

نام و نام خانوادگی رشته پاسخنامه تشریحی تکلیف شماره کلاس مدرسه تاریخ

$$a_n = \frac{1}{r} \text{ و } 1, r, \dots$$

$$a_n = a_1 \times q^{(n-1)} \rightarrow \frac{1}{r} \times r^{n-1}$$

$$a_{10} = \frac{1}{r} \times r^{10-1} = \frac{1}{r} \times r^9 = r^9 = 256 \quad (\text{الف})$$

$$\frac{a_{14}}{a_{10}} = \frac{a_1 q^{14}}{a_1 q^{10}} = q^4 \rightarrow r^4 \quad (\text{ب})$$

$$1, a, ar, ar^2 \rightarrow$$

$$a_1 \times q^3 \times 1 \rightarrow \frac{1}{r} \times 1 \times 1 \Rightarrow$$

$$= 132$$

$$\frac{a_{11}}{a_1} = q^{10} \rightarrow \frac{a_1 q^{11}}{a_1} = q^{10} \rightarrow q^4 = q^{10} \rightarrow q^6 = 1 \rightarrow q = 1$$

$$a_n = a_1 \times q^{n-1} \rightarrow \frac{1}{r} \times r^{n-1} \rightarrow r^9 = r^{n-1} \Rightarrow n = 10 \quad (\text{ج})$$

$$a_{10} = 12 \Rightarrow \frac{a_n}{a_{10}} = \frac{a_1 q^n}{a_1 q^{10}} = q^{n-10} \rightarrow q = r$$

$$a_n = 48 \Rightarrow \frac{a_n}{a_{10}} = \frac{a_1 q^n}{a_1 q^{10}} = q^{n-10} \rightarrow q = r$$

$$a_{10} = 12 \Rightarrow a_n \times q^r = 48 \times r = 288 \quad (\text{د})$$

$$a_1 \times a_2 \times a_3 \times a_4 \times a_5 = 243$$

$$\frac{(a_1 \times a_5) \times (a_2 \times a_4) \times (a_3)}{a_3 \times r} = 243 \Rightarrow (a_3)^5 = 243 \times r$$

$$a_3 = 3 \quad (\text{الف})$$

$$a_1 \times a_5 = (a_3)^2 \rightarrow 3^2 = 9$$

$$a_1 \times a_5 = 9 \quad (\text{ب})$$

$$r^b, r^{\sqrt{r}}, r^a \rightarrow r^b \sqrt{r^2} r^a \Rightarrow r^{b+a} = r^2 \Rightarrow r^{b+a} = r^2$$

$$b+a = 2 \rightarrow b, x, a$$

$$\frac{a+b}{r} = \frac{2}{r} = 210$$

$$\frac{a_n}{a_r} = \frac{a_{n+1}}{a_r} = q^f \Rightarrow \frac{x}{1-x} = \frac{x+1}{x}$$

$$\Rightarrow x^2 = 1-x^2 \Rightarrow 2x^2 = 1$$

$$x^2 = \frac{1}{2}$$

$$x = \pm \frac{1}{\sqrt{2}} \Rightarrow \pm \frac{\sqrt{2}}{2}$$

$$a_1 + ar = rn \rightarrow a_1 + a_1 q^p = a_1(1+q^p) \Rightarrow \frac{a_1 + ar}{ar + ar^p} = \frac{a_1(1+q^p)}{a_1 q(1+q)} = \frac{(1+q^p)}{q(1+q)}$$

$$ar + ar^p = 1r \rightarrow a_1 q + a_1 q^p = a_1 q(1+q) \Rightarrow \frac{1-q+q^p}{q} = \frac{rn}{1r} \rightarrow \frac{1-q+q^p}{q} = \frac{r}{1r} \Rightarrow 1-q+q^p = \frac{r}{1r} \Rightarrow 1-q+q^p = \frac{1}{r}$$

$$a_1(1+q^p) = rn \rightarrow 1+q^p = \frac{rn}{a_1} \Rightarrow a_1(1+q^p) = rn \Rightarrow a_1 = \frac{rn}{1+q^p}$$

$$1+q^p = \frac{1}{r} \Rightarrow a_1(1+\frac{1}{r}) = rn \Rightarrow a_1 = \frac{rn}{1+\frac{1}{r}} = \frac{rn}{\frac{r+1}{r}} = \frac{rn \cdot r}{r+1} = \frac{r^2 n}{r+1}$$

$a_1 + a_r + a_{1^r} = 1^r$
 $a_1 \times a_r \times a_{1^r} = r^r \rightarrow \frac{r}{q}, r, r^r \rightarrow \frac{r}{q}, r \times r^r = r^{r+1} \rightarrow \boxed{2^2 = 4}$
 $q = \frac{1}{r} \Rightarrow q, 1^r, 1$
 $q = r \Rightarrow 1, r, q$
 $q^{r-1} \cdot q + q = 0 \rightarrow (q-1)(q-q) \rightarrow q = \frac{1}{r}$
 $\rightarrow r, r^r, r^r q = 1^r q$
 $\leftarrow r^r q^{r-1} \cdot q + 1^r \cdot \dots$

$a_n = r, r, r, \dots$
 $q = w$
 $a_1, a_2, a_3, \dots, a_n = r \times w^q$

$$S_n = a_1 \left(\frac{q^n - 1}{q - 1} \right) = r \times \left(\frac{w^n - 1}{w - 1} \right) = w^n - 1 \Rightarrow$$

$$(w^0 - 1) (w^0 + 1) = r \times r \times r \times r = 0.4 \times 4$$

$a \rightarrow a \quad aq \quad aq^2, \dots$
 $a' \rightarrow a \cdot aq, \quad aq \cdot aq^2, \quad aq^2 \cdot aq^3$
 $\Rightarrow a(1-q), \quad aq(1-q), \quad aq^2(1-q) \Rightarrow q' = \frac{aq(1-q)}{a(1-q)} = \frac{aq^2(1-q)}{aq(1-q)} = q$

(ب) اگر $\frac{a}{b}$ باشد، بنابر قضی است که بنابر قضی است و قدر نسبت $\frac{a}{b}$ است

$$S_n = \frac{n}{r} (ra + (n-1)d) \rightarrow S_n = \frac{n}{r} (ra + d(n-1))$$