

سوال (۱) محور مختصات $A|_{-4}^4$ و $B|_1^2$ را بنویسید: $m = \frac{1+4}{2-4} = \frac{1+4}{-2} = -\frac{5}{2}$

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

سوال (۲) $A|_1^3$ و $B|_1^4$ و $C|_{-3}^{-1}$ $\rightarrow \sqrt{(-4+1)^2 + 4^2} = \sqrt{25} = 5$

AH $2\phi \rightarrow$

مماس خط $m = \frac{3-4}{-4-1} = \frac{-1}{-5} = \frac{1}{5}$

$(y-1) = -\frac{5}{1}(x+1) \Rightarrow y = -5x - 5 + 1 \rightarrow y = -5x - 4$

مماس خط $\Rightarrow y = \frac{1}{5}x - \frac{8}{5} \Rightarrow (y-1) = \frac{1}{5}(x-3)$

نقطه برخورد $\rightarrow \frac{1}{5}x - \frac{8}{5} = -5x - 4 \rightarrow 20x = 12 \rightarrow x = \frac{3}{5}$

$y = -\frac{1}{5}$

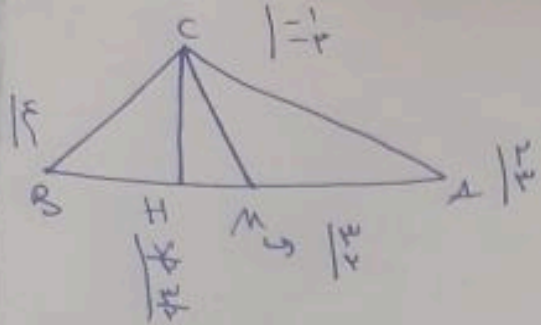
AH $\rightarrow \sqrt{(\frac{3}{5}-\frac{3}{5})^2 + (-\frac{1}{5}+\frac{1}{5})^2} = \sqrt{0} = 0$ $\rightarrow \Delta = 2 + 4 = 6$ افتاد طولشان

سوال (۳) $2y-x=2$ و $xy=2$ را بنویسید

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

فاصله $\rightarrow \frac{3}{\sqrt{5}} \rightarrow \text{طول قطر} \rightarrow \frac{4\sqrt{5}}{5} \rightarrow \frac{4}{\sqrt{5}}$

$(\frac{3}{\sqrt{5}})^2 = \frac{9}{5} \rightarrow \frac{4}{\sqrt{5}} = \frac{4\sqrt{5}}{5} \rightarrow \frac{4}{\sqrt{5}}$



$$m \rightarrow \frac{5-2}{2} = 3 \rightarrow m \mid \frac{3}{2}$$

$$\frac{5-1}{2} = 2 \rightarrow m \mid \frac{3}{2}$$

سوال ۴

$$AB \rightarrow (y-1) = -(x-5) \rightarrow y = -x+6$$

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

$$AB \rightarrow \varepsilon_H \Rightarrow (+1) \cdot m \rightarrow (y+3) = (x+1) \rightarrow y = x-2$$

$$AB \rightarrow x-2 = -x+6 \rightarrow 2x = 8 \rightarrow x = \frac{8}{2} = 4$$

$$MH \Rightarrow \sqrt{\left(4-\frac{5}{2}\right)^2 + \left(2-\frac{3}{2}\right)^2} \rightarrow \frac{1}{2} + \frac{1}{2} \sqrt{\frac{2}{2}} = \frac{\sqrt{2}}{2} \rightarrow \text{جواب آخر}$$

$$(1) (2m+1)x + (5-m)y - 7 = 0$$

سوال ۵

$$(2) (m+1)x - (2m-5)y + 1 = 0$$

به سبب داشتن مماس

$$(1) \rightarrow m = \frac{-(2m-5)}{5-m} \rightarrow m_1 = \frac{-(m+1)}{-2m+5}$$

$$\frac{2m+1}{5-m} \times \frac{-m-1}{-2m+5} = -1 \rightarrow 3m^2 - 2m + 3m - 1 = 1 \cdot m - 2m^2 - 5 + 10m$$

$$3m^2 + m - 2 = -2m^2 + 11m - 5$$

$$5m^2 - 10m + 4 = 0 \rightarrow \Delta = 100 - 80 = 20 \rightarrow \sqrt{20} = 2\sqrt{5}$$

$$AB = x+2y = 3, AC = y = 2m-1, BC = m+y = 5$$

سوال ۶

$$\frac{AM}{AH} = \frac{AC}{AB} \rightarrow \frac{5}{4} = \frac{2m-1}{3} \rightarrow 15 = 8m-4 \rightarrow 8m = 19 \rightarrow m = \frac{19}{8}$$

$$\frac{5-x}{2} = 2m-1 \rightarrow 5-x = 4m-2 \rightarrow 7 = 4m \rightarrow m = \frac{7}{4}$$

$$5m = 5 \cdot \frac{7}{4} = \frac{35}{4}$$

$$AB \rightarrow 2y = 5-m$$

$$BC \rightarrow y = -x+5 \rightarrow \frac{5-x}{2} = -m+5 \rightarrow 5-x = -2m+10 \rightarrow x = 5-2m$$

$$AC \rightarrow y = 2m-1 \rightarrow 2m-1 = -x+5 \rightarrow 2m = 6-x \rightarrow x = 6-2m$$

$$BC \rightarrow y = -x+5$$

$$AC \rightarrow y = 2m-1 \rightarrow 2m-1 = -x+5 \rightarrow 2m = 6-x \rightarrow x = 6-2m$$

$$BC \rightarrow y = -x+5$$

$$C \mid \frac{5}{4}$$

$$BC \rightarrow m \Rightarrow \left| \begin{array}{cc} 0 & 5 \\ -1 & 5 \end{array} \right| = \frac{5}{2}$$

$$AM = \sqrt{\left(\frac{5}{2}-1\right)^2 + \left(\frac{5}{2}-1\right)^2} = \frac{\sqrt{5}}{2}$$

$$AH = MB = y = 5-m = m-1 \rightarrow AH = 1$$

$$y = m+5 \rightarrow 5-m = m+5 \rightarrow m = 0$$

$y = -\frac{1}{4}x + b \rightarrow |y = \frac{1}{4}x + b|$ و $\frac{b}{\sqrt{\frac{1}{16}}} = \sqrt{5}$ (سوال ۷)

$y = \frac{1}{4}x + b \rightarrow y = 5, \frac{1}{4}x = 5 - b \rightarrow \frac{1}{4}x = -5 \rightarrow x = -20$

$A \begin{vmatrix} 1 \\ 0 \end{vmatrix} \quad B \begin{vmatrix} 0 \\ 1 \end{vmatrix} \rightarrow \sqrt{(1-0)^2 + (0-1)^2} = \sqrt{1+1} = \sqrt{2}$ جواب

$mg - \epsilon n = 2m, \quad y + mn = n + 2$

$\frac{mg}{m} = \frac{2m + \epsilon n}{m} \quad y = -mn + n + 2$

$y = 2 + \frac{\epsilon n}{m}$

$y = n(1-m) + 2$

$\frac{\epsilon n}{m} = 2 - 2 \rightarrow n = -\frac{m}{\epsilon}$

$y = n(1-m) = -2 \rightarrow n = \frac{-2}{1-m}$

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

$SD = \left| \frac{m^2 - m + 4}{2(m-1)} \right| \quad x^2 = \frac{1}{4} = \frac{5}{4} \rightarrow m = 3 \rightarrow m^2 + 4m - 1$
 $px - 1 = -3$

$M \begin{vmatrix} 2 \\ -2 \end{vmatrix} \quad y = 2m - 3 \rightarrow y = 2m + b$
 $\begin{vmatrix} 0 \\ -3 \end{vmatrix}$

$-3 = +b \rightarrow b = -9$

$(2, 2) \leftrightarrow (0, -3)$
 $\rightarrow (5, -1)$

$y = 2m - 9$ جواب

سوال ۱۰ (۵) قرینیتی $A \begin{vmatrix} 1 \\ 1 \end{vmatrix}$ نسبت به خط $y = x + 5$ $A' \begin{vmatrix} a \\ b \end{vmatrix} \leftarrow y = x + 5$

مقدار $2b - a$ چقدر؟

$y = -x + b \rightarrow 2 = -1 + b \rightarrow b = 3 \rightarrow y = -x + 3$

$x + 5 = -x + 3 \rightarrow x = -1, y = 4$
 $(x, y) = (-1, 4)$

$\begin{vmatrix} 1 \\ 1 \end{vmatrix} \rightarrow \begin{vmatrix} -1 \\ 4 \end{vmatrix} \rightarrow A' \begin{vmatrix} a \\ b \end{vmatrix} \rightarrow a = -3, b = +4$

$2b - a = +12 - 3 = 9$ جواب