

$$\frac{-b}{2a} = -1 \Rightarrow b = 2a, \quad \frac{-\Delta}{4a} = \frac{-4a^2 + 4ac}{4a} = 9 \Rightarrow c - a = 9 \Rightarrow c = 9 + a$$

$$\begin{cases} 3 \\ 1 \end{cases} \Rightarrow 9a + 3b + c = 1 \Rightarrow 14a = -8 \Rightarrow a = -\frac{8}{14} = -\frac{4}{7}, b = -\frac{8}{7}, c = \frac{67}{7}$$

$$\Rightarrow y = -\frac{4}{7}x^2 - \frac{8}{7}x + \frac{67}{7}$$

$$\frac{c}{a} > 0 \Rightarrow \frac{m+6}{2} > 0 \Rightarrow m+6 > 0 \Rightarrow m > -6, \quad \frac{-b}{a} > 0 \Rightarrow \frac{-m}{2} > 0 \Rightarrow m < 0$$

$$\Delta > 0 \Rightarrow b^2 - 4ac > 0 \Rightarrow m^2 - 8m - 48 > 0 \Rightarrow (m-12)(m+4) > 0$$

$$\begin{array}{cc} -4 & 12 \\ + & - \\ \hline & \end{array}$$

$$\Rightarrow m < -4 \vee m > 12$$

$$\Rightarrow -6 < m < -4$$

$$\frac{-b}{a} = \frac{a}{c} \Rightarrow \frac{-2m+1}{3} = \frac{3}{2-m} \Rightarrow 2m^2 - 5m - 7 = 0 \Rightarrow \begin{cases} m = -1 \times \\ m = \frac{7}{2} \checkmark \end{cases}$$

$$\Delta > 0 \Rightarrow (2m-1)^2 - 12(2-m) > 0 \Rightarrow 4m^2 + 8m - 23 > 0$$

$$4 - 8 - 23 > 0 \quad \leftarrow -1 \cdot m \quad 49 + 28 - 23 > 0 \quad \leftarrow \frac{7}{2} = m$$

$$\Rightarrow -27 > 0 \times \quad \Rightarrow 54 > 0 \checkmark$$

$$m = \frac{7}{2}$$

$$\frac{x_1^3 x_2 + 1}{x_2}, \frac{x_2^3 x_1 + 1}{x_1} \Rightarrow \frac{-4x_1^2 + 1}{x_2}, \frac{-4x_2^2 + 1}{x_1} \quad \times \left(x_2 + \frac{221}{4}x_1 + \frac{51}{4} = 0 \right)$$

$$S = \frac{-4x_1^2 + 1}{x_2} + \frac{-4x_2^2 + 1}{x_1} = \frac{-4(x_1^3 x_2^3 + x_1 + x_2)}{x_1 x_2} = \frac{-4(13) + 1}{-4} = \frac{51}{4}$$

$$P = \frac{(-4x_1^2 + 1)(-4x_2^2 + 1)}{x_1 x_2 - 4} = \frac{1 + 16x_1^2 x_2^2 - 4(x_1^2 + x_2^2)}{-4} = \frac{257 - 4(9)}{-4} = -\frac{221}{4}$$

$$\frac{x^2 + \sqrt[3]{x^2}}{\sqrt[3]{x^2}} + \sqrt[3]{x^2} - 1 - \frac{\sqrt[3]{x^4} + 1}{\sqrt[3]{x^2}} = 2\sqrt[3]{x} \Rightarrow \frac{x^2}{\sqrt[3]{x^2}} + 1 + \sqrt[3]{x^2} - \frac{x\sqrt[3]{x} + 1}{\sqrt[3]{x^2}} = 2\sqrt[3]{x}$$

$$\Rightarrow \frac{x^2 + x\sqrt[3]{x} + 1}{\sqrt[3]{x^2}} = 2\sqrt[3]{x} \Rightarrow x^2 + x\sqrt[3]{x} + 1 = 2x \Rightarrow x^2 + (\sqrt[3]{x} - 2)x + 1$$

$$\Rightarrow S = \frac{-b}{a} = 2 - \sqrt[3]{x}$$

$x_1 = 3x_2$ $3x_1^2 - ax_1 + 4 = 0$ $S = -\frac{b}{a} = 4x_2 \Rightarrow \frac{a}{3} = 4x_2 \Rightarrow a = 12x_2$ $P = \frac{c}{a} = 3x_2^2 \Rightarrow \frac{4}{3} = 3x_2^2 \Rightarrow 9x_2^2 = 4 \Rightarrow x_2^2 = \frac{4}{9} \Rightarrow x_2 = \pm \frac{2}{3}$ $\Rightarrow a = 12x_2 \Rightarrow \begin{cases} a = 8 \\ a = -8 \end{cases} \rightarrow 8 - (-8) = 16$ اختلاف دو تا	6
④، ⑤ $\Delta > 0 \Rightarrow (3+2a)^2 - 4 \cdot 3 \cdot 4 > 0$ $a > 0 \rightarrow$ مثبت $-\frac{b}{a} > 0 \Rightarrow \frac{-3-2a}{a} > 0 \Rightarrow -3-2a > 0 \Rightarrow 2a < -3 \Rightarrow a < -\frac{3}{2}$ ⑤ $\Rightarrow$ هیچ عددی در این بازه نیست	7
$\Rightarrow$ (نسبت، تناسب) $\frac{-b_1}{2a_1} = \frac{-b_2}{2a_2} \Rightarrow \frac{-a}{2} = \frac{2}{-2} \Rightarrow a = 2$ برابر $\Rightarrow 4 + 8 = 4 - 4(-1)(b) \Rightarrow 12 = 4 + 4b \Rightarrow b = 2$ $\Rightarrow ab = 2 \times 2 = 4$	8
$\frac{a}{2} + \frac{a}{2a} = 1 \Rightarrow \frac{a}{2} + \frac{1}{2} = 1 \Rightarrow a = 1$ $\frac{a}{2}$ $\frac{-6}{2a} = \frac{b}{2} \Rightarrow b = -6$ $\Rightarrow \frac{ab}{4} = \frac{-6}{4} \Rightarrow \left[\frac{ab}{4}\right] = -2$	9
$S_A = P + Z$ $S_B = K + P \Rightarrow S_A - S_B = Z - K$ $S_A = -6, S_B = -2 \Rightarrow Z - K = -2 + 6 = 4$ $\frac{-6}{4}$	10