

$$\frac{-b}{2a} = 2 \quad \frac{-1}{2(a-1)} = 2 \Rightarrow a = \frac{3}{2}$$

$$= \frac{1}{2}x^2 + x + 3 \xrightarrow{\times 2} x^2 - 4x - 12 \quad \Delta = b^2 - 4ac = 16 + 48 = 64$$

$$\frac{4 \pm \sqrt{64}}{2} \rightarrow x = 6 \quad x = -2$$

طرح مستقیم

$$\Delta = (-a)^2 - 4(m)(m) = 4a^2 - 4m^2 > 0$$

$$4m^2 < 4a^2 \quad m^2 < \frac{4a^2}{4} \quad -\frac{a}{1} < m < \frac{a}{1}$$

$$m < 0 \quad \xrightarrow{\quad \quad \quad} 1$$

$$\boxed{-\frac{a}{1} < m < 0}$$

$$S = \frac{3-\sqrt{a}}{3} + \frac{3+\sqrt{a}}{3} = \frac{6}{3} = 2 \quad x^2 - 5x + p = 0$$

$$p = \left(\frac{3-\sqrt{a}}{3}\right)\left(\frac{3+\sqrt{a}}{3}\right) = \frac{4}{9} \quad y = x^2 - 4x + \frac{4}{9} \xrightarrow{\times 9}$$

$$\boxed{y = 9x^2 - 36x + 4}$$

$$S = 5 \quad \alpha + \beta = 5 \quad \alpha\beta = 12 \quad \beta^2 = \alpha^2 - 1\alpha + 12 \quad p = \frac{m+1}{2} = 3$$

$$3\alpha^2 + \alpha^2 - 1\alpha + 12 - 12 = 0$$

$$3(1)^2 + \beta^2 = 12$$

$$m+1 = 6$$

$$m = 5$$

$$3\alpha^2 - 1\alpha + 5 = 0$$

$$\beta^2 = 4$$

$$\beta = \pm 2$$

$$\alpha = 1 \quad \beta = 3$$

$$\alpha^2 - 2\alpha + 1 = 0 \rightarrow (\alpha - 1)^2 = 0$$

$$\alpha = 1$$

$$\boxed{m = 5}$$

$$\frac{x_1 + x_2}{2} = 2 \quad x_1 + x_2 = 4 \quad x_2 = -1$$

سوی یک بازوی (a و -1) بالای محور مختصات.

$$4) \quad \alpha + \beta = \frac{4}{3} \quad \left\{ \begin{array}{l} \alpha = 3 \quad \beta = -\frac{5}{3} \times \\ \alpha = -3 \quad \beta = \frac{14}{3} \checkmark \end{array} \right.$$

$$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{4}{3}$$

$$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{5}{p} \quad s = \frac{v}{\alpha} \quad p = \frac{q\beta}{\alpha} \quad \beta \neq 0 \rightarrow \alpha = \pm 4$$

$$\alpha \cdot \beta = \frac{q\beta}{\alpha} \quad \alpha = \frac{q\beta}{\beta} = \frac{q}{\alpha}$$

$$\alpha + \beta = \frac{v}{\alpha} \quad \beta = \frac{v}{\alpha} - \frac{q}{\alpha} \quad \beta = \frac{-4}{\alpha}$$

$$\frac{\frac{v}{\alpha}}{\frac{q\beta}{\alpha}} = \frac{v}{q\beta} \rightarrow \frac{v}{q(\frac{-4}{\alpha})} = \frac{v}{-4} = \frac{v\alpha}{-4\alpha}$$

$$\boxed{\frac{v\alpha}{-4\alpha} = \frac{v}{4\beta}}$$

7.5

6

$$s = -m \quad p = -2m$$

$$\boxed{s = -2}$$

$$4m^2 + 2m - 1 = 0$$

$$m = -\frac{1}{2} \Rightarrow m = -2$$

محل جذر معادله
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$$\alpha^2 = 2m - m\alpha$$

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

$$2m + m^2 = \alpha$$

محل جذر معادله

1.5

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$$C - \frac{b^2}{\epsilon a} = \frac{m}{\gamma} + \gamma - \frac{19}{\epsilon m} \Rightarrow \frac{m}{\gamma} + \gamma - \frac{\epsilon}{m} = 1$$

$$m^2 - 2m - 1 = 0$$

$$m = \epsilon \Rightarrow m = -2 \rightarrow \text{محل جذر معادله}$$

$$y = -2x^2 + \epsilon x + \gamma$$

$$-2x^2 + \epsilon x + \gamma = 0$$

$$x = -1 \quad \boxed{x = 3}$$

5

8

$$y = a(x-h)^2 + k$$

$$(-\frac{1}{\gamma}x^2 + 2x + \epsilon)x - \gamma$$

$$\text{محل جذر معادله: } \frac{\gamma}{\epsilon + \epsilon\sqrt{3}} + \frac{\gamma}{\epsilon - \epsilon\sqrt{3}}$$

$$\epsilon = a(-\gamma)^2 + \gamma$$

$$x^2 - \epsilon x - 1 = 0$$

$$\frac{1 + \sqrt{3} + 1 - \sqrt{3}}{(\epsilon + \epsilon\sqrt{3})(\epsilon - \epsilon\sqrt{3})} = \frac{19}{19 - \epsilon^2}$$

$$\epsilon a = -\gamma$$

$$\Delta = b^2 - \epsilon a C$$

$$19 + 4\gamma = \epsilon^2$$

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

$$y = -\frac{1}{\gamma}(x-\gamma)^2 + \gamma$$

$$\text{محل جذر معادله: } \frac{\epsilon \pm \epsilon\sqrt{3}}{\gamma}$$

$$\frac{19}{-3\gamma} = \left(-\frac{1}{\gamma}\right)$$

5

9

$$x_1 + x_2 = \epsilon a + \epsilon \xrightarrow{x_1 = \gamma} x_2 = \epsilon a + \gamma$$

$$x_1 x_2 = \gamma a^2 + \gamma a + \gamma \quad \bullet \quad \gamma(\epsilon a + \gamma) = \gamma a^2 + \gamma a + \gamma$$

$$1a + \epsilon = \gamma a^2 + \gamma a + \gamma$$

$$\gamma a^2 - \gamma a - 1 = 0$$

$$(\gamma a - \gamma)(\gamma a + 1) = a = 1$$

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

$$\boxed{x_2 = \gamma \pm \frac{\gamma}{\gamma}}$$

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