

درسا صاف زاده

(سوال ۱)

$$M\left(\frac{4+\varepsilon}{5}, \frac{1-4}{5}\right) = (3, 1)$$

$$C(2, 1), C(4, -4) \rightarrow m = \frac{\Delta y}{\Delta x} = \frac{-4-1}{4-2} = \frac{-5}{2} = -\frac{5}{2} \quad mm' = -1$$

$$\rightarrow m' = \frac{1}{5} \quad y = \frac{1}{5}x + b \xrightarrow{(3, 1)} \frac{3}{5} + b = 1$$

$$\Rightarrow y = \frac{1}{5}x + \frac{2}{5}$$

$$A(3, 1) \quad B(-5, 5) \quad C(-1, 3)$$

سوال ۲

$$BC = \sqrt{(\Delta x)^2 + (\Delta y)^2} = \sqrt{(-3)^2 + (2)^2} = \sqrt{13} \rightarrow m_{BC} = \frac{2}{-3} = -\frac{2}{3}$$

$$\rightarrow y = -\frac{2}{3}x + b \xrightarrow{(-1, 3)} \frac{2}{3} + b = 3 \rightarrow y = -\frac{2}{3}x + \frac{11}{3}$$

AM:

$$\times 3 \rightarrow 3y = -2x + 11$$

$$AM = \frac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}} = \frac{|12 + 11 - 11|}{\sqrt{4 + 9}} = \frac{10}{5} = 2$$

$$xy - ax - y = 0 \quad (xy - x - y = 0) \times 2 \rightarrow$$

سوال ۳

$$\Rightarrow a = 2$$

$$xy - y - 1 = 0$$

$$\frac{|c - c'|}{\sqrt{a^2 + b^2}} = \frac{|-12|}{\sqrt{14 + 4}} = \frac{12}{\sqrt{18}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{4\sqrt{2}}{\sqrt{2}} = 4$$

$$\Rightarrow \frac{4\sqrt{2}}{2}$$

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

Arman

$$A(2, 3) \quad B(4, 1) \quad C(-1, -3)$$

(سوال ۴)

$$M = \left(\frac{2+4}{2}, \frac{1+3}{2} \right) = (3, 2)$$

$$m_{AB} = \frac{-2}{2} = -1 \quad m_{AB} \times m_{CM} = -1 \Rightarrow m_{CM} = 1$$

$$y_{AB} = -x + b \xrightarrow{(2, 3)} -2 + b = 3 \rightarrow y = -x + 5$$

$$y_{CM} = x + b \xrightarrow{(-1, -3)} -1 + b = -3 \rightarrow y_{CM} = x - 2$$

$$-x + 5 = x - 2 \rightarrow 2x = 7 \rightarrow x = \frac{7}{2}, y = \frac{3}{2}$$

$$H = \left(\frac{7}{2}, \frac{3}{2} \right) \quad MH = \sqrt{\left(-\frac{1}{2}\right)^2 + \left(\frac{1}{2}\right)^2} = \frac{\sqrt{2}}{2}$$

$$(3m-2)x + (5-m)y - 7 = 0, (m+1)x - (2m-4)y + 15 = 0 \quad (\text{سوال ۵})$$

$$\frac{-3m+2}{5-m} \times \frac{-m-1}{-2m+4} = -1 \rightarrow \frac{-3m+2}{5-m} = \frac{2m-4}{-m-1}$$

$$\rightarrow 3m^2 + m - 2 = -2m^2 + 14m - 20 \rightarrow 5m^2 - 13m + 18 = 0$$

لے این دو ضلعوں کو اپنے آپ پر عمود بنانے کے لیے

$$\begin{cases} AB = x + 2y - 15 \\ AC = y - 2x + 15 \\ BC = x + y - 45 \end{cases} \quad \begin{cases} (x+2y-15) \times 2 \\ y-2x+15 \end{cases}$$

$$2y = 2 \Rightarrow y = 1, x = 1 \Rightarrow A(1, 1)$$

$$3 - 2y = 4 - y \rightarrow y = -1, x = 5$$

$$\Rightarrow B(-1, 5)$$

$$y = \frac{3}{2}$$

$$C = \left(\frac{5}{2}, \frac{3}{2} \right)$$

$$M \left(\frac{1}{2}, \frac{11}{2} \right)$$

$$\frac{\sqrt{2} \times \sqrt{2}}{2} \times \frac{\sqrt{2}}{2}$$

Arman

$$AM = \sqrt{\frac{2}{9} + \frac{49}{9}} = \frac{\sqrt{51}}{3} = \frac{2\sqrt{13}}{3}$$

$$MH = \frac{|1 + 1 - 4|}{\sqrt{2}} = \frac{2}{\sqrt{2}} = \frac{\sqrt{2}}{1}$$

$$\frac{\sqrt{2} \times \sqrt{2}}{2}$$

$$y = -\frac{1}{r}x + b$$

$$d = \frac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}}$$

سوال 17

$$= \frac{|(\frac{1}{r}x_0) + 1(0) - b|}{\sqrt{1 + \frac{1}{r^2}}}$$

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

$$\frac{x|b|}{\sqrt{a}} = x\sqrt{a} \Rightarrow |b| = d$$

$$(0, y_A) \quad (x_B, 0)$$

$$\rightarrow -\frac{1}{r}x_B = -b \Rightarrow x_B = rb$$

$$\rightarrow y_A = b$$

$$AB = \sqrt{a^2 + b^2} = \sqrt{100 + 18} = 2\sqrt{5}$$

$$\begin{cases} my - xn = pm \Rightarrow y = \frac{x}{m} + p \\ y + mn = n + p \Rightarrow y = (1-m)x + p \end{cases}$$

سوال 18
موضع از مبدأ

$$\rightarrow \text{نقطه برخورد} = (0, p) \quad A$$

$$\begin{cases} y = 0 \\ y = (1-m)x + p \end{cases} \Rightarrow x = \frac{p}{m-1}, y = 0 \Rightarrow B(\frac{p}{m-1}, 0)$$

$$\begin{cases} y = 0 \\ y = \frac{x}{m} + p \end{cases} \Rightarrow x_B = -\frac{mp}{r}, 0 = y \Rightarrow C(-\frac{mp}{r}, 0)$$

$$S = \frac{\frac{r}{2} \times \text{base}}{r} = \frac{d}{r} \Rightarrow \text{مساحت} = \frac{d}{r} = BC = \sqrt{(\frac{p}{m-1} + \frac{mp}{r})^2}$$

$$= \frac{m^2 - m + 1}{r(m-1)} = \frac{d}{r} \Rightarrow m^2 - m + 1 = dm - d$$

$$m^2 - 4m + 9 = 0 \Rightarrow (m-3)^2 = 0$$

$$\Rightarrow m = 3$$

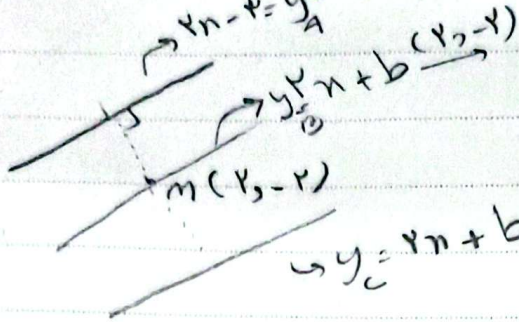
$$\frac{m^2 - m + 1}{r(m-1)} = \frac{d}{r} \Rightarrow m^2 - m + 1 = dm - d$$

$$m^2 + 1 = 0 \Rightarrow \frac{m^2 + 1}{m} = -1$$

Aman

$$-1 \times 1 = -1$$

$$y = 2x - 3 \quad m(2, -2)$$



$$2 + b = -2 \Rightarrow b = -4$$

$$\Rightarrow y_2 = 2x - 4$$

$$\frac{b-3}{2} = -4 \Rightarrow b = -4$$

$$y = 2x - 4$$

(سوال ۹)

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(سوال ۱۰)

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