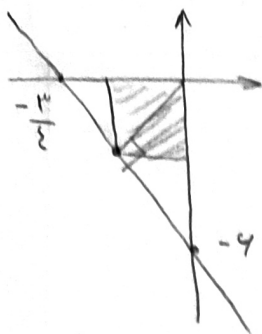
$$BC: ry = vx - 14$$

$$\begin{cases} ry + rm = 14 \\ ry - vx = -14 \end{cases}$$

$$11x = rv \Rightarrow \begin{cases} x = r \\ y = 1 \end{cases}$$

$$BH = \frac{|r - 9 - 14|}{\sqrt{10}} = \frac{+rv}{10} = 1$$

5



$$\text{داده } a = \frac{4}{-\frac{r}{r}} = -1 \Rightarrow y = -1x - 4$$

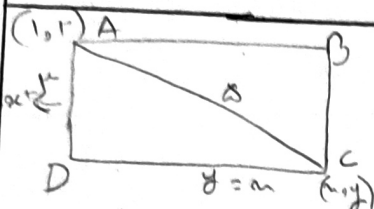
$$\left(-\frac{r}{r}, 0\right)$$

$$(0, -4) \Rightarrow +1x + 4 = y$$

6

$$\Rightarrow x = -1x + 4 \rightarrow 2x = 4 \rightarrow x = 2$$

$$\Rightarrow y = -2 - 4 = -6$$



$$ay \rightarrow x = a - 1, y = a - 1$$

$$y = \frac{1}{a}x + \frac{a-1}{a} \quad y = ax + 1 \Rightarrow a = \frac{1}{a} \Rightarrow a = 1$$

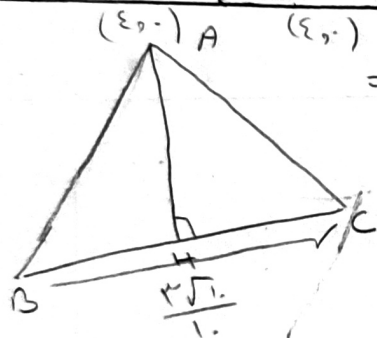
$$\rightarrow y = x + 1$$

$$\rightarrow y = x$$

$$\Rightarrow \text{مساحت} = \frac{1}{2} \times \frac{1}{\sqrt{2}} \times \frac{1}{\sqrt{2}} = \frac{1}{4}$$

$$x = \frac{1}{\sqrt{2}} + x \Rightarrow x = \frac{1}{\sqrt{2}}$$

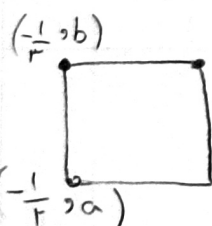
7



$$\Rightarrow AH = \frac{|1 - 0 - 1|}{\sqrt{1 + 1}} = \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{1}{\sqrt{2}}$$

$$S = \frac{\frac{1}{\sqrt{2}} \times \frac{1}{\sqrt{2}}}{2} = \frac{1}{4}$$

8



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

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

$$\left(\frac{1}{r}\right)^2 + \left(\frac{1}{r}\right)^2 = \left(\frac{1}{r}\right)^2 \Rightarrow \frac{1}{r} = \frac{1}{r} \sqrt{2}$$

$$OH = \sqrt{(-r-0)^2 + (-1, 0)^2} = \sqrt{2}$$

$$OH = OH' = \sqrt{(x-0)^2 + (y-0)^2} = \sqrt{2}$$

$$OH \text{ خط } -\frac{1}{r}x + \frac{1}{r}y = 0$$

$$OH' \text{ خط } \frac{1}{r}x + \frac{1}{r}y = 0$$

$$(x = -1), (y = 1)$$

$$-\frac{1}{r}x + \frac{1}{r}y = 0 \Rightarrow -\frac{1}{r}(-1) + \frac{1}{r}(1) = 0 \Rightarrow \frac{1}{r} + \frac{1}{r} = 0 \Rightarrow \frac{2}{r} = 0 \Rightarrow r = \infty$$

10