

$$m_{AB} = \frac{-6-1}{8-2} = \frac{-7}{6} = -\frac{7}{6}$$

$$m_{AB} \times m_{\text{عمود منته}} = -1 \rightarrow -\frac{7}{6} \times m_{\text{عمود منته}} = -1 \rightarrow m_{\text{عمود منته}} = \frac{6}{7}$$

$$M \left| \begin{array}{c} x_A + x_B \\ y_A + y_B \end{array} \right| \rightarrow M \left| \begin{array}{c} 3 \\ 1 \end{array} \right|$$

عمود منته از نقطه وسطاره خط AB می‌گذرد (M)

$$y-1 = \frac{6}{7}(x-3) \rightarrow y-1 = \frac{6}{7}x - \frac{18}{7} \rightarrow y = \frac{6}{7}x + \frac{5}{7}$$

$$BC = \sqrt{(\Delta y)^2 + (\Delta x)^2} \rightarrow BC = \sqrt{(-5)^2 + (8)^2} = \sqrt{89}$$

$$m_{BC} = \frac{8}{-5} \Rightarrow BC: y-5 = \frac{-8}{5}(x+1) \rightarrow y = \frac{-8}{5}x + \frac{23}{5} \rightarrow y + \frac{8}{5}x - \frac{23}{5} = 0$$

$$AH = \frac{|1+8-\frac{23}{5}|}{\sqrt{1+\frac{64}{25}}} = \frac{\frac{12}{5}}{\frac{\sqrt{69}}{5}} = \frac{12}{\sqrt{69}} = \frac{4}{\sqrt{23}}$$

$$8-2 = 6$$

$$\left. \begin{array}{l} 2y-x=7 \rightarrow m = \frac{1}{2} \\ 8y=ax+2 \rightarrow m = \frac{a}{8} \end{array} \right\} \frac{1}{2} = \frac{a}{8} \rightarrow a=4$$

$$2y-x-7=0 \rightarrow 8y-4x-14=0$$

$$8y-4x-14=0$$

$$\text{مساحت دایره} = \frac{|1-14-(-2)|}{\sqrt{16+8}} = \frac{11}{\sqrt{24}} = \frac{11}{2\sqrt{6}} \rightarrow \text{مساحت} = \frac{1}{2} \times \frac{11}{\sqrt{6}} = \frac{11}{2\sqrt{6}}$$

$$S = \pi r^2 \rightarrow S = \pi \times \left(\frac{11}{2\sqrt{6}}\right)^2 = \frac{121}{24} \pi \xrightarrow{\pi=3.14} \frac{121 \times 3.14}{24}$$

$$M \left| \begin{array}{c} x_A + x_B \\ y_A + y_B \end{array} \right| \rightarrow M \left| \begin{array}{c} 3 \\ 2 \end{array} \right|$$

$$m_{AB} = \frac{2}{-1} = -2 \rightarrow m_{CH} = 1$$

$$AB: y-2 = -2(x-3) \rightarrow y = -2x+8$$

$$CH: y+5 = 1(x+1) \rightarrow y = x-4$$

$$H \rightarrow -2x+8 = x-4 \rightarrow x = \frac{12}{3} = 4, y = \frac{0}{3} = 0$$

$$MH = \sqrt{\left(\frac{12}{3}-4\right)^2 + \left(\frac{0}{3}-2\right)^2} = \sqrt{4 \times \frac{1}{9}} = \frac{\sqrt{4}}{3} = \frac{2}{3}$$

$$m \times m' = -1$$

$$\frac{-(m-2)}{2-m} \times \frac{-(m+1)}{-2m+5} = -1$$

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

$$-m^2 - 2m + 2m + 2 = -10m + 2 + 2m^2 - 5m$$

$$2m^2 + 15m - 11 = 0$$

$$\Delta = b^2 - 4ac$$

$$\Delta = (15)^2 - 4 \times 2 \times (-11) = 225 + 88 = 313 > 0$$

معادله خط حقیقی ندارد ← به ازای هیچ مقدار از m

$$A \begin{cases} x + 2y = 5 \\ -2x + 5y = 1 \end{cases} \rightarrow \begin{cases} 2y + x = 5 \\ -2y + 5x = 1 \end{cases}$$

$$2x = 2 \rightarrow x = 1, y = 1 \rightarrow A \begin{vmatrix} 1 \\ 1 \end{vmatrix}$$

$$B \begin{cases} x + 2y = 5 \\ x + y = 5 \end{cases} \rightarrow \begin{cases} x + 2y = 5 \\ -x - y = -5 \end{cases}$$

$$y = -1, x = 2$$

$$m_{BC} = \frac{\frac{5}{2} + 1}{\frac{5}{2} - 2} = -1$$

$$BC: y + 1 = -1(x - 2) \rightarrow y = -x + 2 \rightarrow -x - y + 2 = 0$$

$$C \begin{cases} y = 2x - 1 \\ x + y = 5 \end{cases} \rightarrow \begin{cases} -2x + y = -1 \\ -x - y = -5 \end{cases}$$

$$-x = -2 \rightarrow x = 2, y = 3$$

$$M \begin{vmatrix} \frac{1}{2} \\ \frac{1}{2} \end{vmatrix}$$

$$AM = \sqrt{\left(\frac{1}{2} - 1\right)^2 + \left(\frac{3}{2} - 1\right)^2} = \sqrt{\frac{2}{4}} = \frac{\sqrt{2}}{2}$$

$$AH = \frac{|-1 - 1 + 5|}{\sqrt{(-1)^2 + (-1)^2}} = \frac{3}{\sqrt{2}}$$

$$\frac{AM}{AH} = \frac{\frac{\sqrt{2}}{2}}{\frac{3}{\sqrt{2}}} = \frac{\sqrt{2}}{3} = \frac{1}{3} = \left(\frac{2}{3}\right)$$

$$\frac{x}{A} + \frac{y}{B} = 1 \rightarrow \frac{x\beta + y\alpha}{AB} = 1 \rightarrow AB = x\beta + y\alpha$$

$$\frac{B}{A} = \frac{1}{r} \rightarrow A = rB$$

$$\frac{|AB|}{\sqrt{A^2 + B^2}} = \sqrt{r^2} \rightarrow \frac{rB^2}{\sqrt{2B^2}} = \sqrt{r^2} \rightarrow \frac{rB}{\sqrt{2}} = \sqrt{r^2} \rightarrow rB = \sqrt{2} \rightarrow B = \omega$$

$$A = 1.$$

$$\sqrt{r^2 + 1.0} = \sqrt{2\sqrt{2}}$$

$$my - \sum x = rm \rightarrow y = \frac{\sum x}{m} + r \rightarrow x = \frac{-m}{r} \Rightarrow B \Big|_0^{\frac{-m}{r}}$$

$$y + mx = x + r \rightarrow y = (1-x)x + r \rightarrow x = \frac{-r}{1-m} = \frac{r}{m-1} \Rightarrow C \Big|_0^{\frac{r}{m-1}}$$

$$\frac{\sum}{m} x + r = (1-x)x + r \rightarrow x = 0$$

$$y = r$$

$$\frac{\sum}{m} x + r = (1-m)x + r \rightarrow x = 0$$

$$y = r$$

$$A \Big|_r^0$$

$$S = \frac{1}{r} \left| \frac{\sum}{rm-1} - (-m) \right| = \frac{2}{r}$$

$$-2m + 2 = m^2 - m + \sum \rightarrow m^2 + \sum m - 1 = 0$$

$$m = \frac{-\sum \pm \sqrt{\sum^2 + 4}}{2} \rightarrow m = -1 \pm \sqrt{2}$$

$$\left| \frac{\sum + m(m-1)}{m-1} \right| = 2 \quad \frac{\sum + m(m-1)}{m-1} = 2 \rightarrow 2m - 2 = \sum + m^2 - m$$

$$\rightarrow m^2 - 3m + 4 = 0$$

$$\rightarrow (m-2)^2 = 0 \rightarrow m = 2$$

$$P = (-1 + \sqrt{2})(-1 - \sqrt{2})(2) = (\sum - 2) \times C = (-2)$$

$$\frac{\alpha + 0}{r} = r \rightarrow \alpha = \sum$$

$$y = rx - C \rightarrow x = 0$$

$$\rightarrow y = -C$$

$$\frac{\beta - C}{r} = -r \rightarrow \beta = -1$$

$$y - rx + C = 0 \rightarrow m = \frac{r}{1} = r$$

$$y + 1 = r(x - \sum) \rightarrow y + 1 = rx - 1$$

$$\rightarrow y = rx - 2$$

$$y = x + 2 \rightarrow m = 1 \Rightarrow m' = -1$$

$$y - r = -(x - 1) \rightarrow y - r = -x + 1 \rightarrow y = -x + C$$

$$-x + C = x + 2 \rightarrow -rx = r \rightarrow x = -1, y = \sum$$

$$\frac{r + b}{r} = \sum \rightarrow b = y$$

$$rb - a = (r \times y) - (-C) = 10$$

$$\frac{1 + a}{r} = -1 \rightarrow a = -r$$