

SUBJECT:

Year: Month: Day:

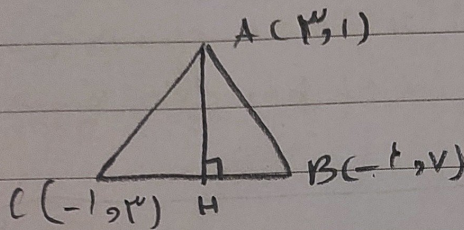
(2,1) (8,9)

M(3,1)

$$\frac{y}{x} = r \quad a = \frac{\Delta y}{\Delta x} = \frac{1-9}{2-8} = \frac{-8}{-6} = \frac{4}{3}$$

$$\frac{1-y}{x} = 1 \Rightarrow a' = \frac{1}{x}$$

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

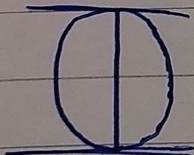


$$BC = \sqrt{3^2 + 2^2} = \sqrt{13}$$

$$a = \frac{\Delta y}{\Delta x} = \frac{3-1}{-1-3} = \frac{2}{-4} = -\frac{1}{2}$$

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

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

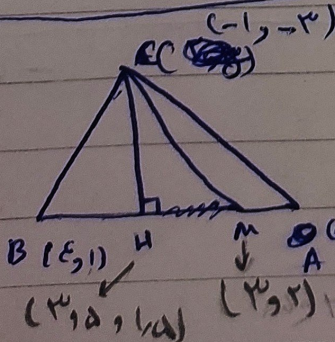


$$xy = ax + r \rightarrow xy - ax - r = 0 \Rightarrow xy - ax - 1 = 0$$

$$\frac{y}{x} = \frac{1}{ax}$$

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

$$\Rightarrow r = \frac{3\sqrt{2}}{2} = \frac{3}{\sqrt{2}} \quad S = \pi r^2 = \pi \times \left(\frac{3}{\sqrt{2}}\right)^2 = \frac{9}{2}\pi$$



MH = 9

$$a_{AB} = \frac{\Delta y}{\Delta x} = \frac{1-(-3)}{1-(-1)} = \frac{4}{2} = 2$$

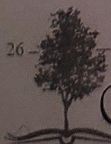
$$a_M = \frac{2+3}{1} = 5 \quad y_M = 1+3 = 4$$

$$AB \rightarrow y-1 = 2(x-1) \rightarrow y = 2x-1$$

$$CH \rightarrow y+3 = 1(x+1) \rightarrow y = x-2$$

$$x-2 = -x+4 \Rightarrow 2x = 6 \Rightarrow x = 3$$

$$MH = \sqrt{\left(\frac{1}{2}\right)^2 + \left(\frac{1}{2}\right)^2} = \frac{\sqrt{2}}{2}$$



Senobar

$$\begin{cases} (m+1)x - (r_m - \epsilon)y + 1 = 0 \rightarrow m_1 = \frac{-(m+1)}{-(r_m - \epsilon)} = \frac{m+1}{r_m - \epsilon} & -\omega \\ (r_m - r)x + (\omega - m)y - v = 0 \rightarrow m_2 = \frac{-(r_m - r)}{r_m - r} = \frac{r_m - r}{m - \omega} = \frac{r(m-1)}{m-\omega} & -\omega \end{cases}$$

$$m_1 \times m_2 = -1$$

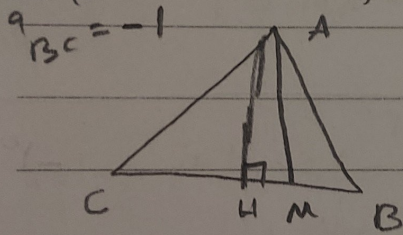
$$\frac{r_m - r}{m - \omega} = \frac{-r_m + \epsilon}{m + 1} \rightarrow r_m^2 - r_m + r_m - r = -r_m^2 + \epsilon m + 1 - m - r$$

$$\omega m^2 - 1 r_m + 1 \omega = 0 \rightarrow \Delta < 0$$

هیچگاه این دو خط بر هم نمی‌خورند

$$\begin{cases} AB: x + ry = r \\ AC: y = r\alpha - 1 \\ BC: x + y = \epsilon \end{cases}$$

$$\frac{AM \sim \omega}{AH \sim \epsilon} = ? \rightarrow \frac{\frac{\omega \sqrt{r}}{r}}{\sqrt{r}} = \frac{\omega}{r}$$



$$\begin{cases} AB: y = \frac{r}{r} - \frac{\alpha}{r} \\ AC: y = r\alpha - 1 \end{cases} \rightarrow A(1, 1)$$

$$\begin{cases} AB: y = \epsilon - \alpha \\ BC: y = \frac{r}{r} - \frac{\alpha}{r} \end{cases} \rightarrow B(\omega, -1)$$

$$\begin{cases} AC: y = \epsilon - \alpha \\ BC: y = r\alpha - 1 \end{cases} \rightarrow C(\frac{\omega}{\epsilon}, \frac{1}{\epsilon})$$

$$M\left(\frac{\frac{\omega}{r} + \omega}{r}, \frac{-1 + \frac{1}{\epsilon}}{r}\right)$$

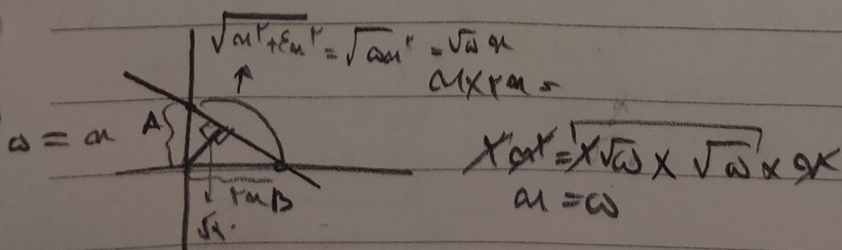
$$M\left(\frac{1}{r}, \frac{r}{r}\right)$$

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

$$AH = \frac{|1 + 1 - \epsilon|}{\sqrt{r}} = \sqrt{r}$$

$$m = -\frac{1}{r} \quad \text{فاصله از خط} = \sqrt{r} = r\sqrt{\omega}$$

-v



$$AB = \omega \sqrt{\omega}$$

$$m \times r\alpha = \sqrt{r} \times \omega \sqrt{r}$$

$$\frac{\omega \times r\alpha}{r} = \omega \times \sqrt{r}$$

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

$$my - (ax = r)m^r$$

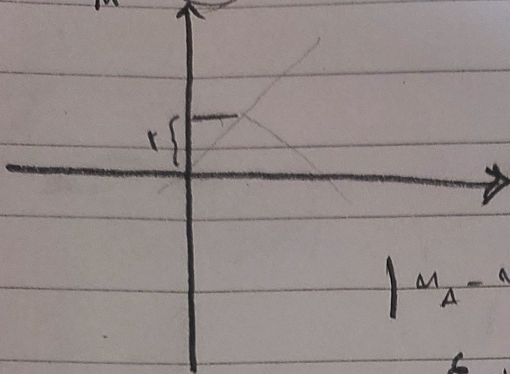
$$y = \frac{r}{m} a + r$$

$$y = 0 \rightarrow m = -\frac{r}{1-m} = \frac{r}{m-1} \quad -1$$

$$y + ma = a + r \quad 1-m$$

$$y = (1-m)a + r$$

$$\frac{a}{r} \times \frac{r}{r} = \frac{a}{r}$$



$$|m_A - m_B| = \frac{a}{r} \rightarrow \left| \frac{r}{m-1} + \frac{m}{r} \right| = \frac{a}{r}$$

$$\left| \frac{r + m^2 - m}{r(m-1)} \right| = \frac{a}{r}$$

$$m^2 - m + r = am - a \rightarrow m^2 - 4m + 9 = 0$$

$$(m-3)^2 = 0 \rightarrow m = 3$$

$$m = 3 \rightarrow a = -1 \times 3 = -3$$

$$m^2 - m + r = -am + a$$

$$m^2 + 4m - 1 = 0 \rightarrow P = -1$$

$$a = r \rightarrow y = 2a - r$$

$$rM - A = A'$$

$$M(r, -r) \quad -9$$

$$A = (r, 1) \quad F = r \quad -r - 1 = -a \quad A = (r, -a)$$

$$y + a = r(a - r) \rightarrow y = 2a - r$$

$$A(1, r) \quad y = a + d \quad A'(a, b) \quad r(b - a) = 9 - 1$$

$$y - r = -(a + 1) \quad a > 1 \quad rM - A = A'$$

$$a' = -1$$

$$\begin{cases} y = -a + r \\ y = a + d \end{cases}$$

$$a = -r - 1 = -4$$

$$b = +M + r = 4$$

$$M = (-1, +r)$$

$$a + d = -a + r$$

$$2a = -r$$

$$a = -1$$

$$y = +r$$

$$r(b - a) = 1r + 15 = 16$$

