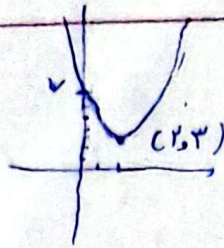
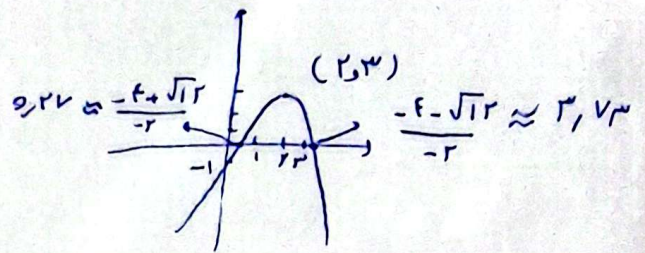


الف) $\Delta < 0$ و $\Delta = 0$

$$\frac{-b}{2a} = \frac{-\frac{1}{2}}{2} = -\frac{1}{4} < 0 \quad \text{و} \quad \Delta = \left(\frac{1}{2}\right)^2 - 4 \cdot \frac{1}{2} \cdot \frac{1}{2} = -1 < 0$$

ب) $a < 0$ و $\frac{-b}{2a} = \frac{-\frac{1}{2}}{2} = -\frac{1}{4} < 0$ و $\Delta = 0$

$$\Delta = 0 \Rightarrow x_1 = x_2 = \frac{-\frac{1}{2} \pm \sqrt{0}}{2} = -\frac{1}{4}$$



$$\Delta > 0 \Rightarrow (m+1)^2 - 4 \left(\frac{1}{2}m+2\right)(2) \geq 0 \Rightarrow m^2 - 2m - 15 \geq 0 \Rightarrow \left[\frac{-2}{2} \pm \sqrt{1+15}\right] = [-3, 5]$$

$$\Delta = 0 \Rightarrow (m+1)^2 - 4 \left(\frac{1}{2}m+2\right)(2) = 0 \Rightarrow m^2 - 2m - 15 = 0 \Rightarrow m = -3 \text{ or } m = 5$$

$$\Delta < 0 \Rightarrow (m+1)^2 - 4 \left(\frac{1}{2}m+2\right)(2) < 0 \Rightarrow m^2 - 2m - 15 < 0 \Rightarrow \left[\frac{-2}{2} \pm \sqrt{1+15}\right] = (-3, 5)$$

$$\Delta > 0 \Rightarrow (m+1)^2 - 4 \left(\frac{1}{2}m+2\right)(2) \geq 0 \Rightarrow m^2 - 2m - 15 \geq 0 \Rightarrow \left[\frac{-2}{2} \pm \sqrt{1+15}\right] = (-3, 5) \cup [5, +\infty)$$

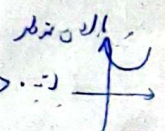
$$K < 0 \Rightarrow \frac{2m+2}{m-2} < 0 \Rightarrow \left[\frac{-2}{2} \pm \sqrt{1+15}\right] = (-3, 5)$$

$$P > 0 \Rightarrow \frac{1}{m-2} > 0 \Rightarrow m > 2$$

$$|A| > |B| \Rightarrow K < 0 \Rightarrow \frac{2m+2}{m-2} < 0 \Rightarrow (-3, 2) \cup (2, 5) \Rightarrow m \in (-3, 2) \cup (2, 5)$$

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

$$\Delta > 0 \Rightarrow f(m^2 + 2 + 4m - f(m+1)) \geq 0 \Rightarrow f(m^2 - 2m + 1) \geq 0 \Rightarrow m^2 - 2m + 1 \geq 0 \Rightarrow (m-1)^2 \geq 0$$



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

$$\frac{-b}{2a} = \frac{-\frac{1}{2}}{2} = -\frac{1}{4} < 0 \Rightarrow 2m+2 \leq f(m+1) \Rightarrow$$

$$f(m) = 2 \Rightarrow m \in [2, 5]$$

$$(P \sin \alpha)^r = f \left(\frac{P}{f} \right) \left(\frac{P}{f} \right) \Rightarrow f \sin \alpha \geq 1 \rightarrow \sin \alpha \geq \frac{1}{f} \rightarrow \sin \alpha \leq 1$$

$$\Rightarrow \sin \alpha = 1 \rightarrow \sin \alpha = 1$$

$$\begin{cases} \sin \alpha = 1 \Rightarrow \frac{P}{f} n^r = P_n + P_f \Rightarrow \delta = f - 1 \times \frac{P}{f} \times \frac{P}{f} \Rightarrow \frac{P \pm \sqrt{P}}{f} = \left[\frac{P}{f} \right] \\ \sin \alpha = 1 \Rightarrow \frac{P}{f} n^r = P_n + P_f \Rightarrow \delta = f - 1 \times \frac{P}{f} \times \frac{P}{f} \Rightarrow \frac{-P \pm \sqrt{P}}{f} = \frac{P}{f} \text{ و } \frac{P}{f} \end{cases}$$

$$\frac{(P_n^r - P_{n-1}) (P_n^r - P_{n-1})}{1 - n^r} = \frac{(P_n - 1)(n - 1)(n + 1)(P_n + 1)}{(1 - n)(1 + n)}$$

$$\Rightarrow -P_n^r + P_{n-1} + 0 \leq 0$$

$$\Rightarrow -n^r + \frac{1}{n} + \frac{1}{n} \Rightarrow \frac{-\Delta}{1a} = \left[\frac{1}{n} \right]$$

$$P(\alpha + \beta) = \omega(\alpha + \beta + 1) \Rightarrow \frac{P_{m+1}}{m} = \frac{-1 + 1 + m}{m} \Rightarrow m = f$$

$$\alpha^r + \beta^r = s^r - r p = \left(\frac{t+r}{f} \right)^r - r \left(-\frac{1}{f} \right) = \frac{r^2}{14} + 1 = \frac{1}{f} + 1 = \left[\frac{1}{f} \right]$$

$$a\beta = \frac{c}{a} \Rightarrow f \Rightarrow a\beta^r = f \Rightarrow \beta^r = \frac{f}{a^r} \Rightarrow \frac{fa + \beta^a}{a\beta^r} = \frac{fa}{a\frac{f}{a^r}} + \frac{\beta^r}{\frac{f}{a^r}} \Rightarrow \frac{a^r}{a} + \frac{\beta^r}{a} = \frac{a^r + \beta^r}{a}$$

$$\Rightarrow \frac{s^r - r p}{a} = \frac{120 - 39p}{a} = \frac{90}{a} = \left[19 \right]$$

$$c \neq f \Rightarrow ax^r + bx + f = 0 \Rightarrow r(r) + 1 + fa + rb + f, r(-r) + 1 + 9a - rb + f$$

$$r + 1f = fa + rb + f$$

$$r + f = 9a - rb + f$$

$$\frac{-b}{1a} = \text{موزنارن} \Rightarrow \left[\frac{r}{f} \right] = \left[1, 5 \right]$$

$$\begin{cases} fr = 12a + 4b + 11 \\ 1 + 11a - 4b + 1 \end{cases} \Rightarrow \begin{cases} a = 12a + 4b + 11 \\ b = 3 \end{cases}$$

$$P_m^r = (m+1) \times m + 1 \times m \Rightarrow P_m^r + m + m + 1 = 0 \Rightarrow \Delta = 0 \Rightarrow m^r - 1m - 1 = 0$$

$$y = m \Rightarrow \text{مساوی} = n \times 0$$

$$\Rightarrow \frac{1+17}{2}, \frac{1-17}{2} \Rightarrow \left[17, -4 \right]$$

برای هم آید، و هم آید تا قبل است.

$$\Delta = 9 + 4(-1 \times 1) = 25 = 5 \times 5$$

$$\Delta = (17 - 1 \times 1 \times 1) \Rightarrow 179 - 111 = 68 = 2 \times 34 = 2 \times 2 \times 17$$