

بنیامین نوری - تکلیف ۱۶ - یازدهم پسر B

$$AB \text{ دایره} = \begin{cases} \frac{x+c}{r} = 1 \\ \frac{y-c}{r} = 1 \end{cases} \quad m_{AB} = \frac{A+c}{y-c} = -1 \rightarrow m_{AB'} = \frac{1}{1} \rightarrow y-1 = \frac{1}{1}(x-1) \rightarrow y = x + \frac{-1+1}{1} \quad (1)$$

$$\boxed{y = x + \frac{c}{r}}$$

$$m_{BC} = \frac{y-1}{x-1} = \frac{-1}{1} \rightarrow BC \text{ دایره} = y-1 = \frac{-1}{1}(x+1) = y = \frac{-1x}{1} + \frac{-1+1}{1} \quad d_{BC} = \sqrt{(1)^2 + 1^2} = \Delta$$

$$\rightarrow 1y + 1x - \Delta = 0 \rightarrow \frac{|1+1-\Delta|}{\sqrt{1^2+1^2}} = \frac{1}{\Delta} = 1 \rightarrow \Delta - 1 = 0 \rightarrow \Delta = 1 \rightarrow \text{مماس بر دایره است}$$

$$\frac{a}{r} = \frac{1}{1} \rightarrow \boxed{a=1} \quad \begin{cases} 1y - 1x = 1 \\ 1y - 1x = 1 \end{cases} \quad \frac{|1-1|}{\sqrt{1^2+1^2}} = \frac{0}{\sqrt{2}} = 0 = 1r \rightarrow \pi r^2 = \pi \times \frac{1}{\sqrt{2}} \times \frac{1}{\sqrt{2}} = \boxed{\frac{1}{2}\pi}$$

$$M = \begin{cases} \frac{1+1}{1} = 2 \\ \frac{1+1}{1} = 2 \end{cases} \quad m_{AB} = \frac{y-1}{x-1} = -1 \rightarrow m_{CH} = 1 \rightarrow y+1 = 1(x+1) \rightarrow y = x-1$$

$$\rightarrow y-1 = -1(x-1) \Rightarrow y = -x+2 \quad \left. \begin{array}{l} \text{نقطه تقاطع} \\ H = \text{مماس} \end{array} \right\} \rightarrow x-1 = -x+2 \rightarrow 2x = 3 \rightarrow x = \frac{3}{2}$$

$$\rightarrow d_{MH} = \sqrt{(\frac{1}{2})^2 + (\frac{1}{2})^2} = \boxed{\frac{\sqrt{2}}{2}} \quad y = \frac{3-1}{2} = \boxed{1}$$

$$\rightarrow \frac{m+1}{1m-1} = \frac{\Delta-m}{1m-1} \rightarrow -1m^2 + 1m - 1 = 1m^2 + m - 1 \rightarrow \Delta m^2 - 1m + 1 = 0 \rightarrow \Delta < 0 \quad \text{پاشی هجده}$$

$$A \rightarrow x+1x-1=1 \rightarrow x=1/y=1/B \rightarrow x=1/y=-1/C \rightarrow x+1x-1=1 \rightarrow x=\frac{\Delta}{1}/y=\frac{1}{1}$$

$$AH = \frac{|1+1-1|}{\sqrt{1^2+1^2}} = \boxed{\sqrt{2}} \quad M \rightarrow x = \frac{1+\Delta}{1} = \frac{1}{1}/y = \frac{-1+\Delta}{1} = \frac{1}{1} \rightarrow d_{AM} = \sqrt{(\frac{1}{1})^2 + (\frac{1}{1})^2} = \sqrt{\frac{\Delta}{1}}$$

$$\frac{AM}{AH} = \frac{\Delta\sqrt{2}}{1\sqrt{2}} = \boxed{\frac{\Delta}{1}} \quad \leftarrow \text{جواب نهایی}$$

$$y-0 = \frac{-1}{1}(x-A) \rightarrow y = \frac{-x}{1} + \frac{A}{1} \quad A=1B \quad \frac{|0+0-1|}{\sqrt{1^2+\frac{1}{1}}} = \frac{1}{\sqrt{2}} = \frac{x}{\sqrt{2}} = x\sqrt{2} \rightarrow \boxed{B=\Delta}$$

$$y-B = \frac{-1}{1}(x-0) \rightarrow y = \frac{-x}{1} + B \quad \boxed{A=1}$$

$$y = (1-m)x + 1 \quad y_0 \times x_0 = \frac{\Delta}{1} \rightarrow y_0 = 1 \rightarrow x_0 = \frac{\Delta}{1} \rightarrow \left| \frac{-1}{1-m} - \left(-\frac{1 \times m}{1} \right) \right| = \left| \frac{-1+m-m^2}{1-m} \right| = \frac{\Delta}{1}$$

$$\boxed{I} \rightarrow -m^2 + m - 1 = \Delta - \Delta m \rightarrow m^2 - 9m + 9 \rightarrow (m-3)^2 \rightarrow \boxed{3}$$

$$\boxed{II} \rightarrow -m^2 + m - 1 = -\Delta + \Delta m \rightarrow m^2 + 1m - 1 \rightarrow \frac{-1 \pm \sqrt{1+4}}{2} \rightarrow \boxed{\frac{-1+\sqrt{5}}{2}} \quad \boxed{\frac{-1-\sqrt{5}}{2}}$$

$$\rightarrow 9 \times (1-\Delta) = \boxed{-9}$$

$$m_1 = m_2 = 2 \rightarrow \text{نقطه زنی} \rightarrow (2, 1) \rightarrow \frac{x_2 + 2}{2} = 2 \rightarrow x_2 = 2 / \frac{y_2 + 1}{2} = -2 \rightarrow y_2 = -5$$

$$y + 5 = 2(x - 2) \rightarrow \boxed{y = 2x - 9}$$

9

$$m_1 = 1 \rightarrow m_2 = -1 \rightarrow y - 2 = -1(x - 1) \rightarrow \boxed{y = -x + 3} \text{ } d_{AA'} \rightarrow -x + 3 = x + 5 \rightarrow 2x = -2$$

$$\frac{a+1}{2} = -1 \rightarrow \boxed{a = -3} \quad \frac{b+2}{2} = 2 \rightarrow \boxed{b = 9} \rightarrow 12 + 3 = 15$$

$$\boxed{y = 5} \leftarrow \boxed{x = -1}$$

10