

$$\left. \begin{aligned} y-k &= \frac{-1}{r}(x+r) \rightarrow y = \frac{-1}{r}x + k-1 \\ y-m &= \frac{-1}{r}(x-\varepsilon) \rightarrow y = \frac{-1}{r}x + m+r \end{aligned} \right\} \Rightarrow \begin{aligned} k-1 &= m+r \\ k-m &= r \end{aligned}$$

$$AB = \sqrt{\Delta x^2 + \Delta y^2} = \sqrt{\left(\frac{-r-\varepsilon}{r}\right)^2 + \left(\frac{k-m}{r}\right)^2} = \sqrt{\frac{r^2+9}{r^2}} = \frac{1}{r}\sqrt{r^2+9} = \mu\sqrt{a}$$

$$\rightarrow S = AB^2 = (\sqrt{\varepsilon a})^2 = \varepsilon a$$

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$$x_A + x_C = x_B + x_D \rightarrow -1 + x = 3 - (1 - x) \Rightarrow 2x = 4 \Rightarrow x = 2$$

$$AB \perp BC \rightarrow m_{AB} \cdot m_{BC} = -1 \rightarrow m_{AB} = \frac{\varepsilon-1}{-1-3} = \frac{-\mu}{\varepsilon} \rightarrow m_{BC} = \frac{\varepsilon}{\mu} = \frac{y-1}{\frac{\mu}{r}-3}$$

$$\Rightarrow y = -1$$

$$\begin{aligned} AB &= \sqrt{3^2 + \varepsilon^2} = a \\ BC &= \sqrt{r^2 + \left(\frac{r}{r}\right)^2} = \frac{a}{r} \end{aligned} \rightarrow \text{مساحت مستطیل} = 2(AB+BC) = 2\left(a + \frac{a}{r}\right) = \frac{1a}{r}$$

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$$m = \tan 40^\circ = \sqrt{3} \rightarrow 2mx + (m^2-1)y = 3 \Rightarrow \frac{-2m}{m^2-1} = \sqrt{3}$$

$$\rightarrow -2m = \sqrt{3}m^2 - \sqrt{3} \Rightarrow \sqrt{3}m^2 + 2m - \sqrt{3} = 0$$

$$\frac{\sqrt{a}}{|a|} = \frac{\sqrt{\varepsilon + \varepsilon \times \frac{\mu}{r} \times \sqrt{3}}}{\sqrt{\mu}} = \frac{\varepsilon}{\sqrt{\mu}} = \frac{\varepsilon\sqrt{3}}{\mu}$$

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$$m_{BC} = \frac{11+\mu}{3-\mu} = \frac{1}{\varepsilon} = 2 \rightarrow y-3 = 2(x-3) \rightarrow y = 2x-3$$

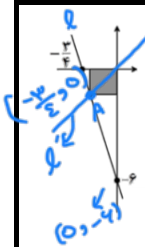
$$\rightarrow d = \frac{|2-9-3|}{\sqrt{2^2+1}} = \frac{10}{\sqrt{5}} = 2\sqrt{5}$$

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$$B \begin{cases} (y+2x=7) \\ 2y-3x=-19 \end{cases} \Rightarrow y=+1, x=+3$$

$$BA = \frac{|2y-3x-19|}{\sqrt{2^2+3^2}} = \frac{|1+6-19|}{5} = \frac{12}{5} = \frac{12}{5}$$

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$$m_l = \frac{0 - (-4)}{-1 - 0} = -4 \rightarrow l: y = -4x - 4$$

$$l': y = x$$

$$\begin{cases} -4x - 4 = x \\ 4x = -4 \rightarrow x = \frac{-4}{4} = \frac{-1}{1} \\ y = \frac{-1}{1} \end{cases} \rightarrow A\left(\frac{-1}{1}, \frac{-1}{1}\right) \rightarrow \text{مساحت} = \frac{1}{2}$$

$$مساحت = a\sqrt{r} \rightarrow \frac{1\sqrt{1}}{2}$$

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$$\begin{cases} ay - x = a - 1 \\ y - ax = 1 \end{cases} \rightarrow y = \frac{x}{a} + \frac{a-1}{a} \rightarrow \frac{1}{a} = a \rightarrow a^2 = 1 \rightarrow a = \pm 1$$

$$\Rightarrow y = \frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{1}{\sqrt{1}} = \frac{\sqrt{1}}{1}$$

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

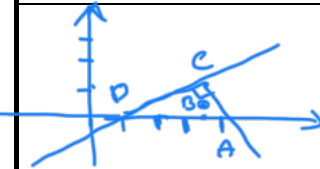
$$\Rightarrow S = \frac{\sqrt{1}}{1} \times \frac{1\sqrt{1}}{1} = \frac{1}{1} = \frac{1}{2}$$

$$a = 1 \rightarrow y = x, y = x + 1$$

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

$$مساحت = 1, 2$$

$$a = 1 \leftarrow$$



$$d = \frac{|1 - 1|}{\sqrt{1 + 1}} = \frac{0}{\sqrt{2}} = 0$$

$$m_{AC} = -1 \rightarrow y = -1(x - 1) = -x + 1$$

$$\Rightarrow \begin{bmatrix} 1 & 1 & 1 \\ 0 & 0 & 0 \\ 1 & 1 & 1 \end{bmatrix} \rightarrow 0, 1, 1 \rightarrow y = -1, 1 \rightarrow S = \frac{1}{2} \times 1, 1 = \frac{1}{2}$$

$$C \Rightarrow \frac{1}{1}x - \frac{1}{1} = -1x + 1 \Rightarrow x = 1, y = 0$$

$$= \frac{1}{2}$$

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$$m = \frac{b - a}{\frac{-1}{1} - \left(\frac{-1}{1}\right)} = \frac{b - a}{\frac{1}{1}} = \sqrt{1} \Rightarrow b - a = \frac{1}{1}$$

$$a = \sqrt{\Delta x^2 + \Delta y^2} = \sqrt{\left(\frac{-1}{1} - \left(\frac{-1}{1}\right)\right)^2 + \frac{1}{1}} = \sqrt{\frac{1}{1} + \frac{1}{1}} = \frac{1}{1} = \frac{1}{1}$$

$$مساحت = a\sqrt{r} = \frac{1\sqrt{1}}{1}$$

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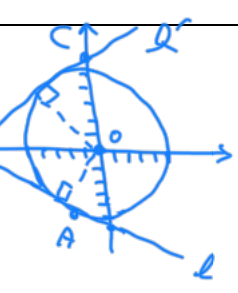
$$m_{OA} = m_l = \frac{1}{1} \rightarrow m_d = -\frac{1}{1}$$

$$y = \frac{1}{1}x + c \rightarrow y = \frac{1}{1}x + \frac{1}{1}$$

$$l \rightarrow y = -\frac{1}{1}x - \frac{1}{1}$$

$$B \rightarrow \begin{cases} \frac{1}{1}x_B + \frac{1}{1} \\ -\frac{1}{1}x_B - \frac{1}{1} \end{cases} \rightarrow x_B = -1, y_B = -1$$

$$\rightarrow x_B y_B = 1$$

$$r = \sqrt{1^2 + 1^2} = \sqrt{2}$$


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