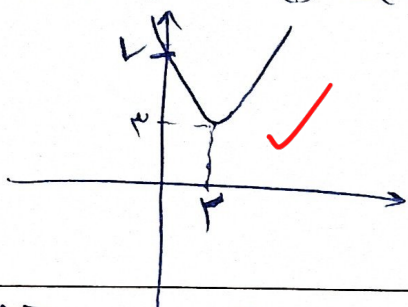
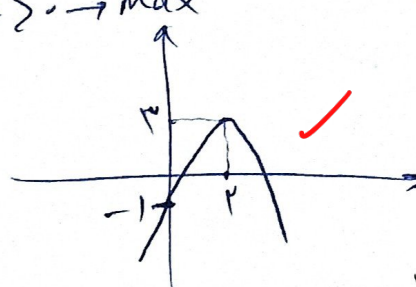


۱۹،۷۵ افروز

الف) $n^2 - 5n + V \rightarrow \left| \frac{-b}{2a} = \frac{5}{2} = 2.5 \right.$
 $a \leq 0 \rightarrow \min \quad (r)^2 - 5(r) + V = 0$



$$b) y = -x^2 + 4x - 1 \rightarrow \left| \frac{-b}{2a} = \frac{-4}{-2} = 2 \right|$$



$$\Delta > 0 \rightarrow (m+1)^r - \epsilon(r) \left(\frac{1}{r} m + r \right) > 0 \rightarrow m^r + r m + 1 - \epsilon m - 1 > 0$$

$$\rightarrow m^2 - 18m - 18 > 0 \rightarrow (m-18)(m+1) > 0 \rightarrow m \in (-\infty, -1) \cup (18, +\infty)$$

$$b) \Delta = 0 \rightarrow (m+1)^2 - 2(r) \left(\frac{1}{r} m + r \right) = 0 \rightarrow m^2 - r m - 18 = 0 \rightarrow m = -3, m = 8 \checkmark$$

e) $\Delta < 0 \rightarrow b^2 - 4ac < 0 \rightarrow (m-6)(m+14) < 0 \rightarrow \begin{array}{c} -7 \\ | \quad | \\ 6 \quad -14 \end{array} \rightarrow m: (-7, 6)$

$$\Rightarrow \Delta \geq 0 \rightarrow (m+1)^2 - 4 \cdot 1 \cdot \left(\frac{1}{4}m+2\right) \geq 0 \rightarrow m^2 - 2m - 8 \geq 0 \rightarrow \frac{-(-2) \pm \sqrt{4 + 32}}{2} = \frac{2 \pm 6}{2} \rightarrow m \in (-4, 8)$$

الف) $\Delta > 0 \rightarrow m^2 - 22m + 112 > 0 \rightarrow a > 0 \Rightarrow$ حواره مثبت
 $\Delta < 0 \rightarrow \frac{r(m+1)}{m-2} \rightarrow \Delta' < 0$
 $p > 0 \rightarrow \frac{10}{m-2}$
 Diagrams: $\frac{-1}{0} \frac{+}{-} \frac{+}{0} \frac{+}{-}$ and $\frac{-}{0} \frac{+}{0}$
 $\Rightarrow \textcircled{n} : \phi$

ب) $\begin{cases} P \leq 0 \rightarrow \frac{1}{m-1} < 0 \\ S \leq 0 \rightarrow \frac{r(m+1)}{m-1} < 0 \end{cases}$
 $\frac{1}{m-1} < 0 \rightarrow m < 1$
 $\frac{r(m+1)}{m-1} < 0 \rightarrow -1 < m < 1$
 $m \in (-1, 1)$

(الف)  $\rightarrow \begin{cases} a < 0 \rightarrow m-2 < 0 \Rightarrow m < 2 \\ p < 0 \rightarrow \frac{1}{m-2} < 0 \Rightarrow -\frac{2}{m-2} > 0 \Rightarrow m < 2 \\ \Delta > 0 \rightarrow 4m^2 - 12m + 14 > 0 \end{cases}$

$\Rightarrow$ اشتراط : $m < 2 \rightarrow (-\infty, 2)$

$\checkmark$ جوابه $\oplus$ و جوابه $\ominus$ $\checkmark$

c) $\frac{-b}{r_a} = -r \Rightarrow \frac{-(m+1)}{(m-r)} = -r \Rightarrow -r(m+1) = m-r \Rightarrow -rm - r = m - r \Rightarrow -rm = m \Rightarrow m = 1$ ✓

2) $\Delta = 0 \rightarrow \sqrt{2} \alpha - \varepsilon \left(\frac{\sqrt{2}}{\sqrt{2}} \right) \left(\frac{\sqrt{2}}{\sqrt{2}} \right) = \sqrt{2} \alpha - \sqrt{2} \Rightarrow \sin \alpha = \pm 1$
 $S = \frac{-b}{a} > 0 \rightarrow \frac{\sqrt{2} \alpha}{\frac{\sqrt{2}}{\sqrt{2}}} = \sqrt{2} \alpha > 0 \Rightarrow \alpha = 1 \text{ و } -1$

$$\Rightarrow \frac{r}{r} x^r - r x + \frac{r}{r} \xrightarrow{\text{Simplify}} x^r - r x + 1 = 0 \rightarrow (x-1)^r = 0 \div \frac{r}{r} \rightarrow x = \frac{1}{\frac{r}{r}} = \frac{1}{1} = 1$$

$$\frac{(x_n^2 - x_{n-1})(x_n^2 - x_{n-2})}{(1-x)(1+x)} = \frac{(-1)^{n-1}(x_{n+1})(x_{n+2})(x_n - 2)}{(x+1)(1-x)} = -(x_{n+1})(x_n - 2) \quad (2)$$

$$\rightarrow y = -4x^2 + 12x + 6 \rightarrow y_{\max}: \frac{-\Delta}{2a} = \frac{-(b^2 - 4ac)}{2a} = \frac{-(12^2 - 4(-4)(6))}{-8} = \frac{249}{8} \checkmark \approx 31.125$$

$$mx^2 - (m+2)x - 2 = 0 \rightarrow \begin{cases} S: \frac{m+2}{m} \\ p: \frac{-2}{m} \end{cases}$$

$$xS = 0p + r \rightarrow x\left(\frac{m+2}{m}\right) = 0\left(\frac{-2}{m}\right) + r \rightarrow \frac{x(m+2)}{m} = \frac{-2}{m} + r \xrightarrow{m \neq 0} x(m+2) = -2 + rm$$

$$\Rightarrow m = 14 \Leftrightarrow m = 2$$

$$\alpha^2 + \beta^2 = S^2 - 2p \Rightarrow \left(\frac{m+2}{m}\right)^2 - 2\left(\frac{-2}{m}\right) = \left(\frac{r}{m}\right)^2 + 1 = \frac{4}{m} + \frac{2}{m} \in \left\{\frac{12}{2}\right\} \checkmark$$

$$\begin{cases} S: \frac{b}{a} = 8 \\ p: \frac{c}{a} = 2 \end{cases}$$

$$\frac{\alpha + \beta^2}{\partial \beta^2} \xrightarrow{\times \alpha^2} \frac{\alpha^3 + \beta^2 \alpha^2}{\partial \beta^2 \alpha^2} = \frac{\alpha^3 + \alpha^2 \beta^2}{\partial \beta^2 \alpha^2} \rightarrow p^2$$

$$\Rightarrow \frac{\alpha^3 + (\beta^2)^2}{\partial (\beta^2)^2} = \frac{\alpha(\alpha^2 + \beta^4)}{2\beta} = \frac{\alpha(S^2 - 2p)^2}{2\beta} = \frac{(8)^2 - 2(2)(\beta)}{2} = \frac{64 - 4\beta}{2} = 32 - 2\beta = 19 \checkmark$$

$$\begin{aligned} \text{بلع: } ax^2 + bx + 2 &\rightarrow \begin{cases} \alpha: 2 \rightarrow 4a + 2b + 2 = 12 \rightarrow 4a + 2b = 10 \\ \beta: -2 \rightarrow 9a - 2b + 2 = 5 \rightarrow 9a - 2b = 3 \end{cases} \rightarrow \underline{4a = b} \\ y = 2x + 10 &\end{aligned}$$

$$\rightarrow 10a = 10 \rightarrow a = 1 \Rightarrow b = 4$$

$$\xrightarrow{\text{بلع}} y: x^2 + 2x + 2 \Rightarrow \text{بلع: } \frac{-b}{2a} = \frac{-2}{2} = -1 \checkmark$$

$$\begin{cases} y = 2x^2 + (m+1)x + m+4 \\ y = x \end{cases} \rightarrow 2x^2 + (m+1)x + m+4 = x \Rightarrow 2x^2 + (m)x + m+4 = 0$$

$$\text{بلع} \rightarrow \Delta = 0 \quad b^2 - 4ac = 0 \Rightarrow m^2 - 4(2)(m+4) = 0 \Rightarrow m^2 - 8m - 16 = 0$$

$$\Rightarrow (m-12)(m+4) = 0 \Rightarrow \begin{cases} m = 12 \\ m = -4 \end{cases} \checkmark \text{ ناجیه دوم}$$