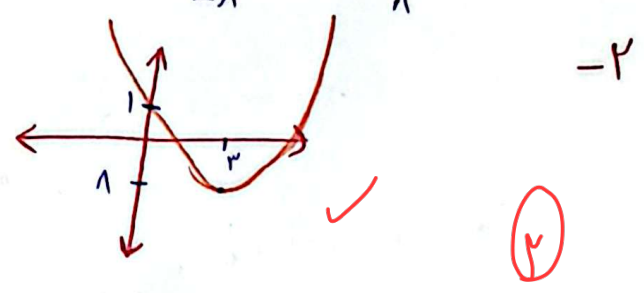


۱- تابع min دار است (a > 0)

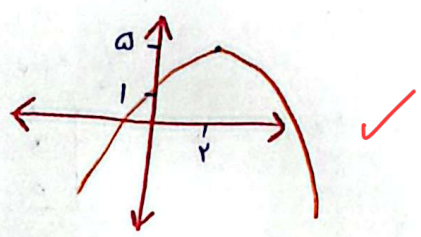
الف) $y = 2x^2 - 4x + 1$
 ext | $-\frac{b}{2a} = 1$ ✓
 $-\frac{\Delta}{4a} = -\frac{1}{1} = -1$

ب) $y = -2x^2 + 3x - 5$ (۲)
 تابع max دار است (a < 0)
 ext | $-\frac{b}{2a} = \frac{3}{-4}$ ✓
 $-\frac{\Delta}{4a} = \frac{-9 + 40}{-4} = -\frac{31}{4}$

الف) $y = x^2 - 6x + 1$ $\begin{matrix} n=0 \\ c=1 \end{matrix}$
 ext | $-\frac{b}{2a} = \frac{6}{2} = 3$ a > 0
 $-\frac{\Delta}{4a} = 9 - 4 + 1 = -1$



ب) $y = -x^2 + 4x + 1$ $\begin{matrix} n=0 \\ c=1 \end{matrix}$
 ext | $-\frac{b}{2a} \rightarrow -\frac{4}{-2} = 2$ a < 0
 $-\frac{\Delta}{4a} = 0$



$x^2 - 5x + p \xrightarrow{s} \alpha + \beta = 1$
 $\xrightarrow{p} \alpha \beta = -2$ } $x^2 - x - 2 \begin{cases} \alpha=1, \beta=2 \\ \alpha=2, \beta=-1 \end{cases}$ (۲) -۳

$\alpha = -1 \xrightarrow{\beta} x^2 + kx - 9x - 2 = 0 \rightarrow -5 + k + 9 - 2 = 0 \Rightarrow k = -3$
 $\beta = -1$

$\sqrt{\alpha} - \sqrt{\beta} = 1 \xrightarrow{\text{مربع}} \alpha + \beta - 2\sqrt{\alpha\beta} = 1 \rightarrow 5 - 2\sqrt{p} = 1$ -۴

$\rightarrow 3 - 2\sqrt{m} + 1 = 0 \Rightarrow \sqrt{m} = 1 \Rightarrow m = 1 \Rightarrow 2x^2 + x - 1 = 0$ (۲)

$y = 2x^2 - (m+2)x + m$ $\alpha - \beta = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{(m+2)^2 - 4m}}{2} = \frac{\sqrt{(m-2)^2}}{2} = \frac{|m-2|}{2}$
 $= \frac{|m-2|}{2} \Rightarrow s = \frac{1}{2} \times \frac{|m-2|}{2} = \frac{|m-2|}{4} \rightarrow |m-2| = 4 \Rightarrow m^2 - 2m - 3 = 0$ (۱۵)

$\Rightarrow \begin{cases} m = 3 \\ m = -1 \end{cases}$ ✓

$y = 2x^2 + 2x + 1 \rightarrow \alpha_s = \frac{-b}{2a} = -\frac{1}{2}$
 $y = 2x^2 - 4x + 1 \rightarrow \alpha_s = \frac{-b}{2a} = \frac{2}{2} = 1$

$$y = an^2 + 2n + a \rightarrow n = -\frac{2}{2a} \quad a\left(-\frac{2}{2a}\right)^2 + 2\left(-\frac{2}{2a}\right) + a = \frac{V}{\lambda} \rightarrow y_{min} \quad -9$$

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

$$\Delta = 4 + 4a^2 = 4a^2$$

$$\frac{-4 + 2a^2}{2a} = \frac{V}{\lambda} \Rightarrow \lambda a^2 - Va - 1 = 0$$

$$\lambda a^2 - Va - 1 = 0$$

$$a = \frac{V \pm \sqrt{4a^2}}{2\lambda}$$

$a_1 = \frac{32}{16} = 2 \Rightarrow$ یک مقدار
 $a_2 = -\frac{11}{16} = -\frac{9}{16} \Rightarrow X$

$S > 0$
 $P < 0$

$$n^2 - (a+1)n + a = 0 \xrightarrow{a+b+c=0} \begin{cases} n_1 = 2 \\ n_2 = 1 \end{cases} \text{ فرد متوالی} \quad -V$$

$$n_1 = \frac{c}{a} \Rightarrow a = 2$$

$$n^2 - (2a+1)n + b = 0$$

$$\Rightarrow n^2 - 5n + b = 0 \xrightarrow{s=10} \begin{cases} n_1 = 2 \\ n_2 = 3 \end{cases} \text{ زوج متوالی}$$

$$\Rightarrow P_2 - P_1 = 6 \times 2 - 3 \times 1 \Rightarrow 2 \times 2 - 3 = 1$$

$$y_1 = -an^2 + an + 2 \rightarrow \text{ext} \left| \begin{array}{l} \frac{1}{2} \\ a+1 \end{array} \right. \quad -1$$

$$y_2 = 2bn^2 - bn - 1 \rightarrow \text{ext} \left| \begin{array}{l} \frac{b}{2a} = \frac{1}{2} \\ -\frac{\Delta}{2a} = \frac{-b-1}{2} \end{array} \right. \quad (2)$$

$$\frac{2}{2} - 2 \times 2 + 2 = -\frac{1}{2} = \frac{-b-1}{2} \Rightarrow b = -1 \quad b-a \Rightarrow$$

$$\frac{b}{2} - \frac{b}{2} - 1 = \frac{a+1}{2} \Rightarrow a = -12 \Rightarrow -1 - (-12) = 11$$

$$\beta > \alpha, y = 2\alpha an^2 + \alpha n + \beta \rightarrow \alpha + \beta = -\frac{f}{2\alpha a} \quad -9$$

X اگر $\alpha = \frac{1}{a} \Rightarrow \beta = -1$
 \checkmark اگر $\alpha = -\frac{1}{a} \Rightarrow \beta = 1$

$$\alpha \beta = \frac{\beta}{2\alpha a} \Rightarrow 2\alpha a^2 = 1 \Rightarrow a^2 = \frac{1}{2\alpha}$$

$$y_s = \frac{-b}{2a} = -\frac{f}{-10} = \frac{f}{10} = \frac{2}{5}$$

$$y = -2 \times \frac{f}{2a} + \frac{1}{a} + 1 = \frac{9}{a} \Rightarrow$$

$$y = n^2 - (a^2 + b^2 - 12)n + a + b - 1 = 0$$

$$\Rightarrow s = s^2 - 2P - 12$$

$$s = s^2 - 2s + 2 - 12 \Rightarrow s^2 - 3s - 10 = 0$$

$$(s-5)(s+2) = 0 \Rightarrow s = 5 \quad s = -2 \times X$$