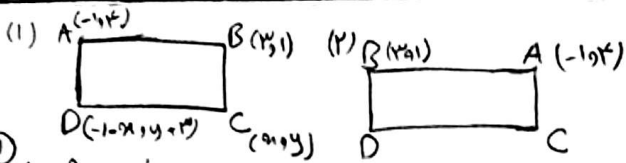


$$m = \frac{k-m}{-r-k} = -\frac{1}{r} \rightarrow k-m = r$$

$$\sqrt{\left(\frac{k+r}{r}\right)^2 + \left(\frac{k-m}{r}\right)^2} = \sqrt{k^2} = \sqrt{3}\sqrt{3} \Rightarrow S = (\sqrt{3}\sqrt{3})^2 = 9$$



$$-1+r = r-y$$

$$r = \frac{r}{r}$$

$$r+y = y+r \Rightarrow \begin{cases} m_{AB} = \frac{1-r}{r+1} = -\frac{r}{r} \\ m_{AC} = \frac{1-y}{r} = \frac{r-y}{r} \end{cases} \xrightarrow{r=y} \frac{r-y}{r} = \frac{r}{r} \rightarrow y = -1 \Rightarrow C = \left(\frac{r}{r}, -1\right) = (1, -1)$$

$$AB = \sqrt{(-r)^2 + (r)^2} = \sqrt{2} \rightarrow p = r\left(\omega + \frac{\omega}{r}\right) = \sqrt{2}$$

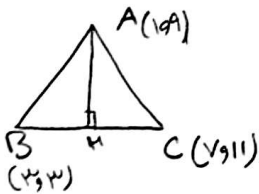
$$BC = \sqrt{\left(\frac{r}{r}\right)^2 + (r)^2} = \frac{\omega}{r}$$

$$(2) -r-r = r+r \rightarrow r = -\frac{\omega}{r}$$

$$y+1 = y+r \rightarrow r = 1$$

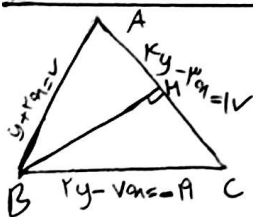
پس کلاً این شکل صحیح نادر

$$m = \tan 40^\circ = \sqrt{3} \Rightarrow \frac{-rm}{m^2-1} = \sqrt{3} \rightarrow \sqrt{3}m^2 + rm - \sqrt{3} = 0 \xrightarrow{\times \sqrt{3}} 3m^2 + r\sqrt{3}m - 3 = 0 \Rightarrow \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{r^2+36}}{3} = \frac{r\sqrt{3}}{3}$$



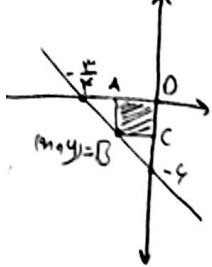
$$m_{BC} = \frac{1-3}{3-3} = r \rightarrow y = rx + b \rightarrow b = -3 \Rightarrow y = rx - 3$$

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



$$-r\alpha + v = \frac{v\alpha-19}{r} \rightarrow \alpha = r, y = 1$$

$$BH = \frac{|(r \times 1) + (-r \times 3) - 10|}{\sqrt{14+9}} = \frac{r}{\omega}$$



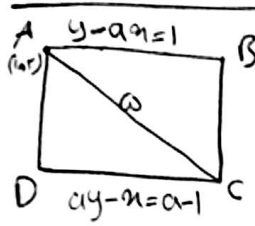
$$m = \frac{-1-0}{0+\frac{1}{4}} = -1 \Rightarrow y = -1x - 1 \Rightarrow B = (0, -1)$$

$$AB = BC$$

$$-1x - 1 = x \rightarrow x = -\frac{1}{2}, y = -\frac{1}{2}$$

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

(5)



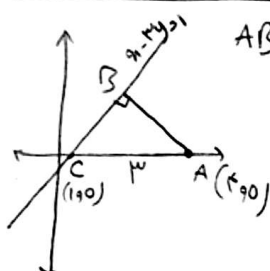
$$m_{AB} = m_{DC} \Rightarrow a = \frac{1}{a} \rightarrow a^2 = 1 \rightarrow a = \pm 1$$

$$AD = \frac{|1-1|}{\sqrt{1+1}} = \frac{\sqrt{2}}{2}$$

$$DC = \sqrt{a^2 - \left(\frac{\sqrt{2}}{2}\right)^2} = \frac{\sqrt{2}}{2} \Rightarrow S = \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} = \frac{1}{2}$$

$$\begin{cases} y-x=1 \xrightarrow{y=1} x=0 \\ y+x=1 \xrightarrow{y=1} x+1=0 \Rightarrow x=-1 \end{cases}$$

(5)



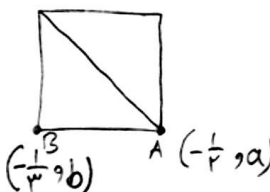
$$AB = \frac{|11-1|}{\sqrt{1+9}} = \frac{10}{\sqrt{10}}$$

$$C = (4, 11) \rightarrow C = (1, 9)$$

$$m_{AB} = -3 \xrightarrow{C(1,9)} y = -3x + 11 \Rightarrow -3x + 11 = \frac{9-1}{1-4}$$

$$BC = \sqrt{\left(\frac{11}{10}\right)^2 + \left(\frac{9}{10}\right)^2} = \frac{10}{10} \Rightarrow S = \frac{10}{10} \times \frac{10}{10} \times \frac{1}{2} = \frac{1}{2}$$

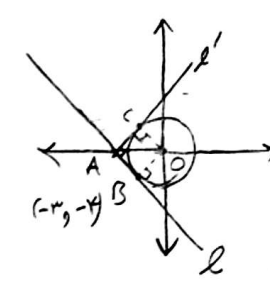
(5)



$$m = \frac{a-b}{-\frac{1}{4} + \frac{1}{4}} = \sqrt{2} \rightarrow a-b = -\frac{\sqrt{2}}{2} \Rightarrow AB = \sqrt{(a-b)^2 + \left(-\frac{1}{4} + \frac{1}{4}\right)^2} = \frac{\sqrt{2}}{2}$$

$$AB = \sqrt{\left(\frac{\sqrt{2}}{2}\right)^2 + \left(\frac{\sqrt{2}}{2}\right)^2} = \frac{\sqrt{2}}{2}$$

(5)



$$m_{BO} \perp m_{l} \Rightarrow m_{BO} = m_{l'} \Rightarrow m_{BO} = \frac{1}{4} \rightarrow m_{l'} = \frac{1}{4}$$

$$-x + y = -\frac{1}{4}x + b \Rightarrow y = -\frac{1}{4}x - \frac{1}{4}$$

$$m_{l'} = \frac{1}{4} \Rightarrow y = \frac{1}{4}x + b \Rightarrow y = \frac{1}{4}x + \frac{1}{4}$$

$$A \Rightarrow \frac{1}{4}x + \frac{1}{4} = -\frac{1}{4}x - \frac{1}{4} \Rightarrow x = -1, y = 0 \Rightarrow \text{Area} = \frac{1}{2} \times 1 \times 1 = \frac{1}{2}$$

(5)