

$$P = \left(\frac{-4+1}{2}, \frac{4+2}{2} \right) = (1, 3)$$

$$m = \frac{3-2}{1-(-1)} = -\frac{1}{2} = -\frac{1}{V} \rightarrow \text{مماسه} = V$$

$$y - y_1 = m(x - x_1) \rightarrow y - 3 = V(x - 1) \rightarrow y = Vx - 2$$

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$$\text{طول } BC = \sqrt{(-1 - (-2))^2 + (3 - V)^2} = \sqrt{1 + 14} = \sqrt{15} \quad \left(\frac{m = \frac{3-V}{-1+2}}{-1+2} \right) y - V = -\frac{2}{V}(x + 2) \leftarrow \text{مماسه}$$

$$\Rightarrow 2(y - V) = -2(x + 2) \rightarrow 2x + 2y - 4 = 0$$

$$\text{فاصله } AH = \frac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}} = \frac{|2(1) + 2(3) - 4|}{\sqrt{2^2 + 2^2}} = \frac{4}{\sqrt{8}} = \sqrt{2}$$

$$\widehat{BC} - \widehat{AH} \rightarrow \omega - 2 = \sqrt{2}$$

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$$y = \frac{1}{2}x + \frac{V}{2} \rightarrow m = \frac{1}{2} \quad \frac{a}{2} = \frac{1}{2} \rightarrow a = 1 \rightarrow 2y = x + 2 \rightarrow -x + 2y - 2 = 0$$

$$d = \frac{|x_0 - cy|}{\sqrt{a^2 + b^2}} = \frac{|-1 - (-V)|}{\sqrt{(-1)^2 + 2^2}} = \frac{V}{\sqrt{5}} \quad r = \frac{1}{2} \times \frac{V}{\sqrt{5}} = \frac{V}{2\sqrt{5}} \quad S = \pi r^2$$

$$S = \left(\frac{V}{2\sqrt{5}} \right)^2 \pi \rightarrow \frac{9}{20} \pi$$

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$$m = \left(\frac{4+2}{2}, \frac{3+1}{2} \right) = (3, 2) \quad m_{AB} = \frac{1-3}{2-1} = -1 \quad y = -x + 5 \leftarrow AB \text{ خط}$$

$$\text{فاصله } AB = 1, C(-1, -3) \rightarrow y + 3 = x + 1 \rightarrow y = x - 2 \quad \text{خط}$$

$$\begin{cases} y = -x + 5 \\ y = x - 2 \end{cases} \rightarrow \begin{cases} -x + 5 = x - 2 \\ x = \frac{7}{2} \\ y = \frac{3}{2} \end{cases} \quad \text{فاصله } mH = \sqrt{\left(3 - \frac{7}{2}\right)^2 + \left(2 - \frac{3}{2}\right)^2} = \sqrt{\frac{1}{2} + \frac{1}{2}} = \sqrt{\frac{1}{2}} = \frac{\sqrt{2}}{2}$$

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$$a_1 = -\frac{m-2}{\omega-m} \quad a_2 = \frac{m+1}{2m-2} \quad a_1 \times a_2 = 1 \quad \left(-\frac{m-2}{\omega-m} \right) \left(\frac{m+1}{2m-2} \right) = -1$$

$$(m-2)(m+1) = (\omega-m)(2m-2) \rightarrow m^2 + m - 2 = -2m^2 + 2\omega m - 2\omega$$

$$\omega m^2 - 1m + 2\omega = 0 \quad \Delta = (-1)^2 - 4(\omega)(2\omega) = 1 - 8\omega = -17 \rightarrow \Delta < 0$$

فاصله

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$$\begin{cases} x+y=3 \\ y=2x-1 \end{cases} \quad x=1 \quad A(1,1) \quad \begin{cases} x+y=3 \\ x+y=8 \end{cases} \quad x=2 \quad B(2,-1) \quad \begin{cases} y=2x-1 \\ x+y=8 \end{cases} \quad x=\frac{9}{3} \quad C(3,5)$$

$$O_B = \left(\frac{0+2}{2}, \frac{-1+5}{2} \right) \rightarrow \left(1, \frac{4}{2} \right) \rightarrow AM = \sqrt{\left(1-\frac{1}{2} \right)^2 + \left(1-\frac{4}{2} \right)^2} = \sqrt{\frac{1}{4} + \frac{9}{4}} = \frac{\sqrt{10}}{2}$$

$$A(1,1) \rightarrow m=-1 \rightarrow y=-x+2 \rightarrow y=x+8 \rightarrow 2y=10 \rightarrow y=5 \rightarrow x=-2 \quad (x, y)_{\text{مركز}}$$

$$AH = \sqrt{(1-(-2))^2 + (1-5)^2} \rightarrow \sqrt{10} \quad \frac{AM}{AH} = \frac{\frac{\sqrt{10}}{2}}{\sqrt{10}} = \frac{1}{2}$$

$$y = -\frac{1}{2}x + c \rightarrow x + 2y - 2c = 0 \quad d = \frac{|\sqrt{10}(0) + b(0) + c|}{\sqrt{a^2 + b^2}} \rightarrow \frac{|-2c|}{\sqrt{1+4}} = \frac{2c}{\sqrt{5}} = \sqrt{10}$$

$$\frac{2c}{\sqrt{5}} = \sqrt{10} \rightarrow c = \frac{\sqrt{50}}{2}$$

$$x=0 \rightarrow (0, \frac{\sqrt{50}}{2}) \quad y=0 \rightarrow 0 = -\frac{1}{2}x + \frac{\sqrt{50}}{2} \rightarrow x = \sqrt{50} \rightarrow (\sqrt{50}, 0)$$

$$\sqrt{(1-\sqrt{50})^2 + (1-\frac{\sqrt{50}}{2})^2} = \sqrt{100 + 10} = \sqrt{110}$$

$$y + mx = x + 2 \xrightarrow{\text{نقل}} mx = x + 2 \quad m = \frac{2}{m-1} \quad my - 2x = 2x \xrightarrow{\text{نقل}} -2x = 2m \quad x = -\frac{m}{1}$$

$$\frac{2}{m-1} = \frac{2}{1} \rightarrow m-1=1 \rightarrow m=2$$

$$-\frac{m}{1} = \frac{2}{1} \rightarrow m = -2 \quad \frac{2}{1} \times 2 = 4$$

$$x=0 \rightarrow y=2 \rightarrow A(0,2)$$

$$x_m = \frac{x_A + x_{A'}}{2} = \frac{0 + x_{A'}}{2} \rightarrow x_{A'} = 2 \quad y_m = \frac{y_A + y_{A'}}{2} \rightarrow 2 = \frac{2 + y_{A'}}{2} \rightarrow y_{A'} = 2$$

$$y + 1 = 2(x - 2) \rightarrow y = 2x - 4$$

$$m_{AA'} = -1 \quad y - 2 = -1(x - 1) \rightarrow y = -x + 3$$

$$x_B = \frac{x_A + x_{A'}}{2} = \frac{0 + 2}{2} = 1 \quad y_B = \frac{y_A + y_{A'}}{2} = \frac{2 + 2}{2} = 2$$

$$A' = (-3, 4) \rightarrow 2b - a = (2 \times 4) + 3 = 11$$

$$y = -x + 3 \rightarrow y = 2x - 4 \rightarrow x = -1$$

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