

مسئله ۱۳ و ۱۴
در صورتی که

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$$-4 = 4a + b$$

$$1 = 2a + b$$

$$-14 = 2a \rightarrow a = -7 \rightarrow \frac{a}{b} = \frac{1}{7} \Rightarrow 1 = \frac{7}{7} + b \rightarrow b = \frac{4}{7}$$

$$\rightarrow y = \frac{1}{7}x + \frac{4}{7}$$

$$\text{طول ضلع BC} = \sqrt{(2-1)^2 + (-1-4)^2} = \sqrt{25} = 5$$

$$x^2 + 2y + 4x - 5 = 0$$

$$\text{طول AH} = \frac{|1+12-5|}{\sqrt{9+16}} = \frac{8}{5} = \frac{16}{10}$$

طول ضلع BC، ۳ واحد بیشتر از طول ارتفاع AH است

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

$$\frac{y}{x} = \frac{1}{2} \rightarrow \frac{y}{x} = \frac{1}{2} \rightarrow a = 2$$

بجای آن ها برابر است

$$\frac{y}{x} = \frac{1}{2} \text{ و } y - 2x = 2 \Rightarrow \text{طول} = \frac{|14 - 2|}{\sqrt{14 + 4}} = \frac{12}{\sqrt{18}} = \frac{12}{3\sqrt{2}} = \frac{4}{\sqrt{2}} = \frac{4\sqrt{2}}{2} = 2\sqrt{2}$$

$$S = \pi r^2 = \frac{9}{4}\pi$$

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$$2 = 2a + b$$

$$1 = 4a + b$$

$$2a = -2 \rightarrow a = -1$$

$$b = 4$$

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$$b = 4$$

$$b = 4$$

$$b = 4$$

$$b = 4$$

$$y = -x + 5$$

$$y = x - 2$$

$$y = x - 2$$

$$y = x - 2$$

$$y = x - 2$$

$$y = x - 2$$

$$y = x - 2$$

$$y = x - 2$$

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$$(m-1)x + (d-m)y - 1 = 0$$

$$\frac{y}{x} = \frac{m+1}{m-1}$$

بجای آن ها رابطه عکس داریم

$$(m+1)x - (2m-4)y + 1 = 0$$

$$\frac{y}{x} = \frac{m+1}{2m-4}$$

$$\Rightarrow \frac{m+1}{2m-4} = \frac{m-1}{2m-4}$$

$$\Rightarrow 2m^2 - 2m - 2m = 2m^2 - 4m - 1 \cdot m + 2 \Rightarrow -2m^2 - m + 2 = 2m^2 - 4m + 2 \Rightarrow 4m^2 - 5m + 1 = 0$$

$$\Rightarrow 4 < 0 \rightarrow \text{دو جواب دارد} \rightarrow \text{دو نقطه تقاطع دارند}$$

مرحله ۱: $\begin{cases} y = 3 - x \Rightarrow y = x - 1 \\ y = x - 1 \Rightarrow y = x - 1 \end{cases}$
 $AB, AC = A$ نقطه $\Rightarrow \begin{cases} x + y = 1 \\ 2 + y = 1 \end{cases} \Rightarrow y = -1$
 $0 = 0x - 0 \Rightarrow x = 1 \Rightarrow y = 1$

مرحله ۲: $\begin{cases} x + y = 1 \\ 2 + y = 1 \end{cases} \Rightarrow y = -1$

مرحله ۳: $\begin{cases} y = x - 1 \\ y = x - 1 \end{cases} \Rightarrow C = \frac{1}{\sqrt{2}}$

$M = \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} \Rightarrow L = \sqrt{\left(\frac{1}{\sqrt{2}}\right)^2 + \left(\frac{1}{\sqrt{2}}\right)^2} = \frac{\sqrt{2}}{2} = \frac{\sqrt{2}}{2}$

نقطه A, B, C را به هم وصل می‌کنیم (از طریق خط مستقیم)

مرحله ۴: $\frac{AH}{AC} = \frac{1 + 1 - 1}{\sqrt{2}} = \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{1}{\sqrt{2}}$
 $x + y = 1$

مرحله ۵: $\frac{AM}{AH} = \frac{\frac{\sqrt{2}}{2}}{\frac{1}{\sqrt{2}}} = \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{1} = 1$

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$\begin{matrix} /0 & /0 \\ A & B \end{matrix} \quad A = b \quad b = 2b \Rightarrow \begin{matrix} /0 & /0 \\ b & b \end{matrix}$
 $y = -\frac{1}{2}x + b$
 $\frac{b}{\sqrt{2}} = \frac{1}{\sqrt{2}} \Rightarrow b = 1$

$\Rightarrow \begin{matrix} /0 & /0 \\ 1 & 1 \end{matrix} \Rightarrow \text{فاصله} = \sqrt{1^2 + 1^2} = \sqrt{2}$

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$my = fx + 2m \Rightarrow y = \frac{f}{m}x + 2$
 $y + mx = x + 2 \Rightarrow y = x(1 - m) + 2$
 $\Rightarrow \frac{f}{m} = 1 - m \Rightarrow \frac{f}{m} + m = 1 \Rightarrow \frac{f + m^2}{m} = 1 \Rightarrow f + m^2 = m \Rightarrow m^2 - m + f = 0$
 $\Rightarrow m = \frac{1 \pm \sqrt{1 - 4f}}{2}$

$\Rightarrow \frac{f}{m} + m = 1 \Rightarrow \frac{f}{m} = 1 - m \Rightarrow \frac{f}{m} + m = 1 \Rightarrow \frac{f + m^2}{m} = 1 \Rightarrow f + m^2 = m \Rightarrow m^2 - m + f = 0$
 $\Rightarrow m = \frac{1 \pm \sqrt{1 - 4f}}{2}$
 $\Rightarrow \Delta = 1 - 4f = 1 - 4 \times 1 = -3 \Rightarrow \Delta = -3$

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نقطه A: $x = \frac{xA + xA'}{2} \Rightarrow x = \frac{0 + xA'}{2} \Rightarrow xA' = 2x$

$y_M = \frac{yA + yA'}{2} \Rightarrow -1 = \frac{-1 + yA'}{2} \Rightarrow yA' = -1$

نقطه B: $-1 = f(x) + b \Rightarrow b = 9 \Rightarrow y' = x - 9$

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نقطه A: $\frac{AA'}{AA} = 1 \Rightarrow \frac{AA'}{AA} = -1 \Rightarrow \frac{AA'}{AA} = -1 \Rightarrow \frac{AA'}{AA} = -1$
 $\Rightarrow y = -x + 3$

نقطه B: $\begin{cases} y = -x + 3 \\ y = x + 0 \end{cases} \Rightarrow y = -x + 3$
 $\Rightarrow y = -x + 3$

$x_B = \frac{x_A + x_{A'}}{2} \Rightarrow -1 = \frac{1 + x_{A'}}{2} \Rightarrow -2 = 1 + x_{A'} \Rightarrow x_{A'} = -3$

$y_B = \frac{y_A + y_{A'}}{2} \Rightarrow 1 = \frac{-1 + y_{A'}}{2} \Rightarrow 2 = -1 + y_{A'} \Rightarrow y_{A'} = 3$

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$\Rightarrow A' / \frac{1}{4} = a \Rightarrow 2b - a = 12 - (-1) = 13$