

بارها ساهی دوم بر A تکلیف نماز ۱۵

$$q\left(\frac{q^r-1}{q-1}\right) = 11 \Rightarrow a(q^r+q+1) \cdot 21 \Rightarrow a(q^r+q+1) \Rightarrow \frac{q^r+q+1}{q} \Rightarrow \frac{q^r}{q} + \frac{q}{q} + \frac{1}{q}$$

$$\frac{q}{q} + a + aq = a^2 - 4q \Rightarrow a = 4$$

$$4q^r + 4q + 4 \cdot 21q \Rightarrow 4q^r - 17q + 84 = 0$$

$$q^r - 17q + 21 = 0 \Rightarrow (q-1)(q-14) = 0$$

✓ $q = \frac{1}{4}$ ✗ $q = \frac{14}{1}$

q باید غیر صحیح باشد!

$$x^2 + x + 2n, x^2 - 2$$

$$x^2 = (x^2 + x + 2n)(x^2 - 2) = x^4 + 2x^3 - 2x^2 - 2x - 4n \Rightarrow x^4 - 2x^3 - 4n = 0$$

$$(x^2 - 2)(x^2 + 2) = 0 \Rightarrow x^2 = 2 \Rightarrow x = \pm \sqrt{2}$$

$$S_n = 1 \left(\frac{1 - (\frac{1}{4})^n}{1 - \frac{1}{4}} \right) = \frac{1}{\frac{3}{4}} \left(1 - \frac{1}{4^n} \right) = \frac{4}{3} \left(1 - \frac{1}{4^n} \right)$$

$$a_n \rightarrow \begin{cases} 1, 2, 3, \dots \\ 1, 2, 3, \dots \end{cases} \Rightarrow a_n = 1, 2, 3, \dots \rightarrow q = \frac{1}{4}$$

$$S_n = 1 \left(\frac{1 - (\frac{1}{4})^n}{1 - \frac{1}{4}} \right) = \frac{4}{3} \left(1 - \frac{1}{4^n} \right)$$

$$1 + q + q^2 + q^3 + \dots = \frac{121}{11}$$

$$a_1 = 243$$

$$S_n = a + aq + aq^2 + aq^3 + aq^4 = 243 \times \frac{121}{11} = 243 \times 11 = 2673$$

$$d = \frac{q^r-1}{q} = 10/5 \rightarrow a_n = 1, 17, 5, 22, 37, 5, 44, 5, 51, 5, 58, 5, 65, 5, 72, 5, 79, 5, 86, 5, 93, 5, 100, 5, 107, 5, 114, 5, 121$$

$$q^4 = \frac{q^r}{1} \Rightarrow q = \pm 1 \Rightarrow b_n = \begin{cases} 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100 \end{cases}$$

$$A+B = \begin{cases} 22/5 + 1 = 27/5 \\ 22/5 - 1 = 17/5 \end{cases}$$

$$-24, -\frac{70}{4}, \dots \Rightarrow a_n = -\frac{70}{4}, -\frac{70}{4}, \dots \Rightarrow a_n = \frac{n-97}{4} \Rightarrow a_{101} = \frac{101-97}{4} = 1$$

$$171, a_2, \dots \Rightarrow \frac{171}{q} = \frac{1}{q} \Rightarrow q = \frac{1}{171}$$

$$a + rd, a + 4d, a + 9d \rightarrow a^2 + 10ad + 14d^2, a^2 + 14ad + 25d^2 \Rightarrow rd^2 + 4ad = 0$$

$$rd(4d + a) = 0$$

$$d = 0 \text{ or } -\frac{a}{4}$$

$$a + d, a + rd, a + 4d \rightarrow a^2 + 10ad + 14d^2, a^2 + 14ad + 25d^2 \Rightarrow rd^2 + 4ad = 0$$

$$\left. \begin{aligned} a + d = ra = \frac{1}{r} \Rightarrow a = \frac{1}{r} \\ a + rd = \frac{1}{r} \Rightarrow \frac{1}{r} + rd = \frac{1}{r} \Rightarrow rd = 0 \end{aligned} \right\} \Rightarrow q = \frac{1}{r} = 2 \Rightarrow a_1 = aq^0 = \frac{1}{2} \times 2^0 = 1$$

$$ra, q, raq, a, q^2 \rightarrow raq + aq^2 = r \times raq \Rightarrow aq(r + q^2) = r \times aq \Rightarrow r + q^2 = r \Rightarrow q^2 = 0$$

$$q^2 - rq + r = 0 \Rightarrow (q-r)(q-1) = 0 \Rightarrow q = \frac{r}{1} = 1$$

$$r, \frac{r}{q}, \dots \Rightarrow a_n = \frac{r-n}{r} \Rightarrow a_1 = \frac{r-1}{r} / a_2 = \frac{r-2}{r} / a_3 = \frac{r-3}{r}$$

$$b_n = \frac{5}{r} + 2, \frac{1}{r} + 2, \frac{-1}{r} + 2 \Rightarrow x^2 + \frac{2}{r} - \frac{5}{r} = x^2 + \frac{2}{r} + \frac{1}{r} \Rightarrow rx - 2 = 12x + 1 \Rightarrow rx = 13 \Rightarrow x = \frac{13}{r}$$

$$b_n = -4, -5, -\frac{r-5}{r} \Rightarrow q = \frac{-5}{-4} = \frac{5}{4}$$

$$a_1 + \underbrace{a_1 q^r}_{+q^r} + \underbrace{a_1 q^q}_{+q^r} = V^r \rightarrow a_1 (1 + q^r + q^q) = V^r$$

(1, 5) (10)

$$q^r = a_1, a_1 q^r, \dots, a_1 q^q$$

(1) (2) (3)

$$\left. \begin{aligned} d &= a_1 q^r - a_1 \\ d &= \frac{a_1 q^q - a_1 q^r}{1} \end{aligned} \right\} \frac{a_1 (q^r - 1)}{1} = \frac{a_1 q^r (q^q - 1)}{1} \Rightarrow 1 = \frac{q^r}{1}$$

$$a_1 (1 + q^r + q^q) = V^r \Rightarrow a_1 (V^r) = V^r \rightarrow a_1 = 1$$

$$d = a_1 q^r - a_1 \Rightarrow d = 1 - 1 = 0 \checkmark$$

$q^r = 1$
 $q = 1$

حالت دوم
(دنيا نه ثابت) $\rightarrow q = 1$ $d = 0$