

$$\frac{4}{9} \cdot 2 \cdot 49 = 21$$

$$2 + 49 + 49^2 = 219$$

$$49^2 - 199 + 8 = 0 \rightarrow 49^2 - 199 + 19 = 0$$

$$(49-1)(49-4) \rightarrow \frac{1}{2} \text{ و } 4$$

$$q = ? = \frac{1}{\varepsilon}$$

$$a_1 \cdot a_2 \cdot a_3 = 48$$

$$a^2 q^2 = 48$$

$$a q = 8 \rightarrow a = \frac{8}{q}$$

$$a_1 + a_2 + a_3 = 21$$

سوال ۱

$$(x^2)^2 = (x^2-1)(x^2+1)$$

$$\varepsilon x^2 = x^2 + \varepsilon x^2 - 2x^2 - 1$$

$$\varepsilon x^2 - 2x^2 = x^2 - 1 \rightarrow x^2 - 2x^2 - 1 = 0 \rightarrow (x^2 - \varepsilon)(x^2 + 1)$$

$$x^2 = \varepsilon \quad x^2 = -1$$

$$x = \pm \varepsilon$$

$$(q > 0) \quad S_n = ? \quad , \quad x^2 - 2, 2x^2, x^2 + \varepsilon$$

$$(199) =$$

$$x = 2 \rightarrow 2, \varepsilon, 1 \quad [q = 2]$$

$$x = -2 \rightarrow 2, -\varepsilon, 1 \quad q = -2$$

$$S_n = a \left(\frac{q^n - 1}{q - 1} \right) \rightarrow 2 \left(\frac{2^n - 1}{2 - 1} \right) = 204$$

سوال ۲

$$a_1 \cdot a_2 \cdot a_3 \cdot a_4 \cdot a_5 = 1$$

$$x \cdot x^2 (1 + q + q^2 + q^3 + q^4) = 44x$$

$$\frac{121}{21}$$

$$S_n = ? \quad , \quad a_1 = 25, \quad 1 + q + q^2 + q^3 + q^4 = \frac{121}{21}$$

سوال ۳

$$48, 24, 12, 6, 3, 1.5, 0.75, 0.375, 0.1875, 0.09375, 0.046875, 0.0234375, 0.01171875, 0.005859375, 0.0029296875, 0.00146484375, 0.000732421875, 0.0003662109375, 0.00018310546875, 9.1552734375 \times 10^{-5}$$

$$48, 24, 12, 6, 3, 1.5, 0.75, 0.375, 0.1875, 0.09375, 0.046875, 0.0234375, 0.01171875, 0.005859375, 0.0029296875, 0.00146484375, 0.000732421875, 0.0003662109375, 0.00018310546875, 9.1552734375 \times 10^{-5}$$

$$d = \frac{b-a}{n+1} \rightarrow \frac{-48}{11} = -4.36$$

$$r = \frac{b}{a} = r^4 = \frac{1}{48} \rightarrow r = \frac{1}{r}$$

$$A+B = ?$$

$$22.5 + 18 = 40.5$$

سوال ۴

$$q = ? \quad a_1 \cdot 1 = b_n$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$6 \cdot \frac{1}{2} = 18$$

$$b_n = 128, a_1, \dots$$

$$a_n = 25, -\frac{95}{2}, \dots$$

$$d = \frac{-95 - 25}{2} = -\frac{120}{2} = -60$$

سوال ۵

$$(a+4d)^2 = (a+2d)(a+6d)$$

$$a^2 + 8ad + 16d^2 = a^2 + 8ad + 12d^2$$

$$4d^2 = 4d^2$$

$$-4d^2 = 0$$

$$(1) d = 0 \rightarrow a = 25, a_2 = 25, a_3 = 25$$

$$(2) d \neq 0 \rightarrow \frac{d}{a} = -\frac{1}{11}$$

$$d = 0, -\frac{1}{11}$$

$$a_2, a_3, a_4$$

$$a_2, a_3, a_4, a_5, a_6, a_7, a_8, a_9, a_{10}, a_{11}, a_{12}, a_{13}, a_{14}, a_{15}, a_{16}, a_{17}, a_{18}, a_{19}, a_{20}, a_{21}, a_{22}, a_{23}, a_{24}, a_{25}, a_{26}, a_{27}, a_{28}, a_{29}, a_{30}, a_{31}, a_{32}, a_{33}, a_{34}, a_{35}, a_{36}, a_{37}, a_{38}, a_{39}, a_{40}, a_{41}, a_{42}, a_{43}, a_{44}, a_{45}, a_{46}, a_{47}, a_{48}, a_{49}, a_{50}, a_{51}, a_{52}, a_{53}, a_{54}, a_{55}, a_{56}, a_{57}, a_{58}, a_{59}, a_{60}, a_{61}, a_{62}, a_{63}, a_{64}, a_{65}, a_{66}, a_{67}, a_{68}, a_{69}, a_{70}, a_{71}, a_{72}, a_{73}, a_{74}, a_{75}, a_{76}, a_{77}, a_{78}, a_{79}, a_{80}, a_{81}, a_{82}, a_{83}, a_{84}, a_{85}, a_{86}, a_{87}, a_{88}, a_{89}, a_{90}, a_{91}, a_{92}, a_{93}, a_{94}, a_{95}, a_{96}, a_{97}, a_{98}, a_{99}, a_{100}$$

$$-a_2, -a_3, -a_4$$

سوال ۶

$$(a+4d)^2 = (a+d)(a+9d)$$

$$a^2 + 8ad + 16d^2 = a^2 + 10ad + 9d^2$$

$$-2d^2 = 2ad$$

$$-d = a$$

$$(1) d = 0 \rightarrow a = 25, a_2 = 25, a_3 = 25$$

$$(2) d \neq 0 \rightarrow a = -d \rightarrow 2d, 4d, 6d, 8d, 10d, 12d, 14d, 16d, 18d, 20d, 22d, 24d, 26d, 28d, 30d, 32d, 34d, 36d, 38d, 40d, 42d, 44d, 46d, 48d, 50d, 52d, 54d, 56d, 58d, 60d, 62d, 64d, 66d, 68d, 70d, 72d, 74d, 76d, 78d, 80d, 82d, 84d, 86d, 88d, 90d, 92d, 94d, 96d, 98d, 100d$$

$$a_1 = ? \quad a_1 = \frac{1}{\varepsilon}$$

$$a_2 q = \frac{1}{\varepsilon} \rightarrow a_2 = \frac{1}{\varepsilon q}$$

$$a_2, a_3, a_4$$

$$a_2, a_3, a_4, a_5, a_6, a_7, a_8, a_9, a_{10}, a_{11}, a_{12}, a_{13}, a_{14}, a_{15}, a_{16}, a_{17}, a_{18}, a_{19}, a_{20}, a_{21}, a_{22}, a_{23}, a_{24}, a_{25}, a_{26}, a_{27}, a_{28}, a_{29}, a_{30}, a_{31}, a_{32}, a_{33}, a_{34}, a_{35}, a_{36}, a_{37}, a_{38}, a_{39}, a_{40}, a_{41}, a_{42}, a_{43}, a_{44}, a_{45}, a_{46}, a_{47}, a_{48}, a_{49}, a_{50}, a_{51}, a_{52}, a_{53}, a_{54}, a_{55}, a_{56}, a_{57}, a_{58}, a_{59}, a_{60}, a_{61}, a_{62}, a_{63}, a_{64}, a_{65}, a_{66}, a_{67}, a_{68}, a_{69}, a_{70}, a_{71}, a_{72}, a_{73}, a_{74}, a_{75}, a_{76}, a_{77}, a_{78}, a_{79}, a_{80}, a_{81}, a_{82}, a_{83}, a_{84}, a_{85}, a_{86}, a_{87}, a_{88}, a_{89}, a_{90}, a_{91}, a_{92}, a_{93}, a_{94}, a_{95}, a_{96}, a_{97}, a_{98}, a_{99}, a_{100}$$

سوال ۷

$$\div ar^2 \quad 4ar^2 = ar^2 + ar^2$$

$$\varepsilon r = r^2 + 1 \rightarrow r^2 + 1 - \varepsilon r = 0 \quad \Delta = 14 - \varepsilon = 12 \rightarrow$$

$$\rightarrow x = \frac{\varepsilon \pm \sqrt{\varepsilon^2 - 4}}{2} = \frac{\varepsilon \pm \sqrt{12}}{2} = \boxed{\frac{\varepsilon \pm 2\sqrt{3}}{2}}$$

سوال ۸: $a_1, a_2, a_3, a_4, a_5, a_6, a_7, a_8, a_9, a_{10}$ حسی؟
 و $a_1, a_2, a_3, a_4, a_5, a_6, a_7, a_8, a_9, a_{10}$ حسی؟

۹: $q = ?$ حسی

افزون شدت به $a_1, a_2, a_3, a_4, a_5, a_6, a_7, a_8, a_9, a_{10}$ حسی
 $\frac{1}{\varepsilon}, \frac{1}{\varepsilon}, \frac{1}{\varepsilon}, \frac{1}{\varepsilon}, \frac{1}{\varepsilon}, \frac{1}{\varepsilon}, \frac{1}{\varepsilon}, \frac{1}{\varepsilon}, \frac{1}{\varepsilon}, \frac{1}{\varepsilon}$
 $a_n = \frac{1}{\varepsilon} - \frac{1}{\varepsilon} n$

$$\frac{1}{\varepsilon} + a, \frac{1}{\varepsilon} + a, 1 + a$$

$$\left(\frac{1}{\varepsilon} + a\right)^2 = \left(\frac{1}{\varepsilon} + a\right)(1 + a) \rightarrow \frac{1}{\varepsilon^2} + \frac{2a}{\varepsilon} + a^2 = \frac{1}{\varepsilon} + \frac{1}{\varepsilon}a + a + a^2$$

$$\frac{1}{\varepsilon^2} - \frac{1}{\varepsilon} = \frac{1}{\varepsilon}a - \frac{2a}{\varepsilon}$$

$$\frac{1}{\varepsilon^2} - \frac{1}{\varepsilon} = -\frac{1}{\varepsilon}a \Rightarrow -\frac{1}{\varepsilon}a = -\frac{1}{\varepsilon}a \Rightarrow a = \boxed{1.25}$$

$$\begin{array}{r} -\varepsilon, -\varepsilon, -\varepsilon, -\varepsilon, -\varepsilon, -\varepsilon, -\varepsilon, -\varepsilon, -\varepsilon, -\varepsilon \\ \hline q = \frac{\Delta}{\varepsilon} = \frac{4.25}{1.25} = 3.4 \end{array} \Rightarrow \boxed{q = 1.25}$$

۱۰: $d = ?$ حسی

سوال ۱۰: $a_1 + a_2 + a_3 + a_4 + a_5 + a_6 + a_7 + a_8 + a_9 + a_{10} = 73$ حسی
 a and a, q, d
 $a + aq^3 + aq^5 = 73$
 $a + aq^3 + aq^5 = 73$

$$a + d = aq^3$$

$$a + qd = aq^5$$

$$-9a - 9d = -9aq^3$$

$$a + qd = aq^5$$

$$-8a = -9aq^3 + aq^5$$

$$-8a = a(-9q^3 + q^5)$$

$$9q^3 + 8 - 9q^5 = 0$$

حسی داریش

$$q = 1 \rightarrow 1 + 8 - 9 = 0 \checkmark \rightarrow \boxed{d = 0}$$

حسی داریش