

13) a, b, c متساويين

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$$\frac{-b}{2a} = -1 \Rightarrow b = 2a$$

(1)

$$\begin{cases} -1 \times \begin{cases} a = a - b + c \\ 1 = a + b + c \\ -1 = a + b + c \end{cases} \end{cases}$$

$$b = 2a \Rightarrow -1 = \frac{\lambda a + \lambda a}{14a} = \frac{2\lambda}{14} \Rightarrow \lambda = -7$$

$$y = -\frac{1}{x} \Rightarrow y = -\frac{1}{x} \Rightarrow y = -\frac{1}{x}$$

$$a = -\frac{1}{x} + 1 + c \Rightarrow c = \frac{1}{x}$$

(2)

$$x^2 + mx + m + 4 = 0 \Rightarrow \Delta = m^2 - 4(m+4) = m^2 - 4m - 16$$

$$\Delta = 4^2 - 4(1)(-16) = 4^2 + 64 = 68 \Rightarrow \Delta = 68$$

$$\textcircled{1} \Rightarrow \frac{b}{a} = -\frac{m}{x} \Rightarrow m < 0, \textcircled{2} \Rightarrow \frac{c}{a} = \frac{m+4}{x} \Rightarrow m > -4 \Rightarrow m \in (-4, 0)$$

(3)

$$s = \frac{1}{p} \Rightarrow s = \frac{-x+m+1}{x} \Rightarrow p = \frac{x-m}{x} \Rightarrow \frac{x-m}{x} = \frac{1}{s} \Rightarrow x-m = \frac{x}{s} \Rightarrow x(1-\frac{1}{s}) = \frac{x}{s} \Rightarrow x = \frac{1}{s-1}$$

$$\Delta = 4^2 - 4(1)(-16) = 68 \Rightarrow \Delta = 68$$

$$m = \frac{x}{s}$$

(4)

$$n_1 = n_1' - \epsilon \Rightarrow s = n_1 + n_2 = 1 \Rightarrow p = n_1 n_2 = -\epsilon$$

$$n_2 = n_2' - \epsilon \Rightarrow s' = n_2' + \frac{1}{n_1} + n_1' + \frac{1}{n_2} \Rightarrow n_2' + n_1' + \frac{n_2' + n_1'}{n_1 n_2} = s'$$

$$s = \frac{1}{p} + \frac{1}{n_1} + \frac{1}{n_2} = 1 + \frac{1}{\epsilon} - \frac{1}{\epsilon} = \frac{1}{\epsilon}$$

$$p' = (n_2' + \frac{1}{n_1}) (n_1' + \frac{1}{n_2}) = (n_2 n_1)' + n_2' + n_1' + \frac{1}{n_2 n_1} = p' + s' - \frac{1}{p} + \frac{1}{p}$$

$$-4\epsilon + 1 + \frac{1}{\epsilon} = -\frac{4\epsilon}{\epsilon}$$

$$\Rightarrow \frac{1}{x} - \frac{4}{\epsilon} x - \frac{4}{\epsilon} = 0$$

$$\left(\sqrt[3]{x^2} + \frac{1}{\sqrt[3]{x^2}} + 1\right) \left(\sqrt[3]{x^2} - 1\right) = \sqrt[3]{x^2} \Rightarrow \left(t^2 + \frac{1}{t^2} + 1\right) (t^2 - 1) = t^2 \Rightarrow \boxed{\sqrt[3]{x^2} = t} \quad (1)$$

$$t^4 + 1 + t^2 - t^2 - \frac{1}{t^2} - 1 - t^2 = 0 \Rightarrow t^4 - \frac{1}{t^2} - t^2 = 0 \Rightarrow \frac{t^6 - 1 - t^4}{t^2} = 0 \Rightarrow t^6 - t^4 - 1 = 0 \Rightarrow t^2 = k$$

$$k^3 - k - 1 = 0 \Rightarrow \Delta = 4 - 4(1)(-1) = 8 \Rightarrow k = 1 + \sqrt[3]{2} \quad \text{و } k = 1 - \sqrt[3]{2} \quad \text{و } k = 1 + \sqrt[3]{2} \cdot \omega \quad \text{و } k = 1 + \sqrt[3]{2} \cdot \omega^2$$

$$n_1 = 1 + \sqrt[3]{2}, \quad n_2 = 1 - \sqrt[3]{2} \Rightarrow n_1 + n_2 = (1 + \sqrt[3]{2}) + (1 - \sqrt[3]{2}) = \boxed{2} \quad \text{جواب}$$

$$\omega_2 = n_1, \quad n_2, \quad n_3 = 3n_1$$

$$p = n_1 \times 3n_1 = 3n_1^2 \Rightarrow \frac{a}{p} = 3n_1^2 \Rightarrow n_1^2 = \frac{a}{3} \Rightarrow n_1 = \pm \sqrt{\frac{a}{3}}$$

$$s = n_1 + 3n_1 = 4n_1 \Rightarrow \frac{a}{p} = 4n_1 \Rightarrow a = 4n_1 \Rightarrow \begin{cases} a = 12 \times \frac{1}{3} = 4 \\ a = 12 \times (-\frac{1}{3}) = -4 \end{cases}$$

$$\text{اضافه} \Rightarrow 4 - (-4) = 8$$

$$a > 0 \quad (1), \quad s = -\frac{b}{a} \Rightarrow \frac{-3 - 2a}{a} > 0$$

مقدارهای a وجود ندارند پس از اینصورت نماند.

	$-\frac{3}{a}$	0
عدد	+	-
علامه	-	+
$p(a)$	-	+

$$a = \left[-\frac{3}{a}, 0\right) \quad (2)$$

$$1 \times 2 \Rightarrow \emptyset$$

$$\text{مقدارهای } y_2 = 1 \Rightarrow y_2 - x^2 - 2x + b = 0 \Rightarrow \boxed{1 = b}$$

$$n_{\text{ext}} = \frac{-b}{2a} = \frac{1}{2(-1)} = \boxed{-\frac{1}{2}}$$

$$-\frac{a}{1} = -1 \Rightarrow -a = -1 \Rightarrow \boxed{a = 1}$$

$$(1) \Rightarrow 1 = A^2 + 2A - 1 \Rightarrow A^2 + 2A - 2 = 0$$

$$\Rightarrow (A-1)(A+3) = 0 \Rightarrow A = 1 \text{ و } A = -3 \sim \text{if } A = 1 \Rightarrow (1, 1) \xrightarrow{\text{مقدارهای } b = 4, \text{ if } A = -3}$$

$$(-3, 1) \xrightarrow{\text{مقدارهای } b = 4} \Rightarrow \boxed{b = 4} \Rightarrow a \times b = 1 \times 4 = \boxed{4} \quad \text{جواب}$$

$$s_1 = \frac{a}{1}, \quad s_2 = \frac{a'}{2a} = -\frac{1}{2}, \quad s_1 = s_2 + 1 \Rightarrow \frac{1}{2} = -\frac{1}{2} + 1 \Rightarrow \boxed{a = 1}$$

$$P_1 = (a + 0.1a)(\beta + 0.1\beta) \quad P_1 = \frac{b}{1} \quad P_2 = a\beta \quad \boxed{\beta = -3}$$

$$P_1 = 0.1 \times a + \frac{a\beta}{-3} + \frac{(a+\beta)}{-1} \times 0.1a \Rightarrow P_1 = -3, \quad b = -4 \Rightarrow \left[\frac{ab}{1}\right] = \left[\frac{-4}{1}\right] = \boxed{-4} \quad \text{جواب}$$

$$x^2 + 4m + m = x^2 + 2m - 3m$$

$$a^2 + 4a + m = a^2 + 2a - 3m \Rightarrow 2a + 5m = 0 \Rightarrow \boxed{m = -\frac{2}{5}a}$$

$$a^2 + 4a + m = 0 \xrightarrow{m = -\frac{2}{5}a} a^2 + 2a = 0 \Rightarrow a(a+2) = 0 \Rightarrow \begin{cases} a = 0 \\ a = -2 \end{cases}$$

$$\rightarrow m = 0 \Rightarrow x^2 + 4x + 0 = 0 \Rightarrow (x+1)(x+4) = 0 \Rightarrow x = -1 \text{ و } x = -4$$

$$\Rightarrow x^2 + 2x - 1 = 0 \Rightarrow (x-1)(x+1) = 0 \Rightarrow x = 1 \text{ و } x = -1$$

$$\text{اضافه} \Rightarrow 1 - (-1) = \boxed{2}$$