

Subject : (

19 (الف))

کجا، ماضی

Date :

$$\begin{cases} \alpha = \sqrt[3]{\beta} \\ \alpha\beta = \frac{1}{\sqrt[3]{\beta}} \end{cases} \rightarrow \sqrt[3]{\beta} \alpha \beta = \frac{1}{\sqrt[3]{\beta}} \rightarrow \beta = \frac{1}{\sqrt[3]{\beta}} \rightarrow \alpha = \sqrt[3]{\frac{1}{\beta}} \quad (1)$$

$$\alpha + \beta = \frac{\alpha}{\sqrt[3]{\beta}} \quad \left\{ \begin{array}{l} 1 + \frac{1}{\sqrt[3]{\beta}} = \frac{1}{\sqrt[3]{\beta}} \rightarrow \frac{1}{\sqrt[3]{\beta}} = \frac{\alpha}{\sqrt[3]{\beta}} \Rightarrow \alpha = 1 \\ (-1) + (-\frac{1}{\sqrt[3]{\beta}}) = \frac{1}{\sqrt[3]{\beta}} \rightarrow \alpha = -1 \end{array} \right\} \rightarrow 1 - (-1) = 2$$

$$\sqrt{\frac{1}{\alpha}} + \sqrt{\frac{1}{\beta}} = \omega \rightarrow \text{توان} \rightarrow \frac{1}{\alpha} + \frac{1}{\beta} + \frac{2}{\sqrt{\alpha\beta}} = 2\omega \quad (2)$$

$$\frac{\alpha + \beta}{\alpha\beta} + \frac{2}{\sqrt{\alpha\beta}} = 2\omega$$

$$\frac{m+1}{\sqrt[3]{\beta}} + \frac{2}{\sqrt[3]{\beta}} = 2\omega \rightarrow m = -1 \quad m\alpha + \sqrt[3]{\alpha} + \sqrt[3]{\beta} = 0 \xrightarrow{m=-1}$$

$$-\alpha + \sqrt[3]{\alpha} + \sqrt[3]{\beta} = 0$$

$$\frac{\sqrt[3]{\beta}}{\alpha} = \frac{1}{-1} = -1$$

$$S = \alpha + \beta \quad P = \alpha\beta$$

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$$\rightarrow x^2 - Sx + P = 0$$

$$(x-1)(x+1) = 0$$

$$\rightarrow x = -1, 1$$

$$x = -1 \rightarrow -1 + 1 + 1 - 1 = 0 \rightarrow K = -1$$

—Arman—

$$\gamma \alpha^2 + \gamma \beta^2 \Rightarrow \alpha^2 + \gamma \beta^2 + \gamma \alpha^2 \rightarrow \alpha^2 + \beta^2 = 5^2 - \gamma^2 \quad (1)$$

$$\Delta = 3\gamma - 4\alpha \rightarrow \alpha = \frac{-\gamma - \sqrt{\gamma^2 - 4\Delta}}{2} \Rightarrow \alpha^2 = \frac{\gamma^2 + \gamma^2 - 4\Delta + 12\sqrt{\gamma^2 - 4\Delta}}{4}$$

$$\frac{12\sqrt{\gamma^2 - 4\Delta}}{4} = 12\sqrt{\gamma} \rightarrow \alpha = 1 \quad \text{سخت نک نک}$$

$$u^2 = t \quad u^2 - v u^2 - \omega = 0 \quad \text{معادله درجه دوم} \quad (2)$$

$$t^2 - v t - \omega = 0 \rightarrow t = \frac{v \pm \sqrt{v^2 + 4\omega}}{2} \rightarrow t = x^2$$

$$u^2 = \frac{v + \sqrt{v^2 + 4\omega}}{2} \Rightarrow \begin{cases} u_1 = \sqrt{\frac{v + \sqrt{v^2 + 4\omega}}{2}} \\ u_2 = -\sqrt{\frac{v + \sqrt{v^2 + 4\omega}}{2}} \end{cases} \Rightarrow P = u_1 u_2 = -\frac{(v + \sqrt{v^2 + 4\omega})^2}{4}$$

$$\gamma P^2 = \gamma \left(\frac{(v + \sqrt{v^2 + 4\omega})^2}{4} \right) = \frac{(v + \sqrt{v^2 + 4\omega})^2}{2} = \frac{v^2 + 4\omega + 2v\sqrt{v^2 + 4\omega}}{2}$$

$$\omega^2 + v\sqrt{v^2 + 4\omega}$$

$$\alpha + \beta = \alpha' + \beta' + 1 \rightarrow \frac{\alpha}{\gamma} = \frac{-\alpha}{\gamma\alpha} + 1 = \frac{1}{\gamma} \rightarrow \alpha = 1 \quad (3)$$

$$\gamma u^2 + u - \gamma = 0 \rightarrow \alpha', \beta' = -\gamma, \frac{1}{\gamma} \Rightarrow \alpha, \beta = \frac{\gamma}{\gamma}, \gamma$$

$$\frac{b}{\gamma} = \alpha\beta = -\gamma \rightarrow b = -\gamma^2$$

$$\begin{bmatrix} a & b \\ \gamma & \end{bmatrix} = \begin{bmatrix} \gamma & -\gamma^2 \\ \gamma & \end{bmatrix} = -\gamma$$

— Arman —

$$r \cdot B^r + r \cdot \kappa^r + r \cdot B^r - r \cdot B = IV \quad (V)$$

$$r \cdot (\kappa^r + B^r) + r \cdot (B^r - B) = IV$$

$$r \cdot (S^r - rP) + r \cdot (B^r - B) = IV$$

$$S = \frac{-(-a)}{a} = 1, P = \frac{-b}{a}$$

$$\alpha B^r - \alpha B - b = 0 \rightarrow \alpha (B^r - B) = b \rightarrow B^r - B = \frac{b}{\alpha}$$

$$r \cdot (S^r - rP) + r \cdot (B^r - B) = IV$$

$$r \cdot \left(1 + \frac{r b}{a}\right) = IV \rightarrow r + \frac{r^2 b}{a} + \frac{r \cdot b}{a} = IV$$

$$\frac{r \cdot b}{a} = -r \rightarrow \frac{b}{a} = -\frac{1}{r}$$

$$\frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{(-a)^2 - 4a(-b)}}{|a|} = \frac{\sqrt{a^2 + 4ab}}{|a|} = \frac{|a| \sqrt{1 + \frac{4b}{a}}}{|a|} =$$

$$\sqrt{1 + r \times \left(-\frac{1}{r}\right)} = \frac{r}{\sqrt{\Delta}}$$

— Arman —

$$\lambda^2 - (a+1)\lambda + a = 0 \rightarrow \begin{cases} \lambda = 1 & \text{مقدار} \\ \lambda = a & \text{مقدار} \end{cases} \rightarrow a \neq 1 \quad (1)$$

$$\lambda^2 - (3a+1)\lambda + b = 0 \xrightarrow{a \neq 1} \lambda^2 - 1\lambda + b = 0 \rightarrow \lambda_1 + \lambda_2 = 1$$

$$\begin{aligned} \lambda_1 &= 1 \\ \lambda_2 &= 1 \end{aligned}$$

← مقدار λ_1 و λ_2 در ضرب متساوی

$$\text{افتلاف متساوی} \rightarrow 2^2 - 3 = 1$$

$$\alpha^2 + \beta^2 = S^2 - 2P \quad S = -\frac{1}{1} = -1 \quad P = -1 - m^2 \quad (4)$$

$$\alpha^2 + \beta^2 = (-1)^2 - 2(-1 - m^2) = 1 + 2 + 2m^2 = 2m^2 + 3$$

min مقدار ← عرض/مساحت ← 3

$$\lambda_s = \frac{-b+c}{r} = \frac{-r}{r} = -1 \quad S(-1, 1) \Rightarrow y = a(n+1)^2 + 1 \quad (5)$$

$$y = an^2 + 2an + a + 1$$

$$\alpha^2 + \beta^2 = d \rightarrow S^2 - 2P = d \rightarrow \left(-\frac{2a}{a}\right)^2 - 2\left(\frac{a+1}{a}\right) = d$$

$$4 - 2\left(\frac{a+1}{a}\right) = d \rightarrow \frac{a+1}{a} = -\frac{1}{r}$$

$$-a = 2a + 2 \rightarrow a = -\frac{2}{r}$$

$$a+1 \rightarrow -\frac{2}{r} + 1 = \frac{1}{r}$$

Arman