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نام و نام خانوادگی ریاضیات پاسخنامه تشریحی تکلیف شماره ۱۴ کلاس دهم (په)

$a_n = a_1 \times r^{n-1} = \frac{1}{4} \times (4)^{n-1} \Rightarrow a_{10} = a_1 \times (4)^9 = \frac{1}{4} \times 4^9 = 4^8 = 256$ $\frac{a_2}{a_1} = r = \frac{1}{4} = 4$	$\frac{a_{10}}{a_1} = \frac{a_1 \times r^9}{a_1 \times r^0} = r^9 = 4^9 = 262144$ $a_4 = \frac{1}{4} \times 4^3 = 4$ $a_{10} = 256$ $\frac{a_{10}}{a_4} = \frac{256}{4} = 64 = r^6 \Rightarrow r = 2$ $\frac{1}{4} \times 2^{n-1} = 128 \times 256 = 2^1$ $n-1=9 \Rightarrow n=10$	۱
$\frac{a_1 \times r^4}{a_1 \times r^0} = 16 \Rightarrow r^4 = 16 \Rightarrow r = 2$ $\frac{a_1 \times r^4}{a_1 \times r^0} = 16 \Rightarrow r^4 = 16 \Rightarrow r = 2$ $a_1 \times r^4 = 16 \Rightarrow a_1 \times 16 = 16 \Rightarrow a_1 = 1$	$\frac{a_1 \times r^4}{a_1 \times r^0} = 16 \Rightarrow r^4 = 16 \Rightarrow r = 2$ $a_1 \times r^4 = 16 \Rightarrow a_1 \times 16 = 16 \Rightarrow a_1 = 1$ $a_1 = a_1 \times r^0 = 1 \times 1 = 1$ $a_{10} = a_1 \times r^9 = 1 \times 2^9 = 512$	۲
$a_1 \times a_2 \times a_3 \times a_4 \times a_5 = 243 \Rightarrow a_1 \times a_2 \times a_3 \times a_4 \times a_5 = 3^5$ $(a_3)^5 = 243 \Rightarrow a_3 = 3$	$a_1 \times a_5 = a_3 \times a_3 = 3 \times 3 = 9$	۳
$r^a \times r^b = (r^5)^r \Rightarrow r^{a+b} = r^5 \Rightarrow a+b=5$ $\frac{a+b}{r} = \frac{5}{r} = 5 \Rightarrow r=1$	$a+b=5$	۴
$a_1 \times a_2 \times a_3 \times a_4 \times a_5 = 243 \Rightarrow a_1 \times a_2 \times a_3 \times a_4 \times a_5 = 3^5$ $(a_3)^5 = 243 \Rightarrow a_3 = 3$	$a_1 \times a_5 = a_3 \times a_3 = 3 \times 3 = 9$ $a_1 \times a_5 = 9 \Rightarrow a_1 = 1, a_5 = 9$	۵

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فقط ۱/۲ ریشه!

$$a_1 + ar = r^1 \Rightarrow a_1 + ar^1 = r^1 \Rightarrow \cancel{a_1}(r^1+1) = \frac{(r+1)(r^1+1-r)}{r(r+1)} = \frac{1}{r}$$

$$a_1 + ar = r^1 \Rightarrow a_1 r + ar^1 = r^1 \Rightarrow \cancel{a_1}r(r+1)$$

$$r^1 r^1 + r^1 - r^1 r = r^1 r \Rightarrow r^1 r^1 - r^1 r + r^1 = 0 \Rightarrow r^1 - r^1 r + r^1 = 0 \Rightarrow (r-1)(r-1) = 0$$

$$r=1 \quad a_1(r^1+1) = r^1$$

$$\Rightarrow a_1(1+1) = r^1 \Rightarrow a_1 = 1$$

$$\left. \begin{matrix} r=1 \\ 1, r^1, q, r^1 \end{matrix} \right\} \Rightarrow$$

$$r = \frac{q}{r} \quad r = \frac{1}{r}$$

$$r = \frac{1}{r} \quad a_1\left(\frac{1}{r^1} + 1\right) = r^1 \Rightarrow a_1 = r^1 \quad \left. \begin{matrix} r = \frac{1}{r} \\ r^1, q, r^1, 1 \end{matrix} \right\} \Rightarrow$$

$$a_1 = 1 - r^1$$

$$a_1 + ar + ar^1 = r^1 \Rightarrow a_1 + r^1 + r^1 r = r^1 \Rightarrow a_1 + r^1 r = 1$$

$$a_1 \times ar + ar^1 = r^1 \Rightarrow a_1 r^1 = r^1 \Rightarrow a_1 r = r^1 \Rightarrow (1 - r^1)r = r^1 \Rightarrow 1 - r^1 r = r^1$$

$$a_1 \times r = r^1 \Rightarrow r = r^1 \Rightarrow a_1 = 1 \quad \left. \begin{matrix} a_1 \quad ar \quad ar^1 \\ 1 \quad r^1 \quad q \end{matrix} \right\} \Rightarrow$$

$$a_1 \times r = r^1 \Rightarrow r = \frac{1}{r} \Rightarrow a_1 = q \quad \left. \begin{matrix} a_1 \quad ar \quad ar^1 \\ q \quad r^1 \quad 1 \end{matrix} \right\} \Rightarrow$$

$$-r^1 r^1 + 1 - r^1 r = 0$$

$$r^1 + 1 - r + q = 0$$

$$(r+1)(r+q) = 0$$

$$r = \begin{cases} -1 \\ -q \\ -r^1 \end{cases} = \frac{1}{r^1}$$

$$S_n = a_1 \frac{(q^n - 1)}{q - 1} = \cancel{q} \times \frac{r^{1n} - 1}{r^1 - 1} = r^{1n} - 1 = a_1 q^n \in \mathbb{N}$$

$$q = \frac{1}{r} = r^1$$

$$a_{1n} = a_1 \times r^q = r^1 \times r^q$$

$$\sqrt{(a_1 \times a_{1n})^{10}} = (r^1 \times r^q)^{10} = r^{10} \times r^{10}$$

$$a_1, a_1 r, a_1 r^1, a_1 r^1$$

$$\frac{a_1 r - a_1}{a_1(r-1)}, \frac{a_1 r^1 - a_1 r}{a_1 r(r-1)}, \frac{a_1 r^1 - a_1 r^1}{a_1 r^1(r-1)}$$

$$r' = \frac{a_1 r(r-1)}{a_1(r-1)} = r$$

$$r' = r$$

$$S_n = a_1 + ar + ar^1 + \dots + ar^{(n-1)} \Rightarrow a_1 + a_1 r + a_1 r^1 + \dots + a_1 + (n-1)d =$$

$$n a_1 + (1 + r + \dots + (n-1)d) = n a_1 + \frac{(n-1)n}{2} d$$

$$= \frac{n}{2} (2a_1 + (n-1)d)$$

$$\frac{(n-1)n}{2}$$

$$1.$$

$$S_n = a + ar + ar^1 + \dots + ar^{(n-1)}$$

$$\times r$$

$$r S_n = ar + ar^1 + \dots + ar^n$$

$$\left. \begin{matrix} r S_n - S_n = ar^n - a_1 \\ \Rightarrow S_n(r-1) = a_1(r^n - 1) \end{matrix} \right\}$$

$$\Rightarrow S_n = \frac{a_1(r^n - 1)}{(r-1)}$$