

$$A \begin{vmatrix} x \\ y \end{vmatrix} \begin{vmatrix} 1 \\ -4 \end{vmatrix} \quad C \begin{vmatrix} x \\ y \end{vmatrix} \begin{vmatrix} 1 \\ 1 \end{vmatrix} \quad B \begin{vmatrix} 2x-2 \\ xy+2 \end{vmatrix} \begin{vmatrix} 1 \\ 1 \end{vmatrix} \Rightarrow C \begin{vmatrix} 1 \\ 1 \end{vmatrix}$$

$$M_{AB} = V \Rightarrow m_{HC} = \frac{1}{V} \Rightarrow y = \frac{1}{V}x + b \xrightarrow{(1,1)} 1 = \frac{1}{V} + b$$

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

$$BC = \sqrt{(1+1)^2 + (V-1)^2} = \sqrt{4+V^2-2V+1} = \sqrt{V^2-2V+5}$$

$$BC: y = -\frac{1}{V}x + b \xrightarrow{(1,1)} 1 = -\frac{1}{V} + b \rightarrow b = \frac{V+1}{V} \rightarrow y = -\frac{1}{V}x + \frac{V+1}{V}$$

$$AH: \frac{|1+1-\frac{V+1}{V}|}{\sqrt{1+\frac{1}{V^2}}} = \frac{\frac{1}{V}}{\frac{\sqrt{V^2+1}}{V}} = 1 \quad \boxed{d=2, 3}$$

$$y + \frac{1}{V}x \cdot \frac{V}{V} =$$

$$\text{دو دایره} \Rightarrow d=2 \Rightarrow xy = 2x+2 \rightarrow xy-x=2, \quad 2y-x=V$$

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

$$S = \pi r^2 \rightarrow S = \pi \times \left(\frac{V}{\sqrt{2}}\right)^2 = \frac{V^2}{2} \pi = 5, 412$$

$$A \begin{vmatrix} x \\ y \end{vmatrix} \begin{vmatrix} 1 \\ 1 \end{vmatrix} \quad M \begin{vmatrix} x \\ y \end{vmatrix} \begin{vmatrix} 1 \\ 1 \end{vmatrix} \quad B \begin{vmatrix} 2x-2 \\ xy-2 \end{vmatrix} \begin{vmatrix} 1 \\ 1 \end{vmatrix} \Rightarrow M \begin{vmatrix} 1 \\ 1 \end{vmatrix} \quad BC: y = -x + d \quad m_{BC} = -1$$

$$\Rightarrow m_{CH} = 1 \quad y = x + b \xrightarrow{(1,1)} 1 = 1 + b \Rightarrow b = 0$$

$$y = x-1 \quad x-2 = -x+d \rightarrow 2x=V \rightarrow x=3, d=7 \text{ و } y=1, d$$

$$MH = \sqrt{(3-3, d)^2 + (3-1, d)^2} = \sqrt{2\left(\frac{1}{2}\right)^2 + \frac{1}{2}} = \sqrt{\frac{1}{2}}$$

$$\frac{m+1}{2m-1} = \frac{-(d-m)}{2m-1} \rightarrow (m+1)(2m-1) = -(d-m)(2m-1)$$

$$2m^2+m-1 = -2m^2+4m-2d \rightarrow 4m^2-3m+1 = 2d \quad d < 0$$

سج متار m

$$r(x) \leq t-x \rightarrow rx \leq d \rightarrow x \leq \frac{d}{r}$$

$$\frac{r-x}{r} \leq r(x-1) \rightarrow dx \leq d \rightarrow x \leq 1$$

$$\frac{r-x}{r} \leq t-x \rightarrow x \leq d$$

$$A \begin{vmatrix} 1 \\ 1 \end{vmatrix}$$

$$B \begin{vmatrix} d \\ -1 \end{vmatrix}$$

$$C \begin{vmatrix} d \\ \frac{d}{r} \end{vmatrix}$$

$$M \begin{vmatrix} \frac{1}{r} \\ \frac{r}{r} \end{vmatrix}$$

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

$$\frac{AM}{AH} = \frac{\frac{\sqrt{d}}{r}}{\frac{1}{\sqrt{2}}} = \frac{d}{r}$$

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

خطی با این شیب  
که از مبدأ می‌گذرد

$$y = -\frac{1}{r}x \rightarrow ry + x = 0 \quad d \leq \sqrt{r} \rightarrow \frac{|c-c'|}{a^2+b^2} \leq \sqrt{r}$$

$$\sqrt{r} = \frac{|c-c'|}{\sqrt{r+1}} \Rightarrow c = \pm 1$$

در هر دو حالت  
یک جواب دارد

$$ry + x = 10 \xrightarrow{x=0} y = d$$

$$y = 0 \rightarrow x = 10$$

$$AB = \sqrt{(d-0)^2 + (10-0)^2} = \sqrt{r(d+10)} = \sqrt{r(d+10)}$$

$$(1-m)x + r \leq 0 \rightarrow x \leq \frac{r}{1-m} \quad rx + rm \leq 0 \rightarrow x \leq \frac{m}{r}$$

$$y \leq (1-m)x + r$$

$$y \leq \frac{rx+m}{m} + r$$

$$(1-m)x + r \leq \frac{rx+m}{m} + r \rightarrow x \leq 0 \Rightarrow y \leq r$$

$$\frac{1}{r} \times \left| \frac{r}{1-m} - \frac{m}{r} \right| \times r = \frac{d}{r} \rightarrow \left| \frac{r}{1-m} - \frac{m}{r} \right| \leq \frac{d}{r} \rightarrow \left| \frac{m^2-m+r}{r-m} \right| \leq \frac{d}{r}$$

$$rm^2 - (m+r) \leq 10 - dm \rightarrow rm^2 + 3m - r \leq 0 \quad S = \frac{r}{r}$$

$$rm^2 - (m+r) \leq dm - 10 \rightarrow rm^2 - 7m + 10 \Delta C$$

نقطه (۲، ۱) بر روی  
خط مد نظر است

$$1 \leq 2(2) - 3$$

این نقطه را بنویسید  
نقطه (۲، ۲) تقریباً کنیم

$$A \begin{vmatrix} 2 \\ 1 \end{vmatrix}$$

$$B \begin{vmatrix} 2 \\ -2 \end{vmatrix}$$

$$C \begin{vmatrix} 4-2=2 \\ -4-1=-5 \end{vmatrix}$$

$$m \leq 2$$

نقطه (۲، ۱)  
نقطه (۲، ۲)

$$\left. \begin{matrix} m \leq 2 \\ \text{نقطه (۲، ۱)} \\ \text{نقطه (۲، ۲)} \end{matrix} \right\} y = 2x + 1$$

$$m' \leq \frac{1}{m} \Rightarrow m' \leq -1$$

$$y = -x + b \xrightarrow{A(1,2)} 2 = -1 + b \Rightarrow b = 3$$

$$y = -x + 3$$

$$-x + 3 \leq x + d \rightarrow rx \leq 2 \rightarrow x \leq 1, y \leq 3$$

$$A \begin{vmatrix} 1 \\ 2 \end{vmatrix}$$

$$B \begin{vmatrix} -1 \\ 2 \end{vmatrix}$$

$$C \begin{vmatrix} -2-1=-3 \\ 1-2=-1 \end{vmatrix}$$

$$\Rightarrow a = -3, b = 6$$

$$2b - a = 12 + 3 = 15$$