

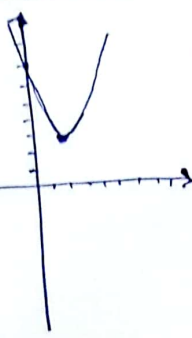
الف) $x^2 - 4x + 7$

$-\frac{b}{2a} = \frac{4}{2} = 2$

$-\frac{\Delta}{4a} = \frac{-16 + 28}{4} = \frac{12}{4} = 3$

$b^2 - 4ac = 16 - 28 = -12 < 0$
 (شماره را)

$c < 0$



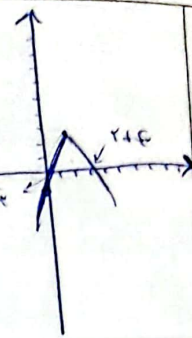
ب) $-x^2 + 6x - 1$

$-\frac{b}{2a} = \frac{-6}{-2} = 3$

$-\frac{\Delta}{4a} = \frac{-36 + 4}{-4} = \frac{-32}{-4} = 8$

$b^2 - 4ac = 36 - 4 = 32 > 0$
 (شماره را)

$x_1 = \frac{-(-6) \pm \sqrt{32}}{-2} = \frac{6 \pm 4\sqrt{2}}{-2} = -3 \pm 2\sqrt{2}$
 $x_2 = -3 - 2\sqrt{2}$



مقدار m ؟

الف) $2x^2 + (m+1)x + \frac{1}{2}m + 2 = 0$

$\Delta > 0 \rightarrow m^2 - 2m - 1 > 0 \rightarrow m < -1 \text{ و } m > 3$

ب) $\Delta = 0 \rightarrow m^2 - 2m - 1 = 0 \rightarrow m = -1 \text{ و } m = 3$

ج) $\Delta < 0 \rightarrow (m+1)^2 - 4(2m+1) < 0 \rightarrow m^2 + 2m + 1 - 8m - 4 < 0 \rightarrow m^2 - 6m - 3 < 0$
 $m = \frac{6 \pm \sqrt{36 + 12}}{2} = 3 \pm 2\sqrt{3}$
 $m < 3 - 2\sqrt{3} \text{ و } m > 3 + 2\sqrt{3}$

د) $\Delta > 0 \rightarrow m^2 - 2m - 1 > 0 \rightarrow m < -1 \text{ و } m > 3$

الف) $y = (m-2)x^2 - 2(m+1)x + 1$

$\Delta > 0 \rightarrow 4m^2 + 4m - 4 - 4(m+1) > 0 \rightarrow m^2 - 2m - 2 > 0$
 $m < -1 \text{ و } m > 3$

ب) $-\frac{b}{a} < 0 \rightarrow \frac{2(m+1)}{m-2} < 0 \rightarrow (m+1)(m-2) < 0 \rightarrow -1 < m < 2$

ج) $\frac{c}{a} < 0 \rightarrow \frac{1}{m-2} < 0 \rightarrow m < 2$

د) $-\frac{b}{a} > 0 \rightarrow \frac{2(m+1)}{m-2} > 0 \rightarrow (m+1)(m-2) > 0 \rightarrow m < -1 \text{ و } m > 2$

ه) $m < -1$

الف) $y = (m-2)x^2 - 2(m+1)x + 1$

$\frac{c}{a} < 0 \Rightarrow \frac{1}{m-2} < 0 \Rightarrow m < 2$

ب) $-\frac{b}{2a} = 2 \rightarrow \frac{2(m+1)}{2(m-2)} = 2 \Rightarrow m+1 = 2m-4 \Rightarrow m = 5$



$\frac{1}{3}x^2 - (\sin \alpha)x + \frac{1}{3} = 0$

$\Delta > 0 \rightarrow \sin^2 \alpha - 1 > 0 \rightarrow \sin^2 \alpha > 1$

۱) $\sin \alpha = 1 \rightarrow \frac{1}{3}x^2 - x + \frac{1}{3} = 0 \Rightarrow x = \frac{1 \pm \sqrt{1 - \frac{4}{3}}}{\frac{2}{3}} = \frac{1 \pm \sqrt{\frac{1}{3}}}{\frac{2}{3}} = \frac{3 \pm \sqrt{3}}{2} > 0$

۲) $\sin \alpha = -1 \rightarrow \frac{1}{3}x^2 + x + \frac{1}{3} = 0 \Rightarrow x = \frac{-1 \pm \sqrt{1 - \frac{4}{3}}}{\frac{2}{3}} = \frac{-1 \pm \sqrt{\frac{1}{3}}}{\frac{2}{3}} = \frac{-3 \pm \sqrt{3}}{2} < 0$

$$y = \frac{(x^2 - x - 1)(x^2 - 10x - 1)}{1 - x^2}$$

$$x^2 - x - 1 \div (x-1) = x+1 \quad x^2 - 10x - 1 \div (x+1) = x-11$$

$$\frac{(x-1)(x+1)(x+1)(x-11)}{(1-x)(1+x)} \rightarrow (-x-1)(x-11) = -x^2 + 10x + 11$$

$$mx^2 - (m+1)x - 1 = 0$$

$$a = m \quad b = -(m+1) \quad c = -1$$

$$S = \frac{-b}{a} = \frac{m+1}{m}$$

$$S = \frac{P}{V} = 1$$

$$VS = P + V \rightarrow V\left(\frac{m+1}{m}\right) = -\frac{1}{m} + V \quad S^2 - VP = 1^2 - 1(-1) = 2 \quad (4)$$

$$Vm + 1 = Vm - 1 \Rightarrow m = 1$$

$$x^2 - \omega x + 1 = 0 \quad \alpha \cdot \beta = 1 \quad \alpha + \beta = \omega \quad \frac{\alpha + \beta}{\alpha\beta} = \omega \quad \frac{\alpha + \beta}{1} = \omega \quad \alpha + \beta = \omega \quad (19)$$

$$\beta^2 - \beta\omega + 1 = 0 \quad \alpha = \frac{1}{\beta} \quad \alpha + \beta = \omega \quad \frac{1}{\beta} + \beta = \omega \quad \beta^2 - \omega\beta + 1 = 0 \quad \beta = \frac{\omega \pm \sqrt{\omega^2 - 4}}{2}$$

$$\beta^2 = \omega\beta - 1 \quad \beta^3 = \beta \cdot \beta^2 \Rightarrow \beta(\omega\beta - 1) = \omega\beta^2 - \beta \Rightarrow \omega(\omega\beta - 1) - \beta = \omega^2\beta - \omega - \beta = \omega^2\beta - \beta - \omega = \beta(\omega^2 - 1) - \omega$$

$$\beta^4 = \beta \cdot \beta^3 \Rightarrow \beta(\omega^2\beta - \beta - \omega) = \omega^2\beta^2 - \beta^2 - \omega\beta \Rightarrow \omega^2(\omega\beta - 1) - \beta^2 - \omega\beta = \omega^3\beta - \omega^2 - \beta^2 - \omega\beta = \omega^3\beta - \beta^2 - \omega\beta - \omega^2$$

$$\beta^5 = \beta \cdot \beta^4 \Rightarrow \beta(\omega^3\beta - \beta^2 - \omega\beta - \omega^2) = \omega^3\beta^2 - \beta^3 - \omega\beta^2 - \omega^2\beta \Rightarrow \omega^3(\omega\beta - 1) - \beta^3 - \omega\beta^2 - \omega^2\beta = \omega^4\beta - \omega^3 - \beta^3 - \omega\beta^2 - \omega^2\beta$$

$$y_1 = ax^2 + bx + c \quad y_2 = x^2 + 10x + 1$$

$$y_1 = x^2 - 11x + 1$$

$$y_2 = x^2 + 10x + 1$$

$$\begin{cases} y_1 = a + b + c \\ 1 = 9a - 11b + c \end{cases}$$

$$\begin{cases} a + b = 1 \\ 9a - 11b = 0 \end{cases} \Rightarrow \begin{cases} a = 1 \\ b = 0 \end{cases}$$

$$\frac{-b}{2a} = \frac{-0}{2} = 0$$

موقع رأس

1.1

9

$$y = x^2 + (m+1)x + m + 1 \Rightarrow x^2 + mx + x + m + 1 = x^2$$

$$x^2 + mx + m + 1 = 0 \Rightarrow \Delta \geq 0 \quad m^2 - 4(m+1) \geq 0 \quad m = \frac{1 \pm \sqrt{4 \pm 4}}{2} = \frac{1 \pm 2}{2}$$

$$x = \frac{-b}{2a} = -\frac{m}{2} \quad m = 1 \quad x = -\frac{1}{2} \quad m = -5 \quad x = \frac{5}{2}$$

لحظ: نلاحظ

$$m = -5$$

1.1

1.1

1.1