

$$y = -\frac{1}{r}x + b \xrightarrow{x=4} y = -\frac{1}{r}(4) + b = -2 + b \Rightarrow m = -2 + b$$

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

$$AM = \sqrt{(4-(-2))^2 + (-2+b-1-b)^2} = \sqrt{36+9} = \sqrt{45}$$

$$\rightarrow S = \sqrt{45} \times \sqrt{45} = 45$$

$$AB \parallel DC \rightarrow m_{AB} = m_{DC} \Rightarrow \frac{-3}{r} = \frac{-3}{r_{x+1}} \Rightarrow r_{x+1} = 4 = r_1 = \frac{3}{r}$$

$$AB \perp BC \rightarrow m_{AB} = -\frac{r}{4} \Rightarrow m_{BC} = \frac{4}{r} \rightarrow BC: y-1 = \frac{4}{r}(x-3) \rightarrow y = \frac{4}{r}x - 3$$

$$BC \text{ نقطه } C \text{ می گذرد} \xrightarrow{x=3} y = \frac{4}{r}(\frac{3}{r}) - 3 = -1 \Rightarrow C(\frac{3}{r}, -1)$$

$$AB: \sqrt{9+16} = 5$$

$$BC: \sqrt{\frac{9}{r^2} + 4} = \frac{5}{r} = 2, 5$$

$$\text{مساحت: } 2 \times (5+2,5) = 2 \times 7,5 = 15$$

$$\sin \theta = \frac{1}{\sqrt{5}}$$

$$\rightarrow \frac{1}{\sqrt{5}} = \frac{1}{\sqrt{5}} \rightarrow \sqrt{5} m^2 + 2m - \sqrt{5} = 0$$

$$\rightarrow m_{\text{فاصله}} = \frac{|\Delta|}{|a|} = \frac{\sqrt{4+5}}{\sqrt{5}} = \frac{3}{\sqrt{5}} = \frac{3\sqrt{5}}{5}$$

$$m_{BC} = \frac{1}{r} = 2$$

$$y_{BC} = r_{x+1} - 3 \rightarrow y - 2x + 3 = 0$$

$$A \text{ و } B \text{ از } BC: \frac{|9-2+3|}{\sqrt{1+4}} = \frac{10}{\sqrt{5}} = 2\sqrt{5}$$

$$\begin{cases} AB: 3y + 2x = 17 \\ BC: 2y - 1x = -19 \end{cases} \Rightarrow 11x = 33$$

$$\Rightarrow x = 3$$

$$y = 1 \Rightarrow B(3, 1)$$

$$B \text{ فاصله } AC: \frac{|14-9-17|}{\sqrt{1+9}} = \frac{-22}{3} = \frac{22}{3}$$

$$m: \frac{\Delta y}{\Delta x} = \frac{-4}{\frac{10}{3}} = -1 \rightarrow y = -1x - 4$$

چون اضلاع مربع برابرند فاصله فقط A از محورهای y, x برابر است. (اس مربع)

$$\Rightarrow 4x - 1x - 4$$

$$4x - 4$$

$$x = \frac{-4}{4} = -1$$

$$\Rightarrow A(-1, -1)$$

$$\Rightarrow \text{قطر} = \sqrt{\left(\frac{2}{3}\right)^2 + \left(\frac{2}{3}\right)^2} = \sqrt{\frac{8}{9}} = \frac{2\sqrt{2}}{3}$$

$$y = ax + 1$$

$$y = \frac{a}{a} + 1 - \frac{1}{a}$$

$$\left. \begin{array}{l} \text{موازی اند} \\ m_1 = m_2 \end{array} \right\} \alpha = \frac{1}{a} \Rightarrow a = \pm 1$$

نقطه $(1, 2)$ باید در خط از شرط صد کند $\Rightarrow a = +1$

$$y_1 = x + 1$$

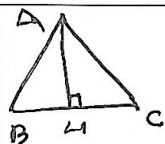
$$y_2 = x$$

$$\text{فاصله فقط} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$



$$91 \rightarrow \sqrt{45 - \left(\frac{\sqrt{2}}{2}\right)^2} = \sqrt{\frac{49}{2}} = \frac{7}{\sqrt{2}} = \frac{7\sqrt{2}}{2}$$

$$8: \frac{\sqrt{2}}{2} \times \frac{7\sqrt{2}}{2} = \frac{7}{2} = \boxed{3,5}$$



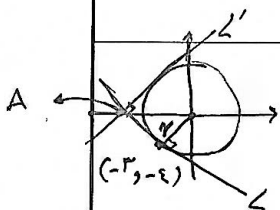
$$\Delta H: \text{فاصله } A \text{ از } BC = \frac{|4-1|}{\sqrt{1+9}} = \frac{3}{\sqrt{10}}$$

فرمانی نسبت طول تا خط عمود باشد برابر $\frac{3}{\sqrt{10}}$ است

$$\Rightarrow 8: \frac{1}{2} \times \frac{3\sqrt{10}}{1} \times \frac{3\sqrt{10}}{1} = \frac{9 \times 10}{2 \times 2} = \boxed{22,5}$$

$$m: \frac{\Delta y}{\Delta x} = \frac{a-b}{-\frac{1}{4}} = \sqrt{3} \Rightarrow a-b = \frac{\sqrt{3}}{4}$$

$$\text{ضلع} = \sqrt{\left(\frac{1}{4}\right)^2 + \left(\frac{\sqrt{3}}{4}\right)^2} = \frac{1}{2} \Rightarrow \text{قطر} = \frac{\sqrt{2}}{2}$$



$$\text{شیب شعاع } r: \frac{-4}{-3} = \frac{4}{3} \rightarrow \text{خط } L \rightarrow m_L = \frac{-3}{4}$$

$$\text{بر شعاع } r \text{ عمود است}$$

$$\text{طول شعاع} = \sqrt{16+9} = 5$$

$$\rightarrow \text{خط } L: y = \frac{-3}{4}x - \frac{25}{4}$$

$$\text{خط } L' \text{ عمود است} \rightarrow m_{L'} = \frac{4}{3}$$

$$L': y - \frac{4}{3}x - b = 0$$

$$\frac{|-b|}{\sqrt{\frac{16}{9}}} = 5$$

$$\rightarrow \left\{ \begin{array}{l} L: y = \frac{-3}{4}x - \frac{25}{4} \\ L': y = \frac{4}{3}x + \frac{25}{4} \end{array} \right\} \text{ تقاطع } x = -1 \Rightarrow A(-1, -1)$$

$$\rightarrow |-b| = \frac{25}{3}$$

$$\Rightarrow (-1) \times (-1) = \boxed{1}$$

$$\text{فاصله } b > 0 \rightarrow b = \frac{25}{3}$$