

$$Pn^2 - an + c = 0$$

$$\alpha = r\beta$$

$$P = \alpha \cdot \beta \rightarrow \frac{c}{a} = r\beta \cdot \beta \rightarrow \frac{c}{r} = r\beta^2 \rightarrow \beta = \frac{r}{\beta} \rightarrow \alpha = r$$
$$\beta = \frac{-r}{r} + \alpha = -r + \alpha = 1 \quad (1)$$
$$\left. \begin{aligned} \beta &= \frac{r}{\beta} \\ \alpha &= r \end{aligned} \right\} \alpha + \beta = \frac{1}{r}$$
$$\frac{-b}{a} = \frac{1}{r}$$
$$a = 1 \leftarrow \frac{a}{r} = \frac{1}{r}$$

اولی؟ $1 - (-1) = 14$ ✓

$$Pn^2 - (m+1)n + 1 = 0 \rightarrow \alpha\beta = \frac{1}{r}$$
$$\alpha + \beta = \frac{m+1}{r}$$

$$\frac{1}{\alpha} + \frac{1}{\beta} = 2 \rightarrow \frac{1}{\alpha} + \frac{1}{\beta} + \frac{r}{\sqrt{\alpha\beta}} = 2$$

$$\frac{\alpha + \beta}{\alpha\beta} + \frac{r}{\sqrt{\alpha\beta}} = 2 \rightarrow m+1 + \frac{r}{\sqrt{\frac{1}{r}}} = 2$$
$$m = -1 \quad (2)$$

$$mn^2 - 2n + r = 0 \rightarrow \frac{c}{a} = \frac{r}{m} \rightarrow \frac{r}{-1} = -r \quad (3)$$

$$En^2 + kn - 9n - r = 0$$

$$E(-1)^r + k(-1)^r - 9(-1) - r = 0 \rightarrow r + k = 0 \quad k = -r \quad (4)$$

$$\left. \begin{aligned} \alpha + \beta &= 1 \\ \alpha\beta &= -r \end{aligned} \right\} n^2 - n - r = 0$$
$$n = \begin{cases} r \\ -1 \end{cases}$$

$k = ? -r$

$$n^2 + 2n + a = 0$$

$$\alpha + \beta = -2 \quad \alpha = -\beta - 2$$

$$\beta - \alpha = \frac{\sqrt{D}}{2a} = \frac{\sqrt{4 - 4a}}{2}$$

$$\alpha < \beta < 0$$

(5)

$$r\alpha + \beta^2 = 11r + 11$$

$$r(\alpha + \beta^2) + \alpha^2 = r(\alpha + \beta - r + \beta) + \alpha(-\beta - 2) = r(2\beta - r) + -a - 2\alpha$$

$$\rightarrow 2\sqrt{r} - 2a + \sqrt{r\beta + 11} - 2\alpha = 9 - a + r(\beta - \alpha) = 9 - a + r\sqrt{r^2 - 4a}$$
$$11r + 11 = 9 - a + r\sqrt{r^2 - 4a} \rightarrow a = 1$$

$a = ? 1$

$$n^2 - vn^2 - a = 0$$

$$n = t \Rightarrow t^2 - vt - a = 0$$

$$\rightarrow t = \begin{cases} \frac{v + \sqrt{v^2 + 4a}}{2} \quad \checkmark \\ \frac{v - \sqrt{v^2 + 4a}}{2} \quad \times \end{cases}$$

$$n = \frac{v + \sqrt{v^2 + 4a}}{2}$$

(6)

$(9 + \sqrt{49})$

$$rP^2 - rSP + rS^2 = ? \quad rP^2 = r\left(-\frac{\sqrt{v^2 + 4a}}{2}\right)^2 = \frac{9 + \sqrt{49}}{2} \quad \checkmark$$

$$\alpha = -\beta \rightarrow \alpha + \beta = 0$$

$$\alpha \times \beta = -\frac{v + \sqrt{v^2 + 4a}}{2}$$

$$2n^2 - an + b = 0 \quad \alpha\beta = \frac{b}{a} = \frac{b}{2} = -2 \rightarrow b = -4$$

$$\alpha + \beta$$

$$2an^2 + an - 4 = 0 \quad a=1 \rightarrow 2n^2 + n - 4 = 0 \rightarrow \begin{cases} \alpha' = \frac{1}{2} \\ \beta' = -2 \end{cases} \Rightarrow \alpha = 2 \quad \beta = -\frac{1}{2} \quad \alpha\beta = -1$$

$$\alpha', \beta'$$

$$\alpha + \beta - (\alpha' + \beta') = 1 \rightarrow \frac{a}{2} - (-\frac{1}{2}) = 1 \Rightarrow a = 1$$

$$\left[\frac{a}{\epsilon}\right] = ? \quad \left[\frac{1-1}{\epsilon}\right] = -2 \checkmark$$

$$2n^2 - an - b = 0 \quad \alpha + \beta = \frac{-a}{-a} = 1 \quad \beta = 1 - \alpha \quad \alpha = 1 - \beta$$

$$\alpha, \beta$$

$$2\alpha\beta + 2\alpha\alpha' - 2\alpha\beta = 1 \quad 2\alpha(\beta + \alpha') + 2\alpha(\beta - \alpha') - 2\alpha\beta - 2\alpha\beta = 1 \quad 2\alpha(1 + \frac{2\alpha}{a}) + 2\alpha(\beta - \alpha) - 2\alpha\beta + 2\alpha\alpha - 2\alpha = 1$$

$$|\alpha - \beta| = ? \quad \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{\frac{a^2}{4}}}{1} = \frac{2\sqrt{a}}{2} = \sqrt{a} \quad 2\alpha + \frac{2\alpha b}{a} = 2 \rightarrow \frac{b}{a} = \frac{1}{2} \rightarrow P = \frac{1}{2} \quad \alpha - \beta = \frac{\sqrt{\Delta}}{|a|}$$

$$\alpha\beta = a \quad \alpha + \beta = a + 1 \rightarrow \beta = 1 \quad \alpha = a \Rightarrow \alpha = a = 2$$

$$2n^2 - (a+1)n + a = 0$$

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$$P = \epsilon_n - \epsilon_{n+1} = a$$

$$\epsilon_n = 2a$$

$$a = 2n^2 / a = \epsilon_n - 1 \rightarrow 2n^2 = \epsilon_n - 1$$

$$2n^2 - (2a+1)n + a = 0 \quad 2n^2 - 10n + 6 = 0$$

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$$\alpha + \beta = 1 \rightarrow \alpha' + \beta' = 2 \rightarrow \alpha\beta = 2$$

$$2\epsilon - 2 = 2 \checkmark$$

$$2n^2 + n - (1+m^2) = 0$$

$$\alpha + \beta = 1$$

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

$$\max(\alpha\beta) \rightarrow m=0, \alpha\beta=-1$$

$$\min(\alpha + \beta - 2\alpha\beta) = 1 - 2(-1) = 3 \checkmark$$

$$A \left| \frac{x}{y} \right| B \left| \frac{x}{y} \right| \Rightarrow \frac{x-a}{2} = -1$$

$$S \left| \frac{x}{y} \right| \Rightarrow \alpha + \beta = -2$$

$$S \left| \frac{x}{y} \right| \Rightarrow \alpha + \beta = -2$$

$$(\alpha + \beta)^2 - 2\alpha\beta = 4 \rightarrow 4 - 2\alpha\beta = 4 \rightarrow \alpha\beta = -1$$

$$\alpha^2 + \beta^2 = 2 \quad \alpha + \beta = ? \quad \frac{1}{2}$$

$$2n^2 + 2n - \frac{1}{2} \rightarrow 2n^2 + 2n + \frac{1}{2}$$

$$n_s = \frac{r-a}{r} = -1 \quad \text{ext}(-1, 1)$$

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$$y = a(1+n)^r + 1 = an^r + 2an + a + 1 \rightarrow \begin{cases} p = \frac{a+1}{a} \\ s = -r \end{cases}$$

$$\alpha^r + \beta^r = s^r - rp = (-r)^r - r\left(\frac{a+1}{a}\right) \rightarrow \boxed{\alpha = -\frac{r}{a}}$$

$$\text{مقدار از قبیل} = a + 1 = \left(\frac{1}{r}\right)$$