

۱۹، ۲۸

Subject:

Date:

$$a_1 \left(\frac{q^r - 1}{q - 1} \right) = 21 \Rightarrow a(q^r + q + 1) = 21 \Rightarrow aq^r + aq + a = 21 \Rightarrow 4q + 4 + \frac{4}{q} = 21 \quad (1) \quad \checkmark$$

$$a_1 \times a_2 q \times a_3 q^2 = 4^4 \Rightarrow a_1 q^3 = 4^4 \Rightarrow a_1 q = 4 \Rightarrow 4q^2 + 4q + \frac{4}{q} = 21q \Rightarrow 4q^2 - 17q + 4 = 0$$

$$q^2 - 17q + 14 = 0$$

$$(q-1)(q-14) \Rightarrow q < \frac{1}{4} \quad \checkmark$$

$$\frac{14}{q} = 4 \quad \checkmark$$

q باید غیر صحیح باشد!

$$n^r + 4, 2n, n^r - 2 \Rightarrow (n^r + 4)(n^r - 2) = (2n)^r \Rightarrow n^r + 2n^r - 1 = 4n^r$$

$$\Rightarrow n^r - 2n^r - 1 = 0 \Rightarrow (n^r - 4)(n^r + 2) = 0 \Rightarrow n^r < -2 \quad \checkmark$$

غیر ممکن

$$4 \Rightarrow n = \pm 2$$

$$a_n < \begin{cases} 1, 4, 2 \\ 1, -4, 2 \end{cases} \Rightarrow a_n = 1, 4, 2 \Rightarrow q = \frac{1}{2}$$

$$S_V = 1 \left(\frac{1 - (\frac{1}{2})^V}{1 - \frac{1}{2}} \right) = 1 \times \frac{127}{1} = 127 \quad \checkmark$$

$$1 + q + q^2 + q^3 + q^4 = \frac{121}{11} \quad a_1 = 243 \quad \checkmark$$

$$S_0 = a_1 + a_1 q + a_1 q^2 + a_1 q^3 + a_1 q^4 = a_1 (1 + q + q^2 + q^3 + q^4) = 243 \times \frac{121}{11} = 343 \quad \checkmark$$

$$d = \frac{4^4 - 1}{4} = 10, \Delta \Rightarrow a_n = 1, 11, \Delta, 22, 33, \Delta, 44, 55, \Delta, 66 \quad \checkmark$$

$$q^4 = \frac{4^4}{1} \Rightarrow q = \pm 2 \Rightarrow b_n = \begin{cases} 1, 2, 4, 8, 16, 32, 64 \\ 1, -2, 4, -8, 16, -32, 64 \end{cases}$$

$$A + B < \begin{cases} 32, 0 + 1 = 33, 0 \\ 32, 0 - 1 = 31, 0 \end{cases} \quad \checkmark$$

$$-24, -\frac{90}{4}, \dots \Rightarrow a_n = -\frac{94}{4}, -\frac{90}{4}, \dots \Rightarrow a_n = \frac{n-94}{4} \Rightarrow a_{101} = \frac{4}{4} = 1 \quad \checkmark$$

$$121, a_2, a_3, a_4, a_5, a_6, a_7, 1, \dots \Rightarrow q^V = \frac{1}{121} \Rightarrow q = \frac{1}{11} \quad \checkmark$$

$$(a+2d), (a+4d), (a+6d) \rightarrow a^r + 10ad + 14d^r = a^r + 12ad + 14d^r \Rightarrow 2 \cdot d^r + 2ad = 0 \quad \checkmark$$

$$\Rightarrow 2d(10d + a) = 0 \Rightarrow d < \frac{-a}{10} \quad \checkmark$$

