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$$\begin{cases} 5 = \alpha + \beta \xrightarrow{\beta = 3\alpha} 5 = \alpha + 3\alpha \Rightarrow 4\alpha = 5 \Rightarrow \alpha = \frac{5}{4} \\ p = \alpha\beta \xrightarrow{\beta = 3\alpha} 3\alpha^2 = \frac{5}{4} \Rightarrow \alpha = \pm \sqrt{\frac{5}{12}} \end{cases}$$

$$\alpha = \pm 1$$

$$|1 - (-1)| = 2 \neq 4 \checkmark$$

(2)

$$\frac{1}{\sqrt{2}} + \frac{1}{\sqrt{3}} = \frac{\sqrt{2} + \sqrt{3}}{\sqrt{6}} = \frac{(\sqrt{2} + \sqrt{3})^2}{\sqrt{6}(\sqrt{2} + \sqrt{3})} = \frac{2 + 3 + 2\sqrt{6}}{\sqrt{6}(\sqrt{2} + \sqrt{3})} = \frac{5 + 2\sqrt{6}}{\sqrt{6}(\sqrt{2} + \sqrt{3})}$$

(1, 2)

$$\sqrt{\frac{m+5}{24} + \frac{4}{24}} = \sqrt{\frac{m+9}{24}} = \sqrt{\frac{m+4}{1}} = \sqrt{1} = 1 \Rightarrow m+4 = 1 \Rightarrow m = -3$$

جواب صفحہ آخر

$$4x^2 + 3x + 2 = 0 \Rightarrow x = \frac{-3 \pm \sqrt{9 - 32}}{8} = \frac{-3 \pm \sqrt{-23}}{8}$$

$$\text{فرض: } \alpha > \beta \Rightarrow (\alpha + \beta)^2 - (\alpha - \beta)^2 = 4\alpha\beta \Rightarrow 1 - (\alpha - \beta)^2 = 1 \Rightarrow (\alpha - \beta)^2 = 0$$

$$\Rightarrow |\alpha - \beta| = 0 \xrightarrow{\alpha > \beta} \alpha - \beta = 0$$

(2)

$$\begin{cases} \alpha + \beta = 1 \\ \alpha - \beta = 3 \end{cases} \Rightarrow 2\alpha = 4 \Rightarrow \alpha = 2 \Rightarrow \beta = -1 \xrightarrow{\beta = -1} -5 + 1 + 9 - 2 = 3 \Rightarrow 3 = 3 \checkmark$$

$$\begin{aligned} & 2\alpha^2 + 2\beta^2 = (2, 0)\alpha^2 + (2, 0)\beta^2 + (0, 1)\alpha^2 - (0, 1)\beta^2 = 2, 0(\alpha^2 + \beta^2) + 0, 1(\alpha^2 - \beta^2) \\ & = 2, 0(5^2 - 2^2) + 0, 1\left(\frac{-\sqrt{21}}{10}\right)(5) = 2, 0(25 - 4) + 0, 1(-\sqrt{21} \cdot 5) = 20 - \sqrt{21} \\ & = 20 - \sqrt{21} \cdot 5 = 20 - 5\sqrt{21} = 5(4 - \sqrt{21}) \Rightarrow 4 - \sqrt{21} = 1 \Rightarrow \sqrt{21} = 3 \end{aligned}$$

$$S = 0 \rightarrow \text{المعادلة هي } 2P^2 - 3SP + 2S = 2P^2$$

$$2^2 - \sqrt{2}^2 - 0 = 0 \Rightarrow 2^2 = \frac{V + \sqrt{49}}{2} \Rightarrow 2^2 = \frac{V + 7}{2}$$

$$\begin{cases} \alpha = 4 + \sqrt{\frac{V + 49}{2}} \\ \beta = -\sqrt{\frac{V + 49}{2}} \end{cases} \Rightarrow \alpha^2 = \beta^2 = \frac{V + 49}{2}$$

$$2P^2 = 2(\alpha^2 + \beta^2) = 2\left(\frac{V + 49}{2}\right) = V + 49$$

$$= 29 + \sqrt{49} \checkmark$$

$$4a^2 + a^2 - 4 \geq 0 \quad S_1 = -\frac{1}{4}$$

$$P_1 = -\frac{c}{a} \Rightarrow P_1 = -\frac{1}{4}$$

$$4a^2 - 4a + b = 0$$

$$S_1 = \frac{a}{4} \quad \text{بر سوال دقت کن!}$$

$$P_1 = -\frac{b}{4}$$

$$S_1 = \alpha + 0/d + \beta + 0/d = (\alpha + \beta) + 1 \Rightarrow S_1 + 1 = -\frac{1}{4} + 1 = \frac{3}{4} = \frac{a}{4} \Rightarrow \boxed{a = 3} \quad \checkmark$$

$$P_1 = (\alpha + 0/d)(\beta + 0/d) = \alpha\beta + 0/d(\alpha + \beta) + 0 \times 0 = -\frac{1}{4} + (-\frac{1}{4}) + \frac{1}{4} = -\frac{1}{4} = \frac{b}{4} \Rightarrow \boxed{b = -1}$$

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$$\Rightarrow \left[\frac{ab}{c} \right] = \left[\frac{-1}{4} \right] = -\frac{1}{4} \quad \boxed{-\frac{1}{4}}$$

$$a^2 - a + b \geq 0 \xrightarrow{a=0} 0 - 0 + b \geq 0 \Rightarrow b \geq 0$$

$$4a^2 - 4a + b = 0 \Rightarrow 4a^2 - 4a + b = 0 \Rightarrow 4a^2 - 4a + b = 0$$

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$$S = \alpha + \beta = -\frac{4}{4} = -1$$

$$\Rightarrow 4 + 3b = 1 \Rightarrow b = -1$$

$$\Rightarrow |\alpha - \beta| = \sqrt{\frac{\Delta}{|a|}} = \sqrt{\frac{16 - 4b}{4}} = \sqrt{\frac{16 - 4(-1)}{4}} = \sqrt{\frac{20}{4}} = \sqrt{5} = \frac{\sqrt{5}}{1}$$

$$z^2 - (a+1)z + a \geq 0 \Rightarrow z_1 = 1, z_2 = a \Rightarrow a \geq 1 \Rightarrow P_2 = a \geq 1 \quad \checkmark$$

$$z^2 - (a+1)z + b \geq 0 \Rightarrow z^2 - 10z + b \geq 0 \Rightarrow (z - \alpha)(z - \beta) \geq 0 \Rightarrow z^2 - (\alpha + \beta)z + \alpha\beta \geq 0$$

$$\Rightarrow \alpha + \beta = 10, \alpha\beta = b \xrightarrow{\text{استعاره}} \alpha = 4, \beta = 6 \Rightarrow b = 4 \times 6 = 24$$

$$P_2 = b = 24 \quad \checkmark$$

$$\Rightarrow P_2 - P_1 = 24 - 1 = 23 \quad \checkmark$$

$$\Delta \geq 0 \Rightarrow b^2 - 4ac \geq 0 \Rightarrow 144 + 4m^2 \geq 0 \Rightarrow m^2 + 36 \geq 0$$

$$\alpha^2 + \beta^2 = S^2 - 2P = 144 - 2P \geq 2m^2 \xrightarrow{m \geq 0} \min(\alpha^2 + \beta^2) = 144 - 2 \times 36 = 72$$

$$\begin{cases} A(x, y) \\ B(-x, y) \end{cases} \begin{cases} \text{مساوی است} \\ \text{نمی باشد} \end{cases} \Rightarrow x_5 = \frac{x_A + x_B}{2} = \frac{y - \Delta}{2} = -1 \quad \left\{ \begin{array}{l} \text{ext}(-1, 1) \\ y_5 = +1 \end{array} \right. \quad (P)$$

$$\Rightarrow y = a(x+1)^2 + 1 \Rightarrow y = ax^2 + 2ax + a + 1$$

$$x^2 + y^2 = 5^2 - 4p = 25 - 4\left(\frac{a+1}{a}\right) = 2 \Rightarrow 4\left(\frac{a+1}{a}\right)^2 - 1 \Rightarrow 4a + 8 = -a \Rightarrow a = -\frac{4}{5}$$

$$y = -\frac{4}{5}x^2 - \frac{8}{5}x + \frac{1}{5} \xrightarrow{x=0} y = \frac{1}{5}$$

$$\frac{1}{\sqrt{\alpha}} + \frac{1}{\sqrt{\beta}} = \frac{\sqrt{\alpha} + \sqrt{\beta}}{\sqrt{\alpha\beta}} = 2 \quad \text{پس } \frac{S^r + r\sqrt{p}}{p} = 2a \quad (r)$$

$$S = \frac{m+14}{4p} \xrightarrow{p = \frac{1}{4}} m = -1 \rightarrow -x^2 + 2x + 1 = 0 \rightarrow \frac{c}{a} = \boxed{-2}$$