

$$f(n) = (a-1)n^2 + n + 3$$

$$x_{\max} \Rightarrow \frac{b}{2a} = 2 \Rightarrow \frac{-1}{2(a-1)} = 2 \Rightarrow a = \frac{3}{4}$$

$$\begin{cases} -\frac{1}{4}n^2 + n + 3 = 0 \\ -n^2 + 4n + 12 = 0 \end{cases} \Rightarrow (n-4)(n+3) = 0 \Rightarrow \begin{cases} n = 4 \\ n = -3 \end{cases} \Rightarrow \boxed{n = 4} \checkmark$$

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$$mn^2 - \delta n + m \quad (1) \quad a < 0 \Rightarrow n > m < 0$$

$$-\frac{\delta}{4} < m < \frac{\delta}{4}$$

$$(2) \quad \Delta > 0 \quad b^2 - 4ac > 0 \quad \delta^2 - 4m^2 > 0 \Rightarrow m^2 < \frac{\delta^2}{4} \Rightarrow m < \frac{\delta}{2}$$

$$(1) \quad (2) \quad m < 0 \cup \left(-\frac{\delta}{4}, \frac{\delta}{4}\right) \Rightarrow \boxed{\left(-\frac{\delta}{4}, 0\right)} \checkmark$$

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$$n^2 - 5n + p$$

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$$n^2 - \left(\frac{5-\sqrt{5}}{2} + \frac{5+\sqrt{5}}{2}\right)n + \left(\frac{(5-\sqrt{5})(5+\sqrt{5})}{4}\right) = n^2 - 5n + \frac{5}{4} \checkmark$$

$$4n^2 - 18n + 5 = 0$$

سوال لغت با ضرایب صحیح!

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$$4\alpha^2 + \beta^2 = 4\alpha^2 + 4\beta^2 + \alpha^2 - \beta^2 = 4(5^2 - 2p) + (\alpha - \beta)(\alpha + \beta) = 4(25 - 2p) + (\beta + \alpha)(\beta - \alpha) = 12$$

$$4\alpha^2 + 4\beta^2 - 4\left(\frac{m+2}{2}\right) - \sqrt{-18m+48} = 12$$

$$4\alpha^2 + 4\beta^2 - 4\sqrt{-18m+48} = 12$$

$$144 - 18m = 4\sqrt{-18m+48} \cdot 20 \Rightarrow$$

$$m^2 - 14m + 48 = -18m + 48$$

$$m^2 - 18m + 48 = 0 \Rightarrow (m-6)(m-8) = 0 \Rightarrow \boxed{m = 6} \checkmark$$

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$$f = \frac{1}{2}(n-2)^2 + a \Rightarrow f > 0 \Rightarrow a = 4 \cdot 0 + 9 \Rightarrow 0 = -1$$

$$\text{اگر } n = 2 \text{ جواب ۹ شود}$$

$$f = -\frac{1}{2}(n-2)^2 + a = -n^2 + 2n + a \Rightarrow (n+1)(n-a)(-1) \Rightarrow n = -1, a$$

$$\text{if } f > 0 \quad (-1)(n+1)(n-a)$$

$$\begin{array}{c} -1 \quad a \\ -1 \quad - \quad + \quad - \end{array}$$

$$\boxed{(-1, a)} \checkmark$$

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$$\alpha \alpha^T - V \alpha + q \beta = 0, \beta > 0$$

$$q \beta^T - V \beta + q \beta = 0$$

$$\beta (\alpha \beta + q) = 0$$

$$\alpha \beta + q = 0 \Rightarrow \alpha \beta = -q \Rightarrow \frac{-q}{\alpha} = \beta$$

$$\alpha^T - V \alpha + q \beta = 0$$

$$\alpha^T - V \alpha^T - 1 \Lambda = 0$$

$$t^T - V t - 1 \Lambda = 0 \Rightarrow (t - q)(t + q)$$

$$\begin{cases} t^T = -q & \text{UOE} \\ t^T = q \Rightarrow t = \pm q \\ \frac{-q}{\alpha} > 0 \\ \alpha = -q \\ \beta = \frac{q}{q} \end{cases}$$

$$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{1}{q} \Rightarrow \frac{q}{q} = \frac{q}{q}$$

$$\boxed{\frac{V}{q}}$$

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$$\alpha^T + m \alpha - \gamma m$$

$$\alpha^T = -m \alpha + \gamma m, -m \beta = \beta^T - \gamma m$$

$$\alpha^T = m \beta + \Lambda \Rightarrow -m \alpha + \gamma m + \beta^T - \gamma m = \Lambda$$

$$-m \alpha + \gamma m - m \beta + \gamma m = \Lambda$$

$$-m(-m) + \gamma m = \Lambda$$

$$m^2 + \gamma m - \Lambda = 0$$

$$S \Rightarrow m^2 - S m + P$$

$$\boxed{S = -\gamma}$$

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$$y = O(m - m_{\max})^T + y_{\max}$$

$$y = O(m - q)^T + q \Rightarrow y = O(-q)^T + q \Rightarrow 0 = -\frac{1}{q}$$

$$-\frac{1}{q}(m^T - fm + f) + q \Rightarrow -\frac{1}{q}m^T + \gamma m + f$$

$$-m^T + fm + \Lambda$$

$$S = f$$

$$p = -\Lambda$$

$$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{S}{p} = \frac{f}{-\Lambda} = \boxed{-\frac{1}{f}}$$

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$$y_{\max} = \frac{-\Delta}{f_a} \Rightarrow -\frac{b^T + f_a c}{f_a} = -\frac{((1 - fm)(\frac{m}{q} + V))}{fm} = \Lambda$$

$$\gamma m^T + \gamma \Lambda m - 1 \gamma = \gamma \gamma m$$

$$\gamma m^T - fm - 1 \gamma = 0$$

$$m^T - fm - \gamma \gamma = 0$$

$$(m - \Lambda)(m + f)$$

$$\frac{\Lambda}{f} \quad \frac{-f}{f}$$

$$a < 0 \Rightarrow f \Rightarrow \text{UOE}$$

$$\begin{cases} m m^T + fm + \frac{m}{f} + V \\ -\gamma m^T + fm + \gamma \end{cases} \Rightarrow \begin{cases} -\alpha^T fm + 1 \gamma = (m + f)(m + \gamma) \\ + \frac{\gamma}{f} \quad \frac{-\gamma}{f} \end{cases}$$

$$\boxed{n = 3}$$

$$n = -1$$

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$$n^T - (f_a + f) m + (\gamma a^T + \gamma a + \gamma) = 0 \Rightarrow n = f \Rightarrow 0$$

$$f - \Lambda a - \Lambda + \gamma a^T + \gamma a + \gamma = 0$$

$$a = 1 \Rightarrow n^T - \Lambda n + 1 \gamma = 0 \Rightarrow (n - q)(n - \gamma) = 0$$

$$\gamma a^T - \gamma a - 1 = 0$$

$$a^T - \gamma a - \gamma = 0$$

$$(a - \gamma)(a + \gamma) = 0$$

$$a = \frac{\gamma}{f} \quad \frac{-1}{f}$$

$$a = -\frac{1}{f} \Rightarrow n^T - \frac{\Lambda n}{f} + \frac{f}{f} = 0$$

$$\gamma a^T - \Lambda n + f = 0$$

$$\begin{cases} \frac{\gamma}{f} \\ \frac{\gamma}{f} \end{cases} \Rightarrow \boxed{\frac{\gamma}{f}}$$

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$$n^T - \Lambda n + 1 \gamma = 0 \Rightarrow (n - q)(n - \gamma)$$

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