

نام و نام خانوادگی: ..... پاسخنامه تشریحی تکلیف شماره ۱۵... کلاس: .....  
 نام و نام خانوادگی: .....  
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$$a \times a q \times \frac{q}{2} = a^3 = 44 \rightarrow a = 4$$

$$\frac{a}{2} + a + a q = 41 \Rightarrow \frac{4}{2} + 4 + 4q = 41 \Rightarrow 2 + 4 + 4q = 41 \Rightarrow 4q = 35 \Rightarrow q = \frac{35}{4}$$

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$$t^2 = n^2 + 2n^2 - 1 \rightarrow n^2 - 2n^2 - 1 = 0 \xrightarrow{+1} t^2 - 2t - 1 = 0 \rightarrow (t-4)(t+2)$$

$$\rightarrow t=4 \rightarrow n^2=4 \rightarrow n=\pm 2 \xrightarrow{+2} 1, 4, 2 \checkmark \quad t=4 \quad t=2$$

$$\xrightarrow{-2} 1, -4, 2 \times \rightarrow n=2, q=\frac{1}{2}$$

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$$S_v = \frac{a(q^v - 1)}{q - 1} = \frac{1 \left( \left( \frac{1}{2} \right)^v - 1 \right)}{\frac{1}{2} - 1} = \frac{1 \times \frac{-127}{128}}{-\frac{1}{2}} = \frac{127}{64} = \frac{127}{64}$$

$$1 + q + q^2 + q^3 + q^4 = \frac{121}{11} \xrightarrow{\times a} a + aq + aq^2 + aq^3 + aq^4 = \frac{121a}{11}$$

مجموع ۵ جمله اول

$$\rightarrow \frac{121}{11} \times 223 = 2443$$

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$$d = \frac{44-1}{4} \rightarrow d = 11 \rightarrow 1, 11, 121, 22, \textcircled{221}, 44, 55, 121, 44$$

$$q^2 = \frac{44}{1} \rightarrow q = \pm 2 \rightarrow \begin{cases} q=2 \rightarrow 1, 2, 4, \textcircled{8}, 16, 32, 64 \\ q=-2 \rightarrow 1, -2, 4, \textcircled{-8}, 16, -32, 64 \end{cases}$$

$$A + B \rightarrow \begin{cases} 221 + 8 = 229 \\ 221 - 8 = 213 \end{cases}$$

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$$d = \frac{1}{4} \rightarrow a_1 = \frac{1}{4} + n = -24 \rightarrow n = -\frac{97}{4} \rightarrow a_{1,1} = \frac{1}{4} - \frac{97}{4} = \frac{4}{4} = 1$$

$$a q^{n-1} = 1 \rightarrow 128 \times q^{\frac{1}{2}} = 1 \rightarrow q^{\frac{1}{2}} = \frac{1}{128} \rightarrow (q^{\frac{1}{2}})^2 = \frac{1}{128^2} \rightarrow q = \frac{1}{128^2}$$

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$$(a+9d)^2 = (a+2d)(a+10d) \rightarrow a^2 + 36d^2 + 18ad = a^2 + 14d^2 + 10ad \rightarrow 2d^2 - 8ad$$

$$\rightarrow 2d = -2a \rightarrow d = \frac{-1}{10}a$$

$d=0$  → چون صورت سوال گفته مجلات متایزند

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$$(a+2d)^2 = (a+d)(a+3d) \rightarrow a^2 + 4d^2 + 4ad = a^2 + 3d^2 + 3ad \rightarrow d^2 = ad$$

$$\rightarrow d^2 = ad \rightarrow d = \frac{a}{d}$$

چون مجلات متایزند قابل قبول نیست

$$\hookrightarrow d = a \rightarrow 2d, 4d, 6d \rightarrow q = 2$$

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$$\rightarrow a_1 = a q^9 = \frac{1}{4} \times 2^9 = 128$$

$$3a_2, 2a_3, a_4, \dots \rightarrow 2(2a q^2) = 3a q + a q^3 \rightarrow 4a q^2 = a q (2 + q^2)$$

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

$$\rightarrow q = 3$$

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چون مجلات متایزند قابل قبول نیست

$$a_5, a_8, a_{13} \rightarrow a_5, a_5 + 3d, a_5 + 8d \xrightarrow{+b} a_5 + b, a_5 + 3d + b, a_5 + 8d + b$$

$$\xrightarrow{a_5 + b = c} c, c + 3d, c + 8d \Rightarrow (c+3d)^2 = c(c+8d)$$

دنباله هندسی

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$$\rightarrow c^2 + 14d^2 + 16cd = c^2 + 8cd \rightarrow 14d = c \rightarrow q = \frac{c+3d}{c} = \frac{c+3d}{14d} = \frac{2}{5}$$

$$a_1, a_5, a_9, a_{13} \rightarrow a(a+4d) = (a+d)^2 \rightarrow a^2 + 4ad = a^2 + d^2 + 2ad \Rightarrow d^2 - 2ad = 0$$

$$\rightarrow d(d-2a) = 0 \rightarrow d = 0$$

$$\hookrightarrow d = 2a$$

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$$a_1 + a_5 + a_9 = 17 \rightarrow a + a + d + a + 4d = 17 \rightarrow 3a + 5d = 17 \rightarrow 3a + 10d = 17 \rightarrow 3a = 17 - 10d \rightarrow a = \frac{17-10d}{3}$$

$$\rightarrow d = 1$$