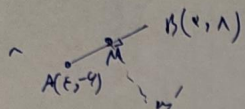


At present (19)

19

$$A(2, -4), B(0, 1) \Rightarrow x_M = \frac{2+0}{2} = 1, y_M = \frac{-4+1}{2} = -\frac{3}{2} \quad M(1, -\frac{3}{2})$$

(1)
(2)



$$m_{AB} = \frac{1 - (-4)}{0 - 2} = -\frac{5}{2} \quad m_{AB} = \frac{1 - (-4)}{0 - 2} = -\frac{5}{2} \Rightarrow \frac{1}{v} = -\frac{5}{2}$$

$$\frac{1}{v} (2 - 0) = y - 1 \Rightarrow \frac{1}{v} \cdot 2 = y - 1 \Rightarrow \frac{2}{v} = y - 1 \Rightarrow y = \frac{2}{v} + 1 \quad \checkmark$$

$$C(-1, 3), B(-5, 1), A(2, 1)$$

(2) (3)

$$BC = \sqrt{(-5 - (-1))^2 + (1 - 3)^2} = \sqrt{16 + 4} = \sqrt{20} = 2\sqrt{5} \quad \checkmark \quad m_{BC} = \frac{1 - 3}{-5 - (-1)} = \frac{-2}{-4} = \frac{1}{2}$$

$$\Rightarrow (2 - (-1)) \left(\frac{1}{2} \right) = (y - 3) \Rightarrow \frac{3}{2} = y - 3 \Rightarrow y = \frac{3}{2} + 3 = \frac{9}{2} \Rightarrow -\frac{5}{2}x + \frac{1}{2}y - 3 = 0$$

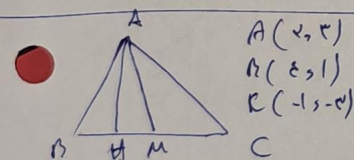
$$d = \frac{\left| -\frac{5}{2}(2) + \frac{1}{2}(\frac{9}{2}) - 3 \right|}{\sqrt{\left(\frac{5}{2}\right)^2 + \left(\frac{1}{2}\right)^2}} = \frac{\left| -5 + \frac{9}{4} - 3 \right|}{\sqrt{\frac{25}{4} + \frac{1}{4}}} = \frac{\left| -\frac{11}{4} \right|}{\sqrt{\frac{26}{4}}} = \frac{\frac{11}{4}}{\frac{\sqrt{26}}{2}} = \frac{11}{2\sqrt{26}} \quad \checkmark \Rightarrow |2 - d| = 2 \quad \checkmark$$

$$\textcircled{*} \quad 5y = 2x + 2 \Rightarrow 5y - 2x - 2 = 0 \rightarrow a = 2, b = -5, c = -2 \quad d = \frac{|c - c'|}{\sqrt{a^2 + b^2}} \Rightarrow d = \frac{|-2 - (-2)|}{\sqrt{5^2 + (-2)^2}} = \frac{0}{\sqrt{29}} = 0$$

2y - x = 2 \Rightarrow 2y - x - 2 = 0 \quad \text{رقعة!}

(1, 2)
 $r = \frac{r_0}{\sqrt{5}} \leftarrow \frac{4}{\sqrt{5}}$
 $S = \frac{9\pi}{2}$

$$\Rightarrow 2r = \sqrt{\frac{16}{5}} \Rightarrow r = \sqrt{\frac{4}{5}} \quad S = r^2 \pi = \left(\sqrt{\frac{4}{5}} \right)^2 \pi = \frac{4}{5} \pi$$



A(2, 3)
B(2, 1)
C(-1, -2)

$$x_M = \frac{2+2}{2} = 2, y_M = \frac{3+1}{2} = 2 \quad M(2, 2)$$

$$d = \sqrt{\Delta x^2 + \Delta y^2} = \sqrt{(2 - (-1))^2 + (2 - (-2))^2} = \sqrt{9 + 16} = \sqrt{25} = 5 \quad \checkmark$$

$$m_{AB} = \frac{\Delta y}{\Delta x} = \frac{3 - 1}{2 - 2} = \frac{2}{0} = \text{undefined}$$

$$(y - y_0) = m(x - x_0) \Rightarrow y - 1 = -1(x - 2)$$

$$\Rightarrow y = -x + 3$$

$$d = \frac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}} = \frac{|-(-1) + 3 - 3|}{\sqrt{1 + 1}} = \frac{0}{\sqrt{2}} = 0$$

$$CH^2 + MH^2 = CM^2 \Rightarrow \left(\frac{9}{\sqrt{5}} \right)^2 + MH^2 = (5)^2 \Rightarrow MH = \sqrt{16} = 4 \quad \checkmark$$

(د) سوال

(2)

$$(m+1)z - (x_1 - 1)y + 1 = 0 \quad (x_1 - 1)z + (1 - y)y - 1 = 0$$

$$m = \frac{m+1}{x_1 - 1} \quad m' = \frac{x_1 - 1}{-d + m} \quad mm' = -1 \Rightarrow \frac{m+1}{x_1 - 1} \times \frac{x_1 - 1}{-d + m} = -1$$

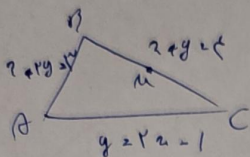
$$\Rightarrow x_1' + m - 1 = -x_1' + y_1 - 1 = 0 \Rightarrow \Delta m' - \Delta m + 1 = 0 \xrightarrow{\Delta} A < 0 \text{ مقلوب } \checkmark$$

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$$AB: x + y = 2$$

$$AC: y = x - 1$$

$$BC: x + y = 2$$



$$y = x - 1 \Rightarrow 2 \times (x - 1) = 2 \Rightarrow x - 1 = 1 \Rightarrow x = 2$$

$$\Rightarrow x - 1 = 1 \Rightarrow x = 2$$

$$\frac{d}{x} + y = \frac{1}{x} \Rightarrow y = \frac{1}{x}$$

$$\left. \begin{array}{l} x + y = 2 \\ x + y = 2 \end{array} \right\} \Rightarrow x - y = 2 \Rightarrow y = 1 \Rightarrow x - 1 = 2 \Rightarrow x = 3 \Rightarrow B(3, -1) \quad A(1, 1)$$

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

$$m = \frac{\frac{d}{x} + \frac{1}{x}}{x} = \frac{1}{x} \quad y = \frac{-\frac{d}{x} + \frac{1}{x}}{x} = \frac{1}{x} \quad m\left(\frac{1}{x}, \frac{1}{x}\right)$$

$$AM = \sqrt{\left(1 - \frac{1}{x}\right)^2 + \left(\frac{1}{x} - 1\right)^2} = \sqrt{\frac{d^2}{x}} = \frac{d\sqrt{x}}{x} \quad m_{BC} = \frac{\frac{1}{x} + \frac{1}{x}}{\frac{1}{x}} = 1$$

$$1(x - d) = y + 1 \Rightarrow x - y = y + 1 \Rightarrow x - 2y = 1$$

$$d = \frac{|1(1) - 1 - 1|}{\sqrt{1^2 + 1^2}} = \frac{1}{\sqrt{2}}$$

$$\frac{AM}{AH} = \frac{\frac{d\sqrt{x}}{x}}{\frac{d}{x}} = \frac{d}{x} \checkmark$$

$$m = -\frac{1}{r} \quad y - ar + b = 0 \quad a = -\frac{1}{r} \Rightarrow y + \frac{1}{r}r + b = 0$$

سؤال 1

$$d = \frac{|a(0) + b(0) + c|}{\sqrt{\frac{1}{r^2} + 1}} = \frac{|c|}{\sqrt{\frac{1}{r^2} + 1}} \Rightarrow |c| = \sqrt{\frac{1}{r^2} + 1} d \Rightarrow C = \pm d$$

$$C = d \Rightarrow y + \frac{1}{r}r + d = 0 \Rightarrow r_1 = -10 \quad \left. \begin{array}{l} A(0, d) \\ B(10, 0) \end{array} \right\} \rightarrow AB = \sqrt{100}$$

$$C = -d \Rightarrow y + \frac{1}{r}r + d = 0 \Rightarrow r_1 = 10 \quad \left. \begin{array}{l} A(0, -d) \\ B(-10, 0) \end{array} \right\} \rightarrow AB = \sqrt{100}$$

$$my_1 - \epsilon_2 = pm \quad y_1 + m_2 = r + y \quad y_1 = y_2$$

$$y_1 = \frac{\epsilon}{m}r + y \quad y_2 = p(1-m) + y \Rightarrow \frac{\epsilon}{m}(r) + y = 2(1-m)r + y$$

سؤال 1

2

$$\Rightarrow \frac{\epsilon}{m}(r) = 2(1-m)r \Rightarrow my = 2m \Rightarrow y = 2 \Rightarrow h = 2$$

$$y = 0 \Rightarrow y = 2(1-m) + y \Rightarrow r = \frac{y}{m-1} \left\{ \left| \frac{y}{m-1} - \left(-\frac{m}{r}\right) \right| \times r \times \frac{1}{r} = d \Rightarrow \left| \frac{\epsilon + m^2 - m}{m-1} \right| = d$$

$$y = 0 \Rightarrow r = -\frac{m}{r}$$

$$\frac{m^2 - m + \epsilon}{m-1} = d \Rightarrow m^2 - 4m + 4 = 0 \Rightarrow (m-2)^2 = 0 \Rightarrow m = 2$$

$$\frac{m^2 - m + \epsilon}{-m + 1} = d \Rightarrow m^2 + (m-1) = 0 \Rightarrow P = \frac{\epsilon}{a} = -1 \Rightarrow \epsilon = -1 \times a = -1$$

$$y = 2r - \epsilon \quad \frac{2 + \epsilon'}{r} = 2 \quad r + \epsilon' = \epsilon \Rightarrow r = \epsilon - \epsilon'$$

سؤال 1

$$\frac{y + y'}{r} = -1 \Rightarrow y + y' = -r \Rightarrow y = -y' - r$$

$$(-y' - r) = r(\epsilon - \epsilon') - \epsilon \Rightarrow y' = 2r' - \epsilon + r - 1 \Rightarrow y' = 2r' - 9$$

$$A(1, r) \quad y_1 = 2 + d \quad A'(2, 1) \quad y_1 = 2 + d \quad A(1, r) \quad m' = AA' \quad m = 1 \Rightarrow m' = -1 \Rightarrow m' = -1$$

سؤال 1

2

$$(y_1 - y_0) = m(r - r_0) \Rightarrow y_1 - y = -1(r - 1) \Rightarrow y_1 = -r + 1$$

$$y_1 = y_2 \Rightarrow -r + 1 = 2 + d \Rightarrow r = -1 \quad y = -(-1) + 1 = 2$$

$$a = 2(-1) - 1 = -3 \quad b = 2(2) - 1 = 3 \quad \left\{ \begin{array}{l} yb - a = 2(3) - (-3) = 9 \end{array} \right.$$