

نام و نام خانوادگی رشته پاسنامه تشریحی تکلیف شماره کلاس دفتر C

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

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

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

$$\frac{a_{10}}{a_{100}} = \frac{a_1 q^{10}}{a_1 q^{100}} = q^9 \rightarrow r^9 \quad (\text{ب})$$

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

$$a_1 \times q^3 = 1 \rightarrow \frac{1}{r} \times r^3 = 1 \Rightarrow r^2 = 1 \Rightarrow r = 1 \quad (\text{ج})$$

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

$$a_{10} = 12 \Rightarrow \frac{a_n}{a_{10}} = \frac{a_1 q^n}{a_1 q^{10}} = q^9 = 1 \rightarrow q = 1$$

$$a_{10} = 12 \Rightarrow a_n \times q^9 = 12 \times r^9 = 256 \quad (\text{ب})$$

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

$$\frac{(a_1 \times a_5) \times (a_2 \times a_4) \times (a_3)}{a_1 \times a_5} = 243 \Rightarrow (a_3)^5 = 243 \Rightarrow a_3 = 3$$

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

$$r^b, r^{\sqrt{r}}, r^a \rightarrow r^b \sqrt{r^2} r^a \Rightarrow \frac{b+a}{r} = 32 \Rightarrow \frac{b+a}{r} = 2^5$$

$$b+a = 5 \rightarrow b, x, a$$

$$\frac{a+b}{r} = \frac{5}{r} = 32 \Rightarrow r = \frac{5}{32}$$

$$1-x, x, x+1 \rightarrow \frac{a_n}{a_{n-1}} = \frac{a_{n+1}}{a_n} = q^2 \Rightarrow \frac{x}{1-x} = \frac{x+1}{x}$$

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

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

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

فقط $\frac{\sqrt{2}}{2}$ درست است!

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

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

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

$$1-q+q^n = \frac{r}{1r} \Rightarrow 1-q+q^n = \frac{r}{1r} \Rightarrow 1-q+q^n = \frac{r}{1r}$$

$$1-q+q^n = \frac{r}{1r} \Rightarrow 1-q+q^n = \frac{r}{1r} \Rightarrow 1-q+q^n = \frac{r}{1r}$$

$a_1 + ar + ar^2 = 11$
 $a_1 \times ar \times ar^2 = 125$

$q = \frac{1}{r} \Rightarrow q, r, 1$
 $q = r \Rightarrow 1, r, q$

$\frac{x}{y}, x, xq \rightarrow \frac{x}{y}, x \times xq = x^2 = 11 \rightarrow \boxed{x = \sqrt{11}}$
 $\frac{r}{q}, r, rq \rightarrow \frac{r}{q}, r + rq = 11$
 $\frac{r, rq, r^2}{q} = 125$
 $r + rq + r^2 = 11q$
 $\frac{r}{q} = \frac{1}{r} \Rightarrow q = \frac{1}{r}$
 $r + r \times \frac{1}{r} + \frac{1}{r} = 11 \times \frac{1}{r}$
 $r + 1 + \frac{1}{r} = \frac{11}{r}$
 $r^2 + r + 1 = 11$
 $r^2 + r - 10 = 0$
 $(r+5)(r-2) = 0$
 $r = -5$ or $r = 2$

$a_n = r, r, 1, \dots$
 $q = r$
 $a_1, \dots, a_n \times q^{(n-1)} = r \times r^q$
 $\Rightarrow \sqrt{(1/r) \times (1/r)^n} = \sqrt{(1/r \times 1/r^q)^{1/2}} = \sqrt{1/r \times 1/r^q} = (1/r \times 1/r^q)^{1/2} = 1/r \times 1/r^q$

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

(ب) اگر $\frac{1}{2}$ باشد، $\frac{1}{2}$ باشد، $\frac{1}{2}$ باشد، $\frac{1}{2}$ باشد

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