

$$S_2 = \frac{-b}{2a} \Rightarrow z = -1 \Rightarrow b = 2a \Rightarrow a = 1, b = 2, c = 1$$

$$\Rightarrow \begin{bmatrix} -1 \\ a \end{bmatrix} \rightarrow a - 2a + c = 0$$

$$\Rightarrow a = \frac{1}{2}$$

$$c = \frac{1}{2} \Rightarrow y = \frac{1}{2}x^2 - x + \frac{1}{2}$$

$$\begin{bmatrix} 2 \\ 1 \end{bmatrix} \rightarrow 9a + 4a = 1$$

$$b = 2a - \frac{1}{2} = -1$$

$$\Delta > 0 \Rightarrow m^2 - 12m + 4 > 0 \quad \begin{matrix} -4 & 12 \\ + & - & + \end{matrix} \quad m \in [4, 12]$$

$$S > 0 \Rightarrow \frac{-m}{4} > 0 \Rightarrow m < 0$$

$$\text{استرال} = (-4, -12)$$

$$P > 0 \Rightarrow \frac{m+4}{4} > 0 \Rightarrow m > -4$$

$$\alpha + \beta = \frac{1}{\alpha\beta} \Rightarrow \frac{1-2m}{4} = \frac{4}{4-m} \Rightarrow 2m^2 - 8m + 4 = 0 \Rightarrow m^2 - 4m + 2 = 0$$

$$\Delta = 48 - (-84) = 132 \quad \frac{8 \pm \sqrt{132}}{2} = \frac{8 \pm 2\sqrt{33}}{2} = 4 \pm \sqrt{33}$$

$$x^2 - x - 4 = 0 \Rightarrow S = 1, P = -4$$

$$S' = x_1' + x_2' + \frac{1}{x_1} + \frac{1}{x_2} = S - 4SP + \frac{S}{P} = 1 + 12 - \frac{1}{4} = \frac{47}{4}$$

$$P' = (x_1' + \frac{1}{x_1})(x_2' + \frac{1}{x_2}) = P + \frac{1}{P} + S^2 - 4P = -4 + \frac{1}{4} + 1 + 12 = \frac{21}{4}$$

$$x^2 - S'x + P' = x^2 - \frac{47}{4}x + \frac{21}{4}$$

$$\sqrt{x} = t \Rightarrow (t^2 + \frac{1}{t^2} + 1)(t^2 - 1) = 4t$$

$$\Rightarrow t^4 - \frac{1}{t^4} = 4t \Rightarrow t^8 - 1 = 4t^5 \Rightarrow t^8 - 4t^5 - 1 = 0$$

$$\Rightarrow t^4 = \frac{1 \pm \sqrt{5}}{2} \Rightarrow t^2 = \sqrt{\frac{1 \pm \sqrt{5}}{2}} = x \Rightarrow x = \frac{1 \pm \sqrt{5}}{2} \Rightarrow x_1 + x_2 = 1 + \sqrt{5} + 1 - \sqrt{5} = 2$$

$$x_1 \geq a, x_2 \geq a \Rightarrow P_1: \frac{c}{a} \geq \frac{c}{a} \geq (a^2) \Rightarrow a^2 \geq \frac{c}{a} \Rightarrow a \geq \pm \frac{\sqrt{c}}{a} \quad -4$$

$$S_1: \frac{-b}{a} \geq \frac{a}{c} \geq a \Rightarrow a \geq \frac{a}{c} \Rightarrow a \geq \frac{1}{c} \quad \wedge, \quad \wedge - (\wedge) \Rightarrow 19$$

$$C_1 \geq 0 \Rightarrow 0 \geq \frac{c}{a} \Rightarrow \frac{c}{a} \leq 0$$

$$\Delta \geq 0 \Rightarrow (a^2 + 4 + 12a) \geq 0 \Rightarrow a \geq -\frac{c}{4} \quad (\text{غير قابل قبول}) \quad \text{حالت اول}$$

$$P_2:$$

$$S_2: \geq \frac{-c - 2a}{a} \geq a \geq \frac{c}{4} \quad (\text{غير قابل قبول})$$

$$a > 0 \rightarrow b \text{ Min}$$

$$\Delta > 0 \Rightarrow (a^2 + 4 + 12a) > 0 \Rightarrow a > -\frac{c}{4}$$

حالت دوم

$$P_2:$$

$$S_2: \geq \frac{-c - 2a}{a} > 0 \Rightarrow a < -\frac{c}{4} \quad (\text{غير قابل قبول}) \Rightarrow \text{رایج مقدار } a$$

$$\frac{-b}{ca} \geq \frac{c}{a} \geq \frac{a}{c} \Rightarrow a \geq \frac{1}{c} \quad \begin{cases} -a^2 - 2a + b \geq 1 \\ a^2 + 2a - 2 \geq 0 \end{cases} \quad \text{! در این استرل} \quad -1$$

$$\geq b - 4 \geq 2 \geq b \geq 4$$

$$a \cdot b \geq 2, \varepsilon \geq 1$$

$$2a \geq a^2 + a - 4 \Rightarrow a \in \mathbb{R}, \frac{-a}{ca} \geq \frac{1}{c} \quad \text{! در این استرل} \quad -2$$

$$(a + \frac{1}{c}) + (b + \frac{1}{c}) \geq a + b + 1 \geq \frac{1}{c} + 1 \geq \frac{a}{c} + \frac{1}{c} \geq a \geq 1$$

$$\frac{c}{a} \geq \frac{1}{c} \geq -c \geq a \geq b \quad (a + \frac{1}{c})(b + \frac{1}{c}) \geq a + b + \frac{1}{c} + \frac{1}{c}$$

$$-c + \frac{1}{c} - \frac{1}{c} \geq -c \geq -c, \frac{b}{c} \geq b \geq -9 \quad \left[\frac{ab}{\varepsilon} \right] \geq \left[\frac{-9}{\varepsilon} \right] \geq -2$$

$$S \geq a + b \geq \frac{-b}{a} \geq \frac{-9}{1} \geq -9 \quad S' \geq b + c \geq \frac{-b}{a} \geq \frac{-9}{1} \geq -9 \quad -1$$

$$b + a \geq -9 \Rightarrow |a - c| \geq |-9 + 4| \geq 5$$

$$-1 \geq b + c \geq -2$$