

۱۲, ۷۵

$$m = -\frac{1}{r} \rightarrow \frac{x-m}{-2m^2} = -\frac{1}{r} \rightarrow \frac{x-m}{-2} = -\frac{1}{r} \rightarrow x-m = 2$$

(۱, ۷۵)

$$d_{AB} = \sqrt{3^2 + 9} = \sqrt{12} \rightarrow 2\sqrt{3} \rightarrow S = 4\sqrt{3}$$

$\frac{1}{4}r^2(x-m)^2 = 3^2$

$$m_{AB} = m_{CD} \rightarrow \frac{r-1}{r^2-1} = \frac{y+3-y}{-1-3x}$$

در آبی و سطح و سطح موازی اند CD با AB موازی اند به دو برابر دارند

$$\rightarrow \frac{r}{-r} = \frac{3}{-1-3x} \rightarrow x = \frac{3}{r}$$

$$m_{AB} = m_{CD} = -1 \rightarrow -\frac{r}{r} = \frac{y-1}{x-3} \rightarrow x = \frac{r}{r}$$

$$AB = \sqrt{r^2 + r^2} = \frac{r}{\sqrt{2}}$$

$$AC = \sqrt{\frac{r^2}{r} + \frac{r^2}{r}} = \frac{r}{\sqrt{2}}$$

$$C \left| \begin{matrix} \frac{r}{r} \\ \frac{r}{r} \end{matrix} \right| D \left| \begin{matrix} -\frac{r}{r} \\ -\frac{r}{r} \end{matrix} \right|$$

$$b = 2(2 + \sqrt{2}) = 6 + 2\sqrt{2}$$

$$m = \tan \alpha = \frac{1}{r} = \frac{-2m}{m^2-1} \rightarrow \sqrt{3}m^2 - \sqrt{3} + 2m = 0 \rightarrow \frac{\sqrt{3}}{1} = \frac{\sqrt{3}+2}{\sqrt{3}} \rightarrow \frac{r\sqrt{3}}{3}$$

(۲) می دانیم  $m = \tan \alpha$

$$m_{BC} = \frac{11-r}{v-r} = 2 \rightarrow \frac{y}{x} = \frac{b}{c} \rightarrow b = 3 \Rightarrow y = 2x - 3$$

$y = 2x + b$

ابتدا معادله BC را می نویسیم و سپس فاصله A از BC را حساب می کنیم

$$-2x + y + 3 = 0 \rightarrow d = \frac{|-2+9+3|}{\sqrt{4+1}} = \frac{10}{\sqrt{5}} = 2\sqrt{5}$$

(۳) ابتدا با برابر کردن معادله خط های BC و AB به خط عمود بر BC می رسیم

$$BC \perp AB \rightarrow \frac{y}{x} = \frac{b}{c} \rightarrow \frac{y}{x} = \frac{19}{r} = -2x + 3 \rightarrow \frac{1}{r}x = \frac{3}{r} \rightarrow x = 3, y = 1$$

$$d = \frac{|3-9-17|}{\sqrt{r^2+r^2}} = \frac{23}{\sqrt{2}} \rightarrow \frac{23}{\sqrt{2}}$$

$$A \left| \begin{matrix} \frac{r}{r} \\ \frac{r}{r} \end{matrix} \right| B \left| \begin{matrix} -\frac{r}{r} \\ -\frac{r}{r} \end{matrix} \right| m_{AB} = \frac{y}{x} = -1 \rightarrow y = -x + b \rightarrow y = -1x - 2 \rightarrow y = -x - 2$$

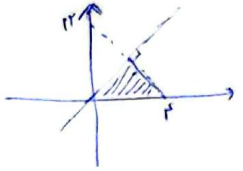
$$x = -1x - 2 \rightarrow x = -\frac{2}{2} = -1, y = -(-1) - 2 = -1$$

$\sqrt{(-\frac{r}{r})^2 + (-\frac{r}{r})^2} = \frac{r\sqrt{2}}{r}$

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

$$b_2 \rightarrow r \rightarrow 12 - 3u = \frac{1}{r} u - \frac{1}{r} \rightarrow u = 3, v$$

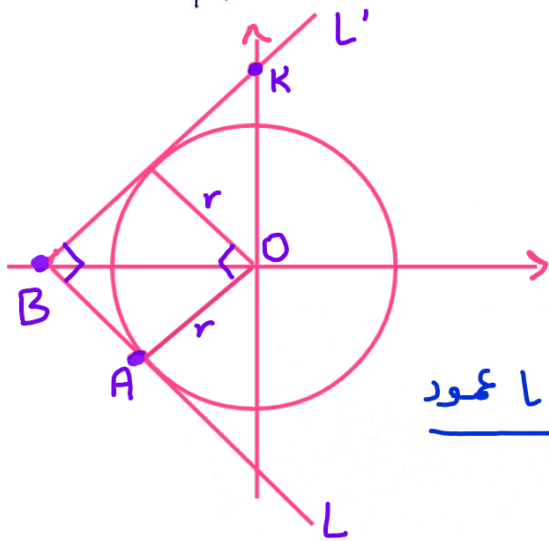
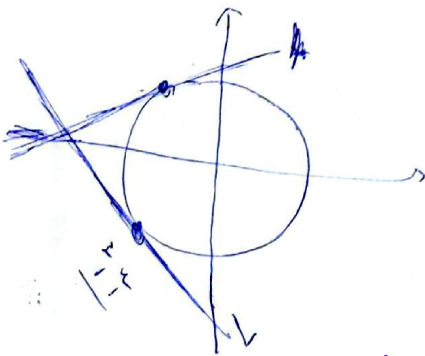
$$y = 2, 9$$



$$S_{max} = \frac{r \times 12}{2} = \boxed{r \times 6} = 12 \times 6 = 72$$

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

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



$$m_{OA} = \frac{r}{r} \xrightarrow{\text{مكودبر}} m_L = -\frac{r}{r}$$

$$L: y + r = -\frac{r}{r}(x + r) \rightarrow y = -\frac{r}{r}x - \frac{2r}{r}$$

$$\xrightarrow{\text{ل و ل' عمود}} m_{L'} = \frac{r}{r} \rightarrow L': y - \frac{r}{r}x - K = 0$$

$$OL' = OA = \sqrt{9 + 16} = 5 \quad \text{شعاع}$$

$$OL' = \frac{|1 - K|}{\sqrt{1 + \frac{16}{9}}} = 5 \rightarrow K = \frac{25}{3} \rightarrow L': y = \frac{r}{r}x + \frac{25}{3}$$

$$\text{مقاطع B محل} \Rightarrow (-7, -1) \xrightarrow{\text{حاصل ضرب}} \boxed{7}$$

نقاط ل و ل'

$$m_{CD} = m_{AB} = -\frac{3}{4} \rightarrow \frac{3}{-1-2n} = -\frac{3}{4} \rightarrow n = \frac{3}{2}$$

$$m_{AB} \times m_{BC} = -1 \rightarrow -\frac{3}{4} \times \frac{y-1}{-\frac{3}{2}} = -1 \rightarrow y = -1$$

$$|AB| = \sqrt{14+9} = 5$$

$$\rightarrow \rho = 15$$

$$|BC| = \sqrt{\frac{9}{4} + 4} = \frac{5}{2}$$

✓ دو خط داده شده موازی و شیب ها برابر دارند:  $\frac{1}{a} = a \rightarrow a = \pm 1$

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

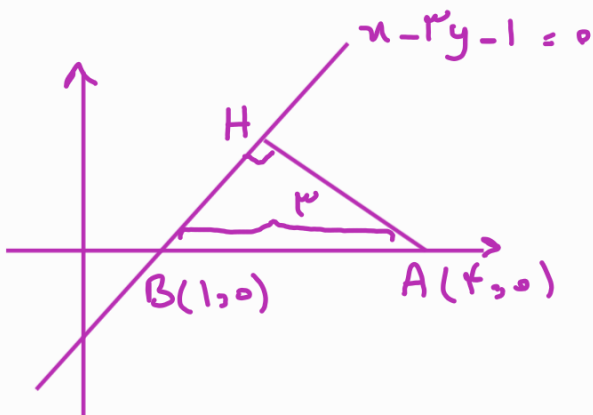
if  $a = -1$  — روی هیچ کدام از —  
خط ها نیفتاده و غلط است!

$$\text{فاصله نقطه } (1,2) \text{ از خط } y-x=0 \text{ = } \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} \Rightarrow (\text{طول})^2 + \frac{1}{2} = 25 \rightarrow \text{طول} = \frac{7}{\sqrt{2}}$$

$$S = \frac{7}{\sqrt{2}} \times \frac{1}{\sqrt{2}} = \frac{7}{2}$$

۱ ابتدا شکل سوال را رسم کرده و طول ضلع

AH را می یابیم



$$|AH| = \frac{|4 - 0 - 1|}{\sqrt{9+1}} = \frac{3}{\sqrt{10}}$$

$$\frac{9}{10} (AH)^2 + (BH)^2 = (AB)^2 \rightarrow BH = \frac{9}{\sqrt{10}}$$

$$S_D = \frac{9}{\sqrt{10}} \times \frac{3}{\sqrt{10}} \times \frac{1}{2} = \frac{27}{20} = 1,35$$