

کرم و فیتن

$$\{50, 51, \dots, 48\} \quad \{48, 49, \dots, 11\} \rightarrow \text{میانگین: } \frac{48+11}{2} = 29.5$$

$$\{1, 2, 3\}, \{4, 5, \dots, 12\}, \{13, 14, \dots, 24\}, \{25, 26, \dots, 36\}, \{37, 38, \dots, 48\} \rightarrow \text{میانگین: } \frac{1+48}{2} = 24.5$$

$$a_n = 1, 2, 1+2, 2+1, 1+2+3, 3+2+1, \dots \rightarrow 2A + 2A = 4A$$

$$a_1 + a_2 + a_3 + \dots + a_{10} = (-2)$$

$$a_n = an^2 + bn + c \rightarrow a = \frac{1}{6} \times (-18) = -3$$

$$a_0 = -a + b + c = 18 \rightarrow b + c = 19$$

$$a_1 = -\frac{18}{1} + b + c = 14 \rightarrow b + c = 32$$

$$b = 13, c = 1 \rightarrow a_n = -3n^2 + 13n + 1$$

$$a_{10} = -\frac{1}{6} \times 18 + 13 + 1 = 18$$

$$a_1 = -\frac{1}{6} + 13 + 1 = 14$$

$$a + (n-1)d \rightarrow cn + b + 1 \cdot c + b = 2c + b$$

$$a + d = 13 + b \rightarrow a + d = 13 + b$$

$$a + 10d = 13 + b + 9d \rightarrow a + d = 13 + b$$

$$d = 1 \rightarrow a = 12$$

$$4(a+d)^2 = 4(a+d)(a+d) = 4(a^2 + ad + ad + d^2) = 4(a^2 + 2ad + d^2)$$

$$4a^2 + 8ad + 4d^2 = 4a^2 + 8ad + 4d^2$$

$$\frac{4a^2}{4} = \frac{4a^2}{4} \rightarrow a^2 = a^2$$

$$\frac{8ad}{4} = \frac{8ad}{4} \rightarrow 2ad = 2ad$$

$$\frac{4d^2}{4} = \frac{4d^2}{4} \rightarrow d^2 = d^2$$

$$rb = a + c \rightarrow c = rb - a$$

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$$\frac{1}{r} a^r = \frac{1}{r} b^r c \rightarrow a^r = b^r c \quad a^r = b^r (rb - a) \rightarrow a^r + ab - rb^r = 0$$

$$(a + rb)(a - b) = 0$$

$$a = -rb \quad a = b \quad \text{غیر ممکن}$$

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$$q = \frac{\frac{1}{r} a}{b} = \frac{-b}{b} = -1 \rightarrow (-1) \times r = \textcircled{-r}$$

$$ca = rb + c$$

-1

$$b^r = ac \rightarrow b^r = a(ca - rb) \rightarrow b^r + rab - ca^r = 0$$

$$(b + ca)(b - a) = 0$$

$$b = -ca \quad b = a \quad \text{غیر ممکن}$$

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$$q = \frac{b}{a} = -c \rightarrow \frac{aq^a}{aq^a} = q^r = \textcircled{-c}$$

$$\frac{aq^a}{a^r q^r} + \frac{aq}{a^r} = r \rightarrow \frac{q^r}{a^r} + \frac{q}{a} = r \rightarrow \left(\frac{q}{a}\right)^r + \frac{q}{a} - r = 0$$

-4

$$\left(\frac{q}{a} + r\right)\left(\frac{q}{a} - 1\right) = 0$$

$$\frac{q}{a} = -r \quad \frac{q}{a} = 1$$

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$$\frac{a^r}{aq} = \frac{a}{q} \quad \textcircled{1} \quad \textcircled{-\frac{1}{r}}$$

$$aq^r = \sqrt{aq^r} \times \sqrt{aq^r} \rightarrow a^r q^r = aq^r \rightarrow aq = 1$$

-10

$$\frac{aq^r}{aq} = r \vee \frac{q^r}{q} = r \rightarrow q = r, a = \frac{1}{r} \rightarrow \frac{1}{r} - \frac{1}{r} = \textcircled{\frac{1}{q}}$$

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