

$$A(1, -4) \quad B(2, 1) \rightarrow m = \frac{1+4}{2-1} = -5 \rightarrow m' = \frac{1}{5} \text{ و } \begin{matrix} \text{معمولاً} \\ \text{نقطه} \end{matrix} \begin{matrix} 1 \\ 1 \end{matrix}$$

$$y - 1 = \frac{1}{5}(x - 2) \rightarrow y - 1 = \frac{1}{5}x - \frac{2}{5} \rightarrow y = \frac{1}{5}x + \frac{3}{5} \rightarrow \underline{y = x + 3}$$

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$$A(3, 1) \quad B(-4, 5) \quad C(-1, 3) \quad BC \text{ طول} = \sqrt{(4)^2 + (2)^2} = \sqrt{20} = 2\sqrt{5}$$

$$BC \text{ معادله} \rightarrow m = \frac{5-1}{-1-4} = \frac{4}{-5} = -\frac{4}{5} \rightarrow y = ax + b \rightarrow y = -\frac{4}{5}x + \frac{8}{5}$$

$$A \text{ فاصله} = \frac{|ka_0 + by_0 + c|}{\sqrt{a^2 + b^2}} = \frac{|4+12-8|}{\sqrt{16+25}} = 2 \rightarrow 2 - 2 = 0$$

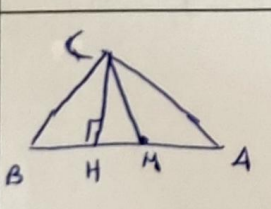
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$$r_y - a = v \quad , \quad r_y = ax + 2 \rightarrow m = \frac{1}{v} = \frac{a}{r} \rightarrow a = r$$

$$r_y = a + v \quad r_y = 2a + 2 \rightarrow r_y = a + 1 \rightarrow \text{فاصله} = \frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{|1 - 1|}{\sqrt{r^2 + 1}} = \frac{4}{\sqrt{5}} = \frac{4}{\sqrt{5}}$$

$$r = \frac{v}{\sqrt{5}} \rightarrow S = \pi r^2 = \pi \times \frac{4}{5} \rightarrow S = \frac{4}{5} \pi \rightarrow \pi = r = \frac{v}{5}$$

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$$A \begin{vmatrix} r \\ r \end{vmatrix} \quad B \begin{vmatrix} r \\ 1 \end{vmatrix} \quad C \begin{vmatrix} -1 \\ -3 \end{vmatrix} \quad M \begin{vmatrix} \frac{r+1}{2} \\ \frac{r+1}{2} \end{vmatrix} = \begin{vmatrix} r \\ r \end{vmatrix}$$

$$AB \text{ معادله} = m = \frac{r-1}{r-1} = -1 \rightarrow m'_{CH} = 1 \rightarrow y_{AB} = -x + d \quad y_{CH} = x - r$$

$$-x + d = x - r \rightarrow x = \frac{r}{2} \quad y = \frac{r}{2} \quad MH \text{ طول} = \sqrt{\left(\frac{r}{2} - \frac{r}{2}\right)^2 + \left(\frac{r}{2} - r\right)^2} = \frac{\sqrt{r}}{2}$$

$$(r-m-r)a + (d-m)y = v \quad (m+1)a - (r-m-r)y = r$$

$$m = \frac{b}{4} = \frac{-(r-m-r)}{2m} = \frac{r-rm}{2-m}$$

$$\frac{m+1}{r-m-r} = \frac{m-d}{r-rm} \rightarrow \Delta m^2 - 1rm + 1 = 0 \rightarrow b^2 - 4ac = \Delta \rightarrow 1r^2 - 18r + 1 < 0$$

$$\Delta < 0 \rightarrow m \text{ معادله در } \mathbb{R} \text{ ندارد}$$

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$AB: x+2y=1, AC: y=x-1, BC: x+y=1$
 $P \in AB \rightarrow A \begin{vmatrix} 1 & 2 \\ 1 & -1 \end{vmatrix} = 1 - 2 = -1 \rightarrow P = (1, 0)$
 $C \begin{vmatrix} 1 & -1 \\ 1 & 2 \end{vmatrix} = 1 - (-1) = 2 \rightarrow C = (1, 1)$
 $AH = \frac{|y+2x-1|}{\sqrt{5}} \rightarrow A \begin{vmatrix} 1 & 2 \\ 1 & -1 \end{vmatrix} = -1 \rightarrow \frac{-1}{\sqrt{5}} = \frac{AH}{\sqrt{5}} \rightarrow AH = \frac{1}{\sqrt{5}}$

$m = -\frac{1}{2}$
 $Y - Y_1 = m(x - x_1) \rightarrow Y - 0 = -\frac{1}{2}(x - 1) \rightarrow Y = -\frac{x}{2} + \frac{1}{2}$
 $Y - B = -\frac{1}{2}(x - 0) \rightarrow Y = -\frac{x}{2} + B \rightarrow B = \frac{1}{2} \rightarrow Y = -\frac{x}{2} + \frac{1}{2}$
 $\frac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}} = \frac{|0 + 0 - 1|}{\sqrt{1 + 1}} = \frac{1}{\sqrt{2}}$
 $\sqrt{(1-0)^2 + (0-1)^2} = \sqrt{1+1} = \sqrt{2}$

$my - mx = P \rightarrow y = \frac{P}{m} + x$
 $y = x - m \rightarrow y = x(1-m) + P$
 $\frac{P}{1-m} = \frac{m}{1-m} \rightarrow P = m$
 $\frac{m}{1-m} = \frac{P}{1-m} \rightarrow m = P$

$y = x - 1$
 $Y - Y_1 = m(x - x_1) \rightarrow Y - 1 = 1(x - 1) \rightarrow Y = x$
 $Y - 1 = 1(x - 1) \rightarrow Y = x$

$A(1, 2) \rightarrow y = -x + 2$
 $A'(a, b) \rightarrow y = -x + 2$
 $1 + 2 = -1 + 2 \rightarrow 1 = -1 \rightarrow 1 = -1$
 $1 + 2 = -1 + 2 \rightarrow 1 = -1 \rightarrow 1 = -1$