(۸) نیشنی

۱۳٫۲۵

Subject: Year: Month: Day: page: ( )

1

$\frac{a}{q} \times a \times aq = 64 \Rightarrow a^3 = 64$ $\boxed{a=4}$ ✓ ۰٫۵

۰٫۷۵

$\frac{a}{q} + a + aq = 21 \Rightarrow \frac{a}{q} + \frac{aq}{q} + \frac{aq^2}{q} = 21$

$\frac{4}{q} + 4 + 4q = 21$ $\frac{a}{q}(q+q^2) = 21$

$\frac{4}{q}(q+q^2) = 21$

$4 + 4q + 4q^2 = 21$ $4 \times \frac{1}{q}(q+q^2) = 21$

$4q^2 + 4q - 17 = 0$ — $q = \frac{1}{4}$ ✗ $1 + q = \frac{21}{4}$ $q = \frac{21}{4} - \frac{4}{4}$

$q = 4 \Rightarrow$ ✓ ~~$q = \frac{17}{4}$~~

2

$x^2 - 2 , 2x , x^2 + 4$

$(2x)^2 = (x^2-2)(x^2+4)$ ۹ جواب صحیح

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$4x^2 = x^4 + 4x^2 - 2x^2 - 8$

$4x^2 = x^4 + 2x^2 - 8$ $\Rightarrow x^4 - 2x^2 - 8 = 0$ $\Delta = b^2 - 4ac$

$4 - 4 \times 1 \times -8 = 36$

$x^2 = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$ $= \frac{2 \pm \sqrt{36}}{4}$ $\frac{\Delta}{2} = 4$ ← $8, -4, 2$ ۴

نفی قبول ← $8, 4, 2$ ✓ $x = 2$ یا $\frac{1}{2}$

3

$1, q, q^2, q^3, q^4 = \frac{121}{81}$ $\boxed{aq^{n-1}}$

$\boxed{a = 243}$ ۲

$a + aq + aq^2 + aq^3 + aq^4$

$a(1 + q + q^2 + q^3 + q^4) = \frac{121}{81} \times 243 = 363$

$\frac{121}{81}$

4

1 ___ A ___ ___ 64 حسابی $\Rightarrow a + (n-1)d = 1 + 3d = A$

1 ___ B ___ ___ 64 هندسی $aq^{n-1} = 1q^3 = B$ $q = 2$

$d = \frac{64-1}{n+1=4} = 15{,}75$ $1 + 3d = A = 32{,}5$ ۱٫۲۵

~~$32{,}5 + 2 = 34{,}5$~~

$q^3 = \frac{64}{1} = q^3 \Rightarrow 2 \Rightarrow$

$A + B = 32{,}5 + 8 = 40{,}5$

$q = -2$ $A + B = 24{,}5$

Arman $B = -8$

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$-24 \,,\, \frac{-95}{4} \,,\, \dots$ ($+\frac{1}{4}$)

$a_{101} = -24 + (100)d = 1-5$

$a_8 = 128\, q^7$ → $2^7 q^7 = 1$, $(2q)^7 = 1$, $2q = 1$, $q = \frac{1}{2}$

(۵) — ۶

$a_3 \quad a_7 \quad a_9$

$a+2d \quad a+6d \quad a+8d$

$(a+6d)^2 = (a+2d)(a+8d) \Rightarrow a^2 + 36d^2 + 12ad = a^2 + 8ad + 2ad + 16d^2$

$36d^2 + 12ad = 16d^2$

$20d^2 + 2ad = 0 \quad 20d^2 = -2ad$

$20d = -2a$

$d = \frac{-2}{20}a$

درسته چون تقاضا طبق گفتند ← $d = 0$ ، ۱٫۲۵ — ۶

$a_2 \quad a_4 \quad a_8$ ، عددی $a = \frac{1}{4}$

$a+d \quad a+3d \quad a+7d$ ، $aq^9 = ?$

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$(a+3d)^2 = (a+d)(a+7d) = a^2 + 9d^2 + 6ad = a^2 + 7ad + 2ad + 7d^2$

$2d^2 = 2ad$

$2d = 2a \rightarrow \frac{1}{4} \times \left(\frac{1}{4}\right)^9$

غلط دادم؟

$3a_2 = 2a_3 = a_4$ — ۸

$3(aq) = 2(aq^2) = (aq^3)$

$2(2aq^2) = 3aq + aq^3 \rightarrow 4aq^2 = 3aq + aq^3 \rightarrow 4aq^2 = aq(3+q^2)$

$4q = 3 + q^2$

$q^2 - 4q + 3 = 0 \quad (q-1)(q-3) = 0$ (۳)

$q = 1$ ✗ $\quad q = 3$ ✓

$3, \frac{7}{4}, \dots$

$a_4, a_8, a_{12} \Rightarrow a_4, a_4+4d, a_4+9d \xrightarrow{+\theta} a_4+\theta, (a_4+4d)+\theta, (a_4+9d)+\theta$ — ۹ (۰)

$a_4 + \theta = k \quad k, k+4d, k+9d \Rightarrow (k+4d)^2 = k(k+9d) \rightarrow k^2 + 16d + 8dk = k^2 + 9kd \rightarrow 16d = kd$

(۱٫۲۵) — ۱۰

$a_1 \quad a_4 \quad a_7$

$a + aq^3 + aq^6 = 73$ ، $q = 1 \quad d = aq^3 - a = \frac{73}{3} - \frac{73}{3}$

$3a = 73 \Rightarrow a = \frac{73}{3}$

$a_1 \,,\, a_2 \,,\, a_{10}$

$a, a+d, a+9d \Rightarrow (a+d)^2 = a(a+9d) \quad a^2 + d^2 + 2ad = a^2 + 9ad$

$3a + 10a = 73 \quad d^2 = 7ad$

$3\left(\frac{d}{7}\right) + 10d \quad \boxed{d = 7} \quad 7a = d$

Arman

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