

$$\alpha = 3\beta, p = \frac{f}{\beta}, S = \frac{a}{\beta} \Rightarrow C = 3\beta^2 = \frac{f}{\beta} \Rightarrow \beta = \pm \frac{\sqrt{f}}{3}$$

$$\beta = \frac{\sqrt{f}}{3} \Rightarrow S = f\beta = \frac{a}{\beta} \Rightarrow \lambda = a \text{ و } \beta = -\frac{\sqrt{f}}{3} \Rightarrow S = f\beta = \frac{a}{\beta} \Rightarrow \alpha = -\lambda$$

$$\lambda - (-\lambda) = 141$$

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$$\sqrt{\frac{1}{\alpha}} + \sqrt{\frac{1}{\beta}} = \Delta \Rightarrow \frac{1}{\alpha} + \frac{1}{\beta} + 2\sqrt{\frac{1}{\alpha\beta}} \Rightarrow \frac{\beta + \alpha}{\alpha\beta} + 2\sqrt{\frac{1}{\alpha\beta}} \Rightarrow \left(S = \frac{m+1f}{\beta^2}, p = \frac{1}{\beta^2} \right)$$

$$\Rightarrow \frac{m+1f}{\frac{1}{\alpha^2}} + 2\sqrt{\frac{1}{\frac{1}{\alpha^2} \cdot \frac{1}{\beta^2}}} \Rightarrow m + \frac{1f + 12}{\beta^2} = 2\Delta \Rightarrow m = -1$$

$$\text{حاصل} = \frac{C}{a} = \frac{p}{m} = (-2)$$

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خ/ب/ا: ها

$$p = \alpha\beta\chi = -\frac{1}{\epsilon} = \frac{1}{\epsilon} \Rightarrow \chi = -\frac{1}{\epsilon}$$

$$S = \alpha + \beta + \chi = -\frac{1}{\epsilon} + 1 = \frac{3}{\epsilon} = -\frac{k}{\epsilon} \Rightarrow \boxed{k = -3}$$

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$$S = -4, p = a \quad 2\alpha^2 + \alpha^2 + 2\beta^2 \Rightarrow 2(\alpha^2 + \beta^2) + \alpha^2 = 2(34 - 4a) + \alpha^2 = 12\sqrt{2} + 10$$

$$\Delta = 34 - 4a \Rightarrow \Delta = \frac{-4 \pm \sqrt{16 - 4a}}{2} \Rightarrow \alpha = -2 - \sqrt{4 - a}, \beta = -2 + \sqrt{4 - a}$$

$$\sqrt{2 - 4a} + 18 - 4 + 4\sqrt{4 - a} = 12\sqrt{2} + 10 \Rightarrow 90 - 4a = 10 \Rightarrow a = 1$$

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$$S = 7, p = -5 \Rightarrow \text{دورس مختلف علامت} \Rightarrow \frac{2(20) - 3(7)(-5) + 14}{5} = 199$$

در صورتی که فقط دورس دارد

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$\alpha = \alpha' + 0.1\Delta \quad \beta = \beta' + 0.1\Delta \quad \alpha + \beta = \frac{a}{\gamma} \quad \alpha' + \beta' = -\frac{1}{\gamma} \quad \alpha' + \beta' = \alpha - 0.1\Delta + \beta - 0.1\Delta = -\frac{1}{\gamma}$ $\Rightarrow \alpha + \beta = \frac{1}{\gamma} \Rightarrow a = 1 \Rightarrow \underbrace{\gamma x^2 + x - 4 = 0}_{\Delta = 17} \Rightarrow x = \frac{-1 \pm \sqrt{17}}{\gamma} \Rightarrow -\gamma \alpha' \Rightarrow \alpha = -1.0$ $\alpha \beta = \frac{b}{\gamma} = -3 \Rightarrow b = -4 \quad \left[\frac{-4 \times 1}{\gamma} \right] = (-2)$	6
$\gamma_0 \beta^r + \gamma_0 \alpha^r + \gamma_0 \beta^r - \gamma_0 \beta = 1 \Rightarrow \gamma_0 (\alpha^r + \beta^r) + \gamma_0 (\beta^r - \beta) = 1$ $= \gamma_0 (S^r - \gamma p) + \gamma_0 (\beta^r - \beta) = 1 \quad \text{و } S = 1, b = -\frac{b}{\gamma} \quad (\text{و } \alpha \beta - b = 0 \text{ و } \alpha \beta = 3)$ $\alpha \beta^r - \alpha \beta - b = 0 \Rightarrow \alpha (\beta^r - \beta) = b \Rightarrow \beta^r - \beta = \frac{b}{\alpha}$ $\gamma_0 (S^r + \gamma p) + \gamma_0 (\beta^r - \beta) = 1 \Rightarrow \gamma_0 (1 + \frac{\gamma b}{\alpha}) + \gamma_0 (\frac{b}{\alpha}) = 1 \Rightarrow \gamma_0 + \frac{\gamma_0 b}{\alpha} + \frac{\gamma_0 b}{\alpha} = 1 \Rightarrow \frac{4\gamma_0 b}{\alpha} = 1 \Rightarrow \frac{b}{\alpha} = -\frac{1}{\gamma}$ $\frac{\sqrt{\Delta}}{ \alpha } = \frac{\sqrt{(-1)^2 - 4(-b)}}{ \alpha } = \frac{\sqrt{1 + 4b}}{ \alpha } = \frac{ \alpha \sqrt{1 + 4b}}{ \alpha } = \sqrt{1 + 4(-\frac{1}{\gamma})} = \sqrt{\frac{\gamma - 4}{\gamma}} = \frac{\sqrt{\gamma - 4}}{\sqrt{\gamma}}$	7
$\alpha = \beta + \gamma \Rightarrow \alpha + \beta = a + 1, \alpha \beta = a \Rightarrow \alpha + \beta - 1 = \alpha \beta \Rightarrow \gamma \beta + \gamma - 1 = \beta^r + \gamma \beta$ $\Rightarrow \beta^r = 1 \Rightarrow \beta = \frac{1}{\gamma} \quad \text{و } \alpha = \gamma \Rightarrow \alpha \beta = \gamma \Rightarrow a = \gamma$ $S = \gamma a + 1, p = b, \alpha' = \beta' + \gamma \Rightarrow \gamma \beta' + \gamma = \gamma a + 1 \Rightarrow \beta' = \frac{\gamma a - 1}{\gamma} \Rightarrow \alpha' = \frac{\gamma a + \gamma}{\gamma}$ $\beta' = \gamma, \alpha' = \gamma \Rightarrow \alpha' \beta' = \gamma^2$ $= \alpha \beta' - \alpha \beta = \gamma \gamma - \gamma = \gamma$	8
$\alpha^r + \beta^r = (\alpha + \beta)^r - \gamma \alpha \beta = (-1)^r - \gamma (-m^r - 1) = 1 + \gamma m^r + \gamma = 0 \Rightarrow \gamma m^r + \gamma = 0 \Rightarrow m = 0$ مستقيم	9
$\alpha(\alpha + 1)^r + 1 = 4 \Rightarrow 4 = \alpha^r + \gamma \alpha^r + \alpha + 1 \Rightarrow S^r - \gamma p = 4 - \gamma (\frac{\alpha + 1}{\alpha}) = 0 \Rightarrow \gamma \alpha + \gamma = -\alpha$ $\Rightarrow \alpha = -\frac{\gamma}{\gamma} \quad \text{و } \frac{\alpha + 1}{\alpha} = -\frac{\gamma}{\gamma} + 1 = \frac{1}{\gamma}$	10