

برای آن نرغی تلفی سانه دم

$$A(-4, -1) \quad B(2, 1)$$

سوال ۱:

$$M: \left(\frac{x+2}{2}, \frac{y-1}{2} \right) = (1, 1) \quad m_{AB} = \frac{1 - (-1)}{2 - (-4)} = \frac{2}{-6} = -\frac{1}{3}$$

$$m_1 = \frac{1}{3}$$

$$y - y_1 = m(x - x_1) \rightarrow y - 1 = \frac{1}{3}(x - 2) \rightarrow y = \frac{1}{3}x + \frac{1}{3}$$

$$A(2, 1)$$



$$BC: \sqrt{(-4 - (-1))^2 + (1 - 3)^2} = \omega$$

سوال ۲:

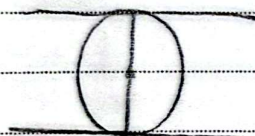
$$m_{BC} = \frac{3 - 1}{-1 - (-4)} = \frac{2}{3} \rightarrow y - 3 = \frac{2}{3}(x + 1)$$

$$y = \frac{2}{3}x + \frac{11}{3} \rightarrow 3y - 2x - 11 = 0$$

$$AH = \frac{|3 \cdot 2 - 2 \cdot 1 - 11|}{\sqrt{3^2 + 2^2}} = \frac{10}{\sqrt{13}} = \frac{10\sqrt{13}}{13}$$

$$BC - AH = \omega - \frac{10\sqrt{13}}{13} = \frac{10\sqrt{13}}{13}$$

$$y - x - 1 = 0$$



$$y - x - 1 = 0 \rightarrow y = x + 1$$

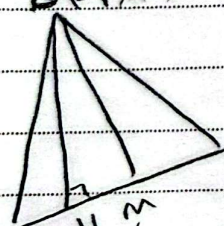
$$\frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{|-1 - (-1)|}{\sqrt{1^2 + 1^2}} = \frac{0}{\sqrt{2}} = 0$$

سوال ۳:

$$\pi r^2 = \frac{9}{\omega} \pi$$

$$\frac{9\sqrt{5}}{\omega} \times \frac{1}{r} = \frac{3\sqrt{5}}{\omega} \rightarrow r = \frac{3\sqrt{5}}{\omega}$$

$$B(-1, 3)$$



$$m_{AB} = \frac{3 - 3}{-1 - 2} = \frac{0}{-3} = 0$$

$$y - 3 = 0(x - 2) \rightarrow y = 3$$

$$y = 3 \rightarrow y - 3 = 0$$

$$B(-1, 3)$$

$$A(2, 3)$$

$$\frac{y - 3}{x - 2} = \frac{3 - 3}{-1 - 2} = 0$$

$$AH = \frac{|1 \cdot 2 - 1 \cdot 3 - 1|}{\sqrt{1^2 + 1^2}} = \frac{0}{\sqrt{2}} = 0$$

$$CM = \sqrt{(2 - 1)^2 + (3 - 1)^2} = \sqrt{5}$$

$$CM^2 = CH^2 + MH^2$$

$$5 = \frac{1}{2} + MH^2 \rightarrow MH = \frac{3}{2}$$

$$\frac{1}{2} = \frac{1}{2} + \frac{1}{2} = 1$$

سوال ۴:

$$(2m-2)x + (\omega-m)y - 1 = 0 \rightarrow \omega = \frac{-2m+2}{\omega-m}$$

سوال 5

$$(m+1)x + (2m-4)y + 1 = 0 \rightarrow \omega = \frac{-m-1}{-2m+4}$$

$$\frac{-2m+2}{\omega-m} = \frac{-(-2m+4)}{-m-1} \rightarrow -2m+2(m+1) = (\omega-m)(-2m+4)$$

$$-2m^2 - m + 2 = 2m^2 - 4m + 2$$

$$-4m^2 + 3m - 1 = 0 \rightarrow \Delta < 0$$

جوابی ندارد

$$AB = x + 2y = 1$$

$$x + 2y = 1$$

$$AC = y = 2x - 1$$

$$y - 2x = -1$$

$$BC = x + y = 1$$

$$\omega y = \omega \rightarrow y = 1 \quad \left. \begin{array}{l} x = 1 \\ y = 1 \end{array} \right\} A(1,1)$$

سوال 6

$$x + 2y = 1$$

$$x + y = 1$$

$$B(\omega, -1)$$

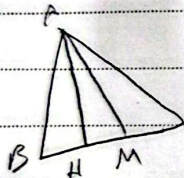
$$y - 2x = -1$$

$$-x + y = -1$$

$$C\left(\frac{\omega}{2}, \frac{1}{2}\right)$$

$$-2x = -\omega \rightarrow x = \frac{\omega}{2}$$

$$y = \frac{1}{2}$$



$$M \left| \begin{array}{l} \frac{\omega}{2} + \omega = \frac{1}{2} \\ \frac{1}{2} \\ -1 + \frac{1}{2} = -\frac{1}{2} \end{array} \right. \frac{1}{2}$$

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

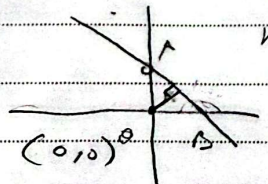
$$M \left| \begin{array}{l} \frac{1}{2} + 1 \\ \frac{\omega}{2} - \omega \\ \frac{1}{2} \end{array} \right. \frac{1}{2}$$

$$y + 1 = -1(x - \omega)$$

$$y = -x + 1 - \omega \rightarrow y + x - 1 + \omega = 0$$

$$AH = \frac{|1 + 1 - 1 + \omega|}{\sqrt{1+1}} = \frac{|1 + \omega|}{\sqrt{2}}$$

$$\frac{AM}{AH} = \frac{\frac{\sqrt{\omega}}{2}}{\frac{|1 + \omega|}{\sqrt{2}}} = \frac{\omega \times \sqrt{2}}{2 \times |1 + \omega|} = \frac{\omega}{\sqrt{2} |1 + \omega|}$$



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

$$y - A = -\frac{1}{2}(x - \omega)$$

$$y = -\frac{1}{2}x + \frac{\omega}{2} + A \rightarrow y + \frac{1}{2}x - A - \frac{\omega}{2} = 0$$

$$y = -\frac{1}{2}(x - \omega)$$

$$y - 0 = -\frac{1}{2}x + \frac{\omega}{2}$$

$$y + \frac{1}{2}x - \frac{\omega}{2} = 0$$

$$\frac{|1 \times 0 + \frac{1}{2} \times \omega - \frac{\omega}{2}|}{\sqrt{1 + \frac{1}{4}}} = \sqrt{2}$$

$$\sqrt{1 + \frac{1}{4}}$$

$$AB = \sqrt{(0 - \omega)^2 + (\omega - 0)^2} = \sqrt{2\omega^2}$$

$$\frac{A}{\sqrt{2\omega^2}} = \sqrt{2\omega^2} \times \frac{1}{\sqrt{2\omega^2}} = 1$$

$$\frac{\omega}{2} = \frac{\sqrt{2}}{2} \times \sqrt{2\omega^2} = \omega$$

$$\omega \sqrt{2}$$

$$\frac{A}{\sqrt{2\omega^2}} = \sqrt{2\omega^2} \times \frac{1}{\sqrt{2\omega^2}} = 1$$

سوال 7

$$\frac{|1 \times 0 + \frac{1}{2} \times \omega - A|}{\sqrt{1 + \left(\frac{1}{2}\right)^2}} = \sqrt{2}$$

$$1 + \frac{1}{4} = \frac{\omega}{2}$$

Arman

برای شریفی تلفیق سری سائزدهم

$$m\gamma - \epsilon n = 2m \quad \gamma + mn = n + 2$$

$$(1) \gamma = 0 \Rightarrow n = -\frac{m}{\epsilon} \quad (2) mn - n = 2 \Rightarrow n = \frac{2}{m-1}$$

$$\frac{\epsilon n + 1}{m} = \frac{n(m-1) + 2}{m} \Rightarrow n = 0 \quad \gamma = 2 \quad (0, 2) \Rightarrow n = 2$$

$$(n, 0), (n, 2), (0, 2) \Rightarrow \frac{1}{\epsilon} \times 2 \times \left| \frac{2}{m-1} - \left(-\frac{m}{\epsilon}\right) \right| = \frac{\omega}{\epsilon}$$

$$\frac{2}{m-1} + \frac{m}{\epsilon} = \frac{\omega}{\epsilon} \Rightarrow \frac{\epsilon + m^2 - m}{\epsilon(m-1)} = \frac{\omega}{\epsilon} \Rightarrow \epsilon + m^2 - m = \omega(m-1) \Rightarrow m^2 - 9m + 9 = 0$$

$$\frac{2}{m-1} + \frac{m}{\epsilon} = -\frac{\omega}{\epsilon} \Rightarrow \epsilon(m^2 - m) = -\omega(m-1) \Rightarrow m^2 + \epsilon(m-1) = 0$$

$$\Delta = 1 + 4 + 4 = 9 \Rightarrow \frac{-\epsilon \pm \sqrt{9}}{2} = \frac{-\epsilon \pm 3}{2} \Rightarrow 2 \times (-2, \sqrt{3}) \times (-2, \sqrt{3}) = -3$$

$$(2, -3)$$

$$\gamma = 2m - 3$$

نقطه (0, 2) از خط راست m عبور می کند

$$n(2, -2) \quad \frac{0 + nA'}{2} = 2 \quad nA' = 4 \quad \frac{-2 + 2A'}{2} = -2$$

$$2A' = -1$$

خط مورد نظر موازی خط AB است پس شیب آن 1/2 است

$$\gamma = 2m - b \Rightarrow -1 = 2 \times \frac{1}{2} + b \Rightarrow \gamma = 2m - 9$$

$$A(1, 2)$$

$$\frac{2 \times 1}{2} = 1$$

$$\gamma = n + 1 \Rightarrow \frac{A}{A+B} = -1$$

$$\gamma - 2 = -1(n-1) \Rightarrow \gamma = -n + 1$$

$$\gamma = n + 1$$

$$\gamma = -n + 1$$

$$2x = 9 \Rightarrow \gamma = 9 \quad n = -1$$

$$H(-1, 9)$$

$$H(-1, 9)$$

$$\frac{1 + 9A'}{2} = -1 \Rightarrow A' = -3 \quad \frac{2 \times 2A'}{2} = 9 \Rightarrow A' = 9$$

$$A'(-3, 9)$$

$$a = -3 \quad b = 9$$

$$2b - a = 2 \times 9 - (-3) = 21$$