

$$x = \alpha(x+1)^2 + 9$$

جایگذاری (۳ و ۱)

$$\alpha(3+1)^2 + 9 = 1$$

(۱)

$$16\alpha = -8$$

$$\alpha = -\frac{1}{2}$$

$$x = -\frac{1}{2}(x+1)^2 + 9$$

$$x = -\frac{x^2}{2} - x + \frac{17}{2}$$

$$\Delta > 0 \rightarrow m^2 - 18m - 14 > 0$$

$$\begin{array}{c|c|c} -14 & & 18 \\ \hline + & - & + \end{array}$$

(۲)

$$P > 0 \rightarrow \frac{m+6}{2} > 0 \rightarrow m > -6$$

$$\cap \rightarrow (-6, -4)$$

$$S > 0 \rightarrow \frac{-m}{2} > 0 \rightarrow m < 0$$

$$S = \frac{1}{p} \rightarrow \frac{-2m+1}{2} = \frac{2}{2-m} \rightarrow 2m^2 - 2m - 1 = 0$$

(۳)

$$m \rightarrow \begin{cases} \frac{1}{2} \\ -1 \end{cases}$$

نی تونه باشه چون وقتی در معادله جایگذاری کنیم $\Delta < 0$ میشه. $x^2 - x + 1 = 0$

$$پس \quad m = \frac{1}{2}$$

$$x^2 - x - 1 = 0 \quad \begin{cases} P = -1 \\ S = 1 \end{cases}$$

$$P_0: \frac{S-2P}{x_1x_2 + x_1^2 + x_2^2 + \frac{1}{x_1x_2}} = \frac{-1-2(1)}{-1+1+1+(-\frac{1}{-1})} = \frac{-3}{1} = -3$$

(۴)

$$x^2 - Sx + P = 0 \rightarrow S: \frac{S}{x_1x_2 + x_1^2 + x_2^2 + \frac{1}{x_1x_2}} = \frac{1}{-1+1+1+(-\frac{1}{-1})} = \frac{1}{1} = 1$$

$$x^2 - \frac{51}{2}x - \frac{221}{2} = 0 \xrightarrow{\times 2} 2x^2 - 51x - 221 = 0$$

$$2x^2 - 51x - 221 = 0$$

دو طرف معادله ضرب کر

$$(\sqrt[3]{x^3} + 1 + \sqrt[3]{x^3}) (\sqrt[3]{x^3} - 1) = 2x \quad (\text{فیل و فیلو})$$

$$x^3 - 1 = 2x \rightarrow x^3 - 2x - 1 = 0$$

$$S = \frac{-b}{a} = \boxed{2}$$

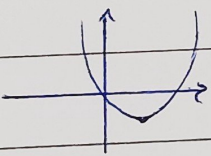
$$\alpha = 3\beta \rightarrow P = \frac{c}{a} = 3\beta^3 = \frac{r}{3} \rightarrow \begin{cases} B = \pm \frac{r}{3} \\ \alpha = \pm 2 \end{cases}$$

$$\textcircled{1} \text{ معادله} = ax - Sx + P \rightarrow 3x - 1x + \frac{r}{3} = 0$$

$$\Rightarrow \alpha = \pm 1$$

$$\textcircled{2} \text{ معادله} = ax - Sx + P \rightarrow 3x + 1x + \frac{r}{3} = 0$$

اختلاف 8: 19



$$\left\{ \begin{array}{l} \boxed{\alpha > 0} \\ S > 0 \rightarrow \frac{-3-2\alpha}{\alpha} > 0 \\ P = 0 \\ \blacktriangle \lambda > 0 \rightarrow 12\alpha^2 + 12\alpha + 9 > 0 \end{array} \right. \left\{ \begin{array}{l} \text{Number line with points } -\frac{3}{2} \text{ and } 0. \\ \text{Signs: } - \text{ for } x < -\frac{3}{2}, + \text{ for } -\frac{3}{2} < x < 0, - \text{ for } x > 0. \\ \text{Another number line with points } -\frac{3}{2} \text{ and } 0. \\ \text{Signs: } - \text{ for } x < -\frac{3}{2}, + \text{ for } -\frac{3}{2} < x < 0, - \text{ for } x > 0. \end{array} \right.$$

کثیرالمرکز $\rightarrow \boxed{(0, +\infty)}$

$$2x = \frac{-b}{2a} \Rightarrow \frac{-a}{2} = \frac{2}{-2} \rightarrow a = 2$$

(1)

$$① \text{ فرض } = 1 = x^2 + 2x - 2 \Rightarrow x^2 + 2x - 3 = 0 \quad x \begin{matrix} \rightarrow 1 \\ \rightarrow -3 \end{matrix}$$

$$② \text{ فرض } = \begin{cases} x=1 \rightarrow 1 = -1 - 2 + b \rightarrow \boxed{b=4} \checkmark \\ x=-3 \rightarrow 1 = -9 + 6 + b \rightarrow \boxed{b=4} \checkmark \end{cases}$$

$$ab = 2 \times 2 = 4$$

$$① \quad 2ax^2 + ax - 5 = 0 \rightarrow \begin{matrix} \alpha \\ \beta \end{matrix} \rightarrow S = -\frac{1}{2} = \alpha + \beta$$

(9)

$$② \quad 2x^2 - ax + b = 0 \rightarrow \begin{matrix} \alpha + \frac{1}{2} \\ \beta + \frac{1}{2} \end{matrix} \rightarrow S = \alpha + \beta + 1 = \frac{1}{2}$$

$$\div 2 \quad x^2 - \frac{a}{2}x + \frac{b}{2} = 0$$

$$x^2 - Sx + P = 0 \rightarrow S = \frac{1}{2} = -\frac{a}{2} \rightarrow \boxed{a = -1}$$

$$\frac{c}{a} = \frac{b}{2} = \frac{5}{2} \rightarrow \boxed{b=5} \rightarrow \left[\frac{-5}{2} \right] = \boxed{-2.5}$$

$$x^2 + 2x - 3m = x^2 + 5x + m \rightarrow -3x = 5x \rightarrow m = -2x$$

(10)

$$x^2 + 5x - x = x^2 + 5x = 0 \quad x \rightarrow 0 \text{ یا } x \rightarrow -5$$

$$x^2 + 5x + 5 = 0 \quad \begin{matrix} \rightarrow -1 \\ \rightarrow -5 \end{matrix} \checkmark$$

$$\rightarrow \boxed{m=5}$$

$$x^2 + 2x - 15 = 0 \quad \begin{matrix} \rightarrow -5 \\ \rightarrow 3 \end{matrix} \checkmark$$

$$\rightarrow \boxed{15} = \text{اختلاف}$$