

$$y = (a-1)x^2 + x + 3$$

-1

$$K_5: \frac{b}{x_0} = 2 = \frac{-1}{2a-2} \rightarrow \varepsilon a - \varepsilon = -1 \rightarrow \varepsilon a = 2 \rightarrow a = \frac{2}{\varepsilon}$$

$$y = -\frac{1}{\varepsilon}x^2 + x + 3$$

$$0 = -\frac{1}{\varepsilon}x^2 + x + 3 \rightarrow 0 = -x^2 + \varepsilon x + 12 \rightarrow 0 = x^2 - \varepsilon x - 12$$

$$\boxed{x=4}, x=-2 \text{ ق ق } \varepsilon$$

L, جدول مشتق

-2

$$f(x) = mx^2 - \omega x + m$$

$$\boxed{m < 0}$$

$$0 > 0 \rightarrow 20 - \varepsilon(m)(m) > 0 \rightarrow 20 - \varepsilon m^2 > 0 \rightarrow 20 > \varepsilon m^2 \rightarrow$$

$$\frac{20}{\varepsilon} > m^2 \rightarrow \boxed{\frac{-\omega}{2} < m < \frac{\omega}{2}} \xrightarrow{\text{استدلال}} m = \left(-\frac{\omega}{2}, 0\right)$$

-3

$$15 \quad \frac{3-\sqrt{5}}{2}, \frac{3+\sqrt{5}}{2} \rightarrow S = \frac{3+3+\sqrt{5}-\sqrt{5}}{2} = 2$$

$$P_2 \left( \frac{3-\sqrt{5}}{2} \right) \left( \frac{3+\sqrt{5}}{2} \right) \rightarrow \frac{9-5}{4} = \frac{\varepsilon}{4}$$

$$2x^2 - 5x + P = 0 \rightarrow 2x^2 - 2x + \frac{\varepsilon}{4} = 0 \rightarrow 9x^2 - 18x + \varepsilon = 0$$

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$$\gamma \alpha^2 - \lambda m + m + \gamma = 0$$

$$\alpha < \beta$$

$$s = \varepsilon \quad p = \frac{m + \gamma}{\gamma} - \gamma$$

$$\gamma \alpha^2 + \beta^2 = 1\gamma$$

$$\gamma \alpha^2 + \underbrace{\alpha^2 + \beta^2}_{s^2 \gamma p} = 1\gamma \rightarrow \gamma \alpha^2 + 1\gamma - m - \gamma = 1\gamma$$

$$\left\{ \begin{array}{l} \wedge \alpha - m - \gamma + 1\gamma - m - \gamma = 1\gamma \\ \wedge \alpha - \gamma m + 1\gamma = 1\gamma \end{array} \right.$$

$$\wedge \alpha - \gamma m = 0$$

$$\wedge \alpha \geq \gamma m \rightarrow m \geq \varepsilon \alpha$$

$$\alpha \beta = \frac{\gamma m + \gamma}{\gamma} = \frac{\varepsilon \alpha + \gamma}{\gamma} = \gamma \alpha + 1$$

$$\alpha \beta = \gamma \alpha + 1 \rightarrow \beta = \frac{\gamma \alpha + 1}{\alpha}$$

$$10 \quad \alpha + \beta = \frac{\gamma \alpha + 1}{\alpha} + \frac{\alpha^2}{\alpha} = \frac{\alpha^2 + \gamma \alpha + 1}{\alpha} = \varepsilon \rightarrow \alpha^2 + \gamma \alpha + 1 = \varepsilon \alpha$$

$$\alpha^2 - \gamma \alpha + 1 = 0 \rightarrow \alpha = 1$$

$$\alpha + \beta = \varepsilon \rightarrow 1 + \beta = \varepsilon \rightarrow \beta = \gamma \quad \left\{ m = \varepsilon \alpha \rightarrow m = \gamma \right\}$$

- w

$$15 \quad s | \dot{q} \quad A | \dot{\omega}$$

$$y = a(n-h)^2 + k \rightarrow y = a(n-\gamma)^2 + q \quad \begin{array}{l} y = \omega \\ n = 0 \end{array} \rightarrow \omega = \varepsilon a + q$$

$$\rightarrow -\varepsilon a = \gamma \rightarrow a = -1$$

$$y = -1(n-\gamma)^2 + q \rightarrow y = -1(n^2 + \varepsilon - \varepsilon n) + q \rightarrow y = -n^2 + \varepsilon n - \gamma + q$$

$$\rightarrow y = -n^2 + \varepsilon n + \omega \quad \begin{array}{l} \omega > 0 \\ \omega < 1,33 \end{array} \rightarrow -n^2 + \varepsilon n + \omega > 0$$

$$\frac{-1}{-1} + \frac{\omega}{1} \rightarrow -1 < n < \omega$$

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$$\alpha^2 - \sqrt{q}\alpha + q\beta = 0 \quad \beta > 0$$

-4

$$\alpha + \beta = \frac{\sqrt{q}}{\alpha}$$

$$\alpha\beta = \frac{q\beta}{\alpha} \rightarrow \alpha^2\beta = q\beta \rightarrow \alpha^2 = q \rightarrow \alpha = \pm\sqrt{q}$$

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$$\checkmark \alpha = \sqrt{q} \rightarrow \alpha + \beta = \frac{\sqrt{q}}{\alpha} \rightarrow \sqrt{q} + \beta = \frac{\sqrt{q}}{\sqrt{q}} \rightarrow \beta = \frac{\sqrt{q}}{\sqrt{q}} - \sqrt{q} = -\frac{\sqrt{q}}{\sqrt{q}}$$

چون  $\alpha \neq \sqrt{q}$  نیست زیرا  $\beta$  نباید منفی باشد

$$\checkmark \alpha = -\sqrt{q} \rightarrow -\sqrt{q} + \beta = \frac{\sqrt{q}}{-\sqrt{q}} \rightarrow \beta = -\frac{\sqrt{q}}{-\sqrt{q}} + \sqrt{q} = \frac{\sqrt{q}}{\sqrt{q}} \checkmark$$

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$$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{1}{-\sqrt{q}} + \frac{1}{\frac{\sqrt{q}}{\sqrt{q}}} = -\frac{1}{\sqrt{q}} + \frac{\sqrt{q}}{\sqrt{q}} = \frac{\sqrt{q}}{q}$$

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

-4

$$\alpha^2 - m\beta = 1$$

15

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

$$\alpha\beta = -\gamma m \rightarrow \beta = \frac{-\gamma m}{\alpha}$$

$$\alpha^2 - m\left(\frac{-\gamma m}{\alpha}\right) = 1 \rightarrow \alpha^2 + \frac{\gamma m^2}{\alpha} = 1 \rightarrow \alpha^3 + \gamma m^2 = \alpha$$

$$\alpha + \beta = -m, \quad \beta = \frac{-\gamma m}{\alpha}$$

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$$\alpha + \frac{-\gamma m}{\alpha} = -m \rightarrow \alpha^2 - \gamma m = -m\alpha \rightarrow \alpha^2 = -m\alpha + \gamma m \rightarrow$$

$$m = \frac{\alpha^2}{\gamma - \alpha} \rightarrow \alpha^3 + \gamma \left( \frac{\alpha^2}{\gamma - \alpha} \right)^2 = \alpha$$

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$$-V \leftarrow \sim b1$$

$$\frac{x(r-\alpha)^2}{\alpha^2(r-\alpha)^2 + r\alpha^2} = \wedge \alpha(r-\alpha)^2$$

$$\alpha^2(\varepsilon - \varepsilon\alpha + \alpha^2) + r\alpha^2 = \wedge \alpha(\varepsilon - \varepsilon\alpha + \alpha^2)$$

$$\varepsilon\alpha^2 - \varepsilon\alpha^2 + \alpha^2 + r\alpha^2 = r\alpha - r\alpha^2 + \wedge \alpha^2$$

$$\alpha^2 - r\alpha^2 + \varepsilon\alpha^2 = r\alpha - r\alpha^2 + \wedge \alpha^2$$

$$\alpha^2 - r\alpha^2 - \varepsilon\alpha^2 + r\alpha^2 - r\alpha = 0$$

$$\alpha(\alpha^2 - r\alpha - \varepsilon\alpha^2 + r\alpha - r) = 0 \Rightarrow \alpha^2 - r\alpha - \varepsilon\alpha^2 + r\alpha - r = 0$$

$$\alpha \approx 1,2\varepsilon$$

$$m = \frac{\alpha^2}{r-\alpha} \rightarrow m = \frac{(1,2\varepsilon)^2}{r-1,2\varepsilon} = \frac{1,44\varepsilon^2}{r-1,2\varepsilon} \approx 1,02$$

$$\alpha + \beta = -m \approx -1,02 \approx -1$$

$$f(m) = m\alpha^2 + \varepsilon m + \frac{m}{r} + v \quad m < 0$$

$$y_5 = \wedge \quad \frac{-b}{\varepsilon a} = \wedge \rightarrow \frac{-b^2 + \varepsilon a c}{\varepsilon a} = \wedge \rightarrow$$

$$\frac{-14 + \varepsilon m(\frac{m}{r} + v)}{\varepsilon m} = \wedge \rightarrow \frac{-14 + r m^2 + r \wedge m}{\varepsilon m} = \wedge \rightarrow$$

$$-14 + r m^2 + r \wedge m = r m \rightarrow r m^2 - \varepsilon m - 14 = 0 \rightarrow$$

$$m^2 - r m - \wedge = 0 \quad \begin{cases} m = \varepsilon \sqrt{\varepsilon} \\ m = -r \sqrt{v} \end{cases}$$

$$f(m) = -r m^2 - \wedge m + 4 \rightarrow 0 = -r m^2 - \wedge m + 4 \rightarrow 0 = m^2 + \varepsilon m - r \rightarrow$$

$$\Delta = 14 - \varepsilon(1)(-r) = 14 + 1,2 \times \wedge \quad m_1 = -\varepsilon - \sqrt{v} \times$$

$$m_2 = -\varepsilon + \sqrt{v} \sqrt{\rightarrow} K > 0$$

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$$y = a(n-h)^2 + k \rightarrow y = a(n-r)^2 + 4 \xrightarrow[n=0]{y=\varepsilon}$$

$$\varepsilon = a(4) + 4 \rightarrow -2 = \varepsilon a \rightarrow a = \frac{-2}{\varepsilon} = -\frac{1}{\varepsilon}$$

$$y = -\frac{1}{\varepsilon}(n-r)^2 + 4 \rightarrow y = -\frac{1}{\varepsilon}(n^2 + \varepsilon - \varepsilon n) + 4 \rightarrow$$

$$y = -\frac{1}{\varepsilon}n^2 - 2 + 2n + 4 \Rightarrow y = -\frac{1}{\varepsilon}n^2 + 2n + \varepsilon \left\{ \begin{array}{l} S: \frac{-2}{\varepsilon} = \varepsilon \\ P: \frac{\varepsilon}{-\frac{1}{\varepsilon}} = -\varepsilon \end{array} \right.$$

$$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{\alpha + \beta}{\alpha\beta} = \frac{\varepsilon}{-\varepsilon} = -\frac{1}{\varepsilon}$$

-10

$$n^2 - (\varepsilon a + \varepsilon)n + (\varepsilon a^2 + 4a + 4) = 0 \xrightarrow{n=r}$$

$$\varepsilon - \varepsilon a - \varepsilon + \varepsilon a^2 + 4a + 4 = 0 \rightarrow \varepsilon a^2 - \varepsilon a - 1 = 0 \left\{ \begin{array}{l} \rightarrow a = 1 \\ \rightarrow a = -\frac{1}{\varepsilon} \end{array} \right.$$

$$a = 1 \rightarrow n^2 - \varepsilon n + 1\varepsilon = 0 \left\{ \begin{array}{l} \rightarrow n = \varepsilon \\ \rightarrow n = 4 \end{array} \right.$$

$$\forall a = -\frac{1}{\varepsilon} \rightarrow n^2 - \frac{1}{\varepsilon}n + \frac{\varepsilon}{\varepsilon} = 0 \rightarrow \varepsilon n^2 - n + \varepsilon = 0$$

$$\xrightarrow{ac} n^2 - \varepsilon n + 1\varepsilon = 0 \left\{ \begin{array}{l} \rightarrow n = \frac{\varepsilon}{\varepsilon} \\ \rightarrow n = \frac{4}{\varepsilon} = \varepsilon \end{array} \right.$$

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$$n_1 = \varepsilon, n_2 = \frac{\varepsilon}{\varepsilon} \leftarrow a = -\frac{1}{\varepsilon} \quad \forall$$

$$n_1 = \varepsilon, n_2 = 4 \leftarrow a = 1 \quad \forall$$

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