

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

$m' = \frac{1}{m} = -\frac{2}{5}$ $\rightarrow (y-y') = \frac{1}{m'}(x-x')$
 $y-1 = \frac{1}{-2/5}(x-3) + 1 \rightarrow \frac{1}{-2/5}x - \frac{3}{-2/5} + 1 \rightarrow \frac{1}{-2/5}x + \frac{3}{2/5} + 1 \rightarrow \frac{1}{-2/5}x + \frac{3+5}{2/5} = \frac{1}{-2/5}x + \frac{8}{2/5}$
 $y = -\frac{5}{2}x + 4$ $\rightarrow y = \frac{2x}{5} + \frac{4}{5}$

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

AH $2\phi \rightarrow$

مماس خط $m = \frac{y-3}{-4-1} = \frac{-6}{-5} = \frac{6}{5}$

$(y-3) = -\frac{5}{6}(x+1) \Rightarrow y = -\frac{5}{6}x - \frac{5}{6} + 3 \rightarrow y = -\frac{5}{6}x + \frac{13}{6}$

مماس خط $\Rightarrow y = \frac{6}{5}x - \frac{8}{5} \Rightarrow (y-1) = \frac{6}{5}(x-3)$

نقطه برخورد $\rightarrow \frac{6}{5}x - \frac{8}{5} = -\frac{5}{6}x + \frac{13}{6} \rightarrow 20x = 38 \rightarrow x = \frac{19}{10}$

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

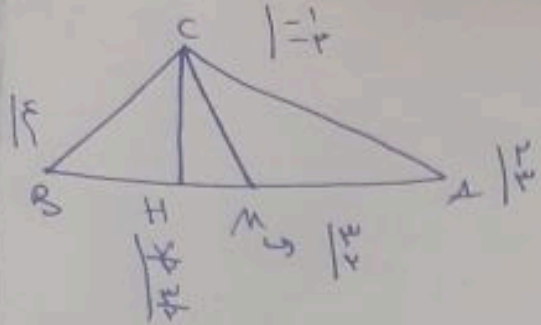
AH $\rightarrow \sqrt{(x-\frac{19}{10})^2 + (1+\frac{1}{5})^2} = \sqrt{5} = 2.23$ $\rightarrow \Delta = 2.23$ $\rightarrow$ افتداد طولشان

سوال (3) دایره $xy = 2$ و $xy = 2$ $\rightarrow$ (مماس)

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

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

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



$$M \rightarrow \frac{5y+2}{2} = 3 \rightarrow M \mid \frac{3}{2}$$

$$\frac{5y+2}{2} = 3 \rightarrow 5y+2 = 6 \rightarrow 5y = 4 \rightarrow y = \frac{4}{5}$$

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

$$m = \frac{y-1}{x-5} = \frac{4/5-1}{x-5} = -1$$

$$M \rightarrow E_H \rightarrow (+1) \cdot m \rightarrow (y+3) = (x+1) \rightarrow y = x-2$$

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

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

سوال ۵) $(5m+2)x + (5-m)y - 7 = 0$
 چه مقدار m این دو خط موازی باشند؟
 در شیب ها برابر باشند

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

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

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

$$5m^2 + m - 2 = -5m^2 + 15m - 2$$

$$10m^2 - 14m + 4 = 0 \rightarrow 5m^2 - 7m + 2 = 0$$

سوال ۶) $AB = x, y = 3, AC = y = 2m-1, BC = m+y = 5$

$$\frac{AM}{AH} = \frac{AC}{AB} \rightarrow \frac{0.5}{\frac{3}{2}} = \frac{2m-1}{3}$$

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

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

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

$$AC \rightarrow y = 2m-1 \rightarrow 2m-1 = -m+5 \rightarrow 3m = 6 \rightarrow m = 2$$

$$BC \rightarrow y = -m+5 \rightarrow y = -2+5 = 3$$

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

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

$$AH = MB = y = 5-m = 3 \rightarrow AH = 3$$

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

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

$$y = \frac{1}{5}x + b \rightarrow y = 5, \quad \frac{1}{5}x = 5 \rightarrow x = 25$$

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

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

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

$$y = -mn + n + 2$$

(سوال ۸)

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

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

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

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

$$\rightarrow \frac{-m}{\epsilon}$$

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

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

$$Px - 1 = -3$$

(سوال ۹)

$$M \begin{vmatrix} 2 \\ -2 \end{vmatrix} \text{ نسبت } y = 2x - 3 \rightarrow y = 2x + b$$

$$\begin{vmatrix} 0 \\ -3 \end{vmatrix}$$

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

$$(2, 2) \leftrightarrow (0, -3)$$

$$y = 2x - 9 \rightarrow \text{جواب}$$

$$\rightarrow (5, -1)$$

$$A \begin{vmatrix} 1 \\ 2 \end{vmatrix} \quad B \begin{vmatrix} 0 \\ 1 \end{vmatrix} \text{ نسبت به خط } y = x + 5$$

$$\rightarrow m = 1$$

$$2b - a = 12$$

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

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

$$x = -2$$

$$\begin{vmatrix} 1 \\ 2 \end{vmatrix} \rightarrow \begin{vmatrix} -1 \\ 4 \end{vmatrix} \rightarrow A \begin{vmatrix} a \\ b \end{vmatrix} \rightarrow a = -3, b = +4$$

$$2b - a = +12 + 3 = 15 \rightarrow \text{جواب}$$