

$$\begin{vmatrix} -\frac{r}{r} & 0 \\ 0 & -r \end{vmatrix} \rightarrow \text{محل} \quad m = \frac{\Delta y}{\Delta x} = \frac{-r}{\frac{r}{r}} = -1 \rightarrow y = -1x - r$$

نقطه روی نمودار = رأس مربع
 $\alpha \rightarrow \alpha = -1\alpha - r \rightarrow 2\alpha = -r \rightarrow \alpha = -\frac{r}{2}$

مسافت = قطر = $\sqrt{\left(\frac{r}{2}\right)^2 + \left(\frac{r}{2}\right)^2} = \frac{r}{2}\sqrt{2}$

$$\frac{1}{a} = \frac{a}{1} \rightarrow a^2 = 1 \rightarrow a = \pm 1 \rightarrow y - x = 0, y - x = 1 \rightarrow d = \frac{|1|}{\sqrt{1}} = \sqrt{2}$$

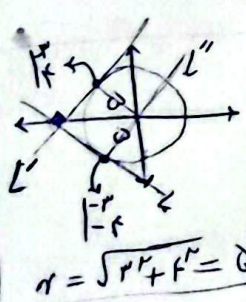
$$d = \frac{\sqrt{2}}{2} \rightarrow z = \sqrt{r^2 - \frac{r^2}{4}} = \frac{\sqrt{3}r}{2} \rightarrow S = \frac{\sqrt{2}}{2} \times \frac{\sqrt{3}r}{2} = \frac{\sqrt{6}}{4}r = \frac{r\sqrt{6}}{4}$$

$$AC = \frac{|r - 1|}{\sqrt{10}} = \frac{r}{\sqrt{10}}$$

$x = \sqrt{1 - \frac{1}{10}} = \frac{3}{\sqrt{10}} \rightarrow S = \frac{\frac{1}{\sqrt{10}} \times \frac{3}{\sqrt{10}}}{r} = \frac{3}{r} = 1,35$

A B مربع $\frac{b-a}{-\frac{1}{r} + \frac{1}{r}} = \sqrt{3} \rightarrow b-a = \frac{1}{4}\sqrt{3} \rightarrow AB = \sqrt{\Delta x^2 + \Delta y^2} = \sqrt{\left(\frac{1}{r} + \frac{1}{r}\right)^2 + (b-a)^2}$

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



$$m_{L''} = \frac{\Delta y}{\Delta x} = \frac{r}{r} \rightarrow m_{L''} = -\frac{1}{m_L} \rightarrow m_L = -\frac{r}{r} \frac{1-r}{r} \rightarrow -r = \frac{r}{r} + b \rightarrow b = -2r$$

$$y_L = -\frac{r}{r}x + \frac{r}{r} \rightarrow m_{L'} = m_{L''} = \frac{r}{r} \frac{1-r}{r} \rightarrow r = -\frac{r}{r} + b \rightarrow b = 2r$$

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

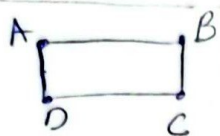
OA = a, OL' = \frac{r}{a}k = a - k - \frac{r}{a}

\frac{r}{1r}a = \frac{1-r}{1r} \rightarrow ar = 1-r \rightarrow ar = 1-r

زهرا سادات حسینی - با افتخار تقدیم می‌کند ۱۸/۵

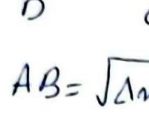
$$m = \frac{\Delta y}{\Delta x} = \frac{m-k}{4} = -\frac{1}{4} \rightarrow m-k = -4 \rightarrow AB = \sqrt{\Delta x^2 + \Delta y^2} = \sqrt{4^2 + (m-k)^2}$$

$$= \sqrt{16 + 16} = \sqrt{32} \rightarrow S = a^2 = (\sqrt{32})^2 = 32$$



$$x_A + x_C = x_B + x_D$$

$$-1 + x = 3 - 1 - x \rightarrow x = \frac{3}{2}$$



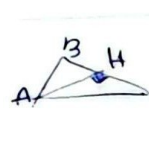
$$AB = \sqrt{\Delta x^2 + \Delta y^2} = \sqrt{3^2 + 3^2} = \sqrt{18} \rightarrow AB \perp BC \Rightarrow m_{AB} = \frac{\Delta y}{\Delta x} = \frac{3}{-3} \rightarrow m_{BC} = +\frac{3}{3}$$

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

$$BC = \sqrt{(3-3)^2 + 3^2} = 3$$

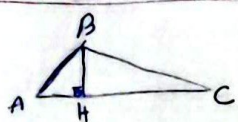
$$\tan \theta = \sqrt{3} \Rightarrow \frac{-2m}{m^2-1} = \sqrt{3} \rightarrow \sqrt{3}m^2 - \sqrt{3} = -2m \rightarrow \sqrt{3}m^2 + 2m - \sqrt{3} = 0$$

$$\sin \theta = \frac{\Delta y}{\Delta x} = \frac{3}{\sqrt{18}} = \frac{1}{\sqrt{2}}$$



$$m_{BC} = \frac{\Delta y}{\Delta x} = \frac{11-3}{4-3} = \frac{8}{1} = 8 \rightarrow 3 = 4 + b \rightarrow y = 8x - 3$$

$$AH = \frac{|-3 + 4 + 3|}{\sqrt{8^2 + 1}} = \frac{4}{\sqrt{65}}$$



$$BA = BC \Rightarrow \begin{cases} 3y + 3x = -14 \\ 3y - 4x = -14 \\ -11x = -28 \rightarrow x = \frac{28}{11} \end{cases}$$

$$AC = 3y - 4x - 14 = 0$$

$$BH = \frac{|3 - 4 - 14|}{\sqrt{3^2 + 4^2}} = \frac{15}{5} = 3$$