

$$A \begin{bmatrix} 2 \\ -4 \end{bmatrix}, D \begin{bmatrix} 2 \\ 1 \end{bmatrix}$$

$$\text{تیب} = \frac{y_1 - y_2}{x_1 - x_2} = \frac{1 + 4}{2 - 2} = \frac{1}{0} = \infty \rightarrow \text{تیب} = \frac{1}{0}$$

$$y - y_1 = m(x - x_1)$$

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

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

$$\text{نقطہ } A, B: \begin{bmatrix} \frac{x_1 + x_2}{2} \\ \frac{y_1 + y_2}{2} \end{bmatrix} = \begin{bmatrix} \frac{2+2}{2} \\ \frac{1+1}{2} \end{bmatrix} = \begin{bmatrix} 2 \\ 1 \end{bmatrix}$$

$$A \begin{bmatrix} 2 \\ 1 \end{bmatrix}, D \begin{bmatrix} 2 \\ 1 \end{bmatrix}, C \begin{bmatrix} -1 \\ 2 \end{bmatrix}$$

$$AC \text{ کی لمبائی} = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} = \sqrt{9 + 4} = 5$$

$$BC \text{ کی لمبائی} = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} = \sqrt{1 + 4} = \sqrt{5}$$

$$\frac{|ax + by + c|}{\sqrt{a^2 + b^2}} = \frac{|12 + 5 - 2|}{\sqrt{1 + 4}} = \frac{15}{\sqrt{5}} = 3\sqrt{5}$$

$$BC \text{ کی تیب} = \frac{y - y_1}{x - x_1} = \frac{2 - 1}{-1 - 2} = \frac{1}{-3} = -\frac{1}{3}$$

$$y - y_1 = m(x - x_1)$$

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

$$y = -\frac{1}{3}x + \frac{5}{3} \rightarrow 3y + x - 5 = 0$$

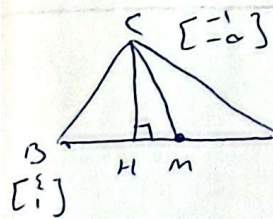
$$a = 3, b = 1, c = -5$$

$$\begin{cases} -x + 3y - 5 = 0 \\ -3x + 4y - 1 = 0 \end{cases} \rightarrow \begin{cases} -x + 3y - 5 = 0 \\ -3x + 4y - 1 = 0 \end{cases}$$

$$a = 3, b = 1, c = -5$$

$$\text{دور} = \frac{|c_1 - c_2|}{\sqrt{a^2 + b^2}} = \frac{|-12 + 5|}{\sqrt{1 + 4}} = \frac{7}{\sqrt{5}} = \frac{7\sqrt{5}}{5}$$

$$S_{\text{تربیع}} = \pi r^2 = \pi \times \frac{9}{4} = \frac{9\pi}{4}$$



$$m \text{ تیب} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{1 - 1}{2 - 2} = \frac{0}{0}$$

$$AB \text{ کی تیب} = \frac{y - y_1}{x - x_1} = \frac{1 - (-1)}{2 - 2} = \frac{2}{0} = \infty$$

$$y - 1 = -1(x - 2)$$

$$y = -x + 3$$

$$H = \begin{bmatrix} 1 \\ 1 \end{bmatrix}, C = \begin{bmatrix} -1 \\ 2 \end{bmatrix}$$

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

$$\frac{-x + 3y - 5}{\sqrt{1 + 4}} = 1$$

$$-x + 3y = 6$$

$$-x + 3y = 6$$

$$y = 2$$

$$H = \begin{bmatrix} 1 \\ 1 \end{bmatrix}, C = \begin{bmatrix} -1 \\ 2 \end{bmatrix}$$

$$(AB) \text{ کی تیب} = \frac{y - y_1}{x - x_1} = \frac{1 - (-1)}{2 - 2} = \frac{2}{0} = \infty$$

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

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

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

$$2m^2 - 2m + 1 = 0$$

$$\Delta = 4 - 8 = -4$$

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$$AB: x+y=c$$

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

$$BC: x+y=2$$

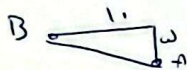
$$AM = \sqrt{\frac{1a}{a} + \frac{1}{a}} = \sqrt{\frac{2}{a}} = \frac{\sqrt{2}}{\sqrt{a}}$$

$$AH = \frac{11+1-2}{\sqrt{2}} = \frac{10}{\sqrt{2}} = 5\sqrt{2}$$

$$x+y$$

$$m = -\frac{1}{r} \rightarrow x+ry+c=0$$

$$\frac{|c|}{\sqrt{a}} = \sqrt{2} \rightarrow |c| = 10 \rightarrow c = 10$$



$$\sqrt{1^2 + 1^2} = \sqrt{2}$$

المساحة A, B, C هي مثلث قائم الزاوية (AB)

$$-2x+my=2m \rightarrow my=2x+2m \rightarrow y_1 = \frac{2}{m}x+2$$

$$(m-1)x+y=2 \rightarrow y_2 = (1-m)x+2$$

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

نلاحظ أن المقلوبين متساويان، إذن المقلوبين متساويان

$$y_1: \frac{2}{m}x = -2 \rightarrow x = -2 \times \frac{m}{2} = -m$$

$$y_2: (1-m)x = -2 \rightarrow x = \frac{-2}{1-m} = \frac{2}{m-1}$$

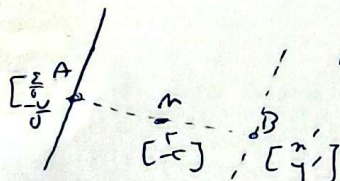
$$\left| \frac{2}{m-1} + \frac{m}{2} \right| = \frac{2}{2}$$

$$\left| \frac{2+m^2-m}{2m-2} \right| = \frac{2}{2}$$

$$\frac{2+m^2-m}{2m-2} = \frac{2}{2} \rightarrow \frac{2+m^2-m}{2m-2} = 1 \rightarrow 2+m^2-m = 2m-2 \rightarrow m^2-3m+4=0$$

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

$$y = 2x - 2 \quad \text{نقطة: } \left[\frac{2}{-1} \right] : m$$



$$AM \text{ نقطة: } \frac{2}{-1} = -2, \text{ نقطة } \left[\frac{2}{-1} \right] \rightarrow y+2 = -\frac{1}{-1}(x-2)$$

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

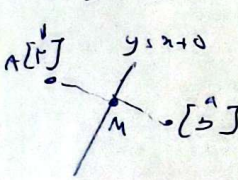
$$\left[\frac{2}{-1} \right] \text{ نقطة} = \left[\frac{2m-m}{2m-2} \right] = \left[\frac{2-2}{2m-2} \right] = \left[\frac{0}{2m-2} \right] = \left[\frac{0}{2} \right] = 0$$

$$A \text{ نقطة: } -\frac{1}{-1}x - 1 = 2x - 2$$

$$\frac{2}{-1}x = 2 \rightarrow x = 2 \times \frac{-1}{2} = -1$$

$$y = 2x - 2 \rightarrow y = 2(-1) - 2 = -4$$

$$A \left[\frac{2}{-1} \right] \text{ نقطة: } y = x + 1 \quad A \left[\frac{2}{-1} \right]$$



$$(1) AM \text{ نقطة: } -1 \rightarrow y-2 = -1(x-1) \rightarrow y = -x+3$$

$$(2) m \text{ نقطة: } y = x+1 \rightarrow x+1 = -x+3 \rightarrow x = 1$$

$$(3) m \text{ نقطة: } A \rightarrow \left[\frac{2m-m}{2m-2} \right] = \left[\frac{2-1}{2m-2} \right] = \left[\frac{1}{2m-2} \right] = \left[\frac{1}{2} \right] = \left[\frac{1}{2} \right]$$