نام و نام خانوادگی ......[illegible]...... پاسخنامه تشریحی تکلیف شماره ...۱۴... کلاس ....دهم ب A....

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الف) $a_n = \frac{1}{2}\times 2^{n-1} \rightarrow a_{10} = \frac{1}{2}\times 2^{9} = 2^{8} = \boxed{256}$

ب) $\frac{a_{17}}{a_{13}} = \frac{aq^{16}}{aq^{12}} = q^{4} = 2^{4} = \boxed{16}$

ج) $x = \sqrt{a_{4} a_{10}} = \sqrt{a_1^{2}\times q^{12}} = a_1 q^{6} = \frac{1}{2}\times 2^{6} = 2^{5} = \boxed{32}$

د) $\frac{1}{2}\times 2^{n-1} = 128 = 2^{7} \Rightarrow 2^{n-1} = 2^{8} \Rightarrow \boxed{n=9}$

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$$\frac{a_8}{a_5} = \frac{aq^{7}}{aq^{4}} = q^{3} = \frac{96}{12} = 8 \Rightarrow q = 2$$

$$a_{10} = a_8\times q^{2} = 96\times 2^{2} = \boxed{384}$$

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$$\frac{a_3}{q^2}\times\frac{a_3}{q}\times a_3\times a_3 q\times a_3 q^{2} = a_3^{5} = 243 \Rightarrow a_3 = \sqrt[5]{243} \Rightarrow \boxed{a_3 = 3}$$

الف

$$a_1\times a_5 = a_3\times a_3 = 3\times 3 = \boxed{9}$$

ب

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$$2^{a},\ 2^{\frac{5}{2}},\ 2^{b} \Rightarrow 2^{a}\times 2^{b} = \left(2^{\frac{5}{2}}\right)^{2} \Rightarrow 2^{a+b} = 2^{5} \Rightarrow a+b = 5$$

$$a,\ x,\ b \Rightarrow 2x = \underbrace{a+b}_{5} \Rightarrow x = \frac{5}{2} = \boxed{2.5}$$

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$$a_7\times a_7 = a_3\times a_{11} \Rightarrow x^{2} = (x+1)(1-x) = 1 - x^{2} \Rightarrow 2x^{2} = 1$$

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

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

$\rightarrow \frac{\sqrt{2}}{2}$

$\rightarrow -\frac{\sqrt{2}}{2}$

Subject: Date:

$$\left.\begin{array}{l} a+aq^3=28 \\ aq+aq^2=12 \end{array}\right\} \Rightarrow \frac{a+aq^3}{aq+aq^2}=\frac{7}{3} \Rightarrow \frac{\cancel{a}(q^3+1)}{\cancel{a}q(q+1)}=\frac{\cancel{(q+1)}(q^2+1-q)}{q\cancel{(q+1)}}=\frac{7}{3}$$ ۶

$$\Rightarrow 7q=3q^2+3-3q \Rightarrow \cancel{3}q^2-10q+\cancel{3}=0 \Rightarrow q^2-10q+9=(q-1)(q-9)$$

$$\Rightarrow q=\begin{cases} \frac{1}{3} \\ \frac{9}{3}=3 \end{cases} \qquad q=\frac{1}{3} \Rightarrow a+\frac{a}{27}=28 \Rightarrow a=27$$

$$\Rightarrow 27,\ 9,\ 3,\ 1 \Rightarrow 27$$ ← بزرگترین

$$q=3 \Rightarrow a+27a=28 \Rightarrow a=1$$

$$\Rightarrow 1,\ 3,\ 9,\ 27 \longrightarrow$$ بزرگترین

در هر دو حالت بزرگترین ۲۷ است.

$$\frac{a_2}{q}\times a_2 \times a_2 q=27 \Rightarrow a_2^3=27 \Rightarrow a^2=3$$ ۷

$$\Rightarrow \frac{3}{q}+3+3q=13 \Rightarrow 3+3q+3q^2=13q \Rightarrow \cancel{3}q^2-10q+\cancel{3}=0$$

$$(q-1)(q-9)=0$$

$$\Rightarrow q=\begin{cases} \frac{1}{3} \\ \frac{9}{3}=3 \end{cases} \Rightarrow \quad a_1,\ a_2,\ a_3$$

$$\left.\begin{array}{l} q=3 \rightarrow 1,\ 3,\ 9 \\ q=\frac{1}{3} \rightarrow 9,\ 3,\ 1 \end{array}\right\}$$ دو حالت

الف) $S_{10}=a\left(\frac{q^{10}-1}{q-1}\right)=\cancel{2}\left(\frac{3^{10}-1}{\cancel{3-1}}\right)=3^{10}-1=59049-1=\boxed{59048}$ ۸

ب) $P_{10}=(a\times a_{10})^{\frac{10}{2}}=(a\times a\times q^9)^5=a^{10}\times q^{45}=\boxed{2^{10}\times 3^{45}}$

$a, aq, aq^2, aq^3, \dots, aq^{n-1}$ $aq-a, aq^2-aq, aq^3-aq^2, \dots, aq^{n-1}-aq^{n-2}$ $\underbrace{a(q-1)}_{a_1}, aq(q-1), aq^2(q-1), \dots, a(q-1)q^{n-1} \rightarrow$ قدر نسبت هر دو دنباله مساوی است قدر نسبت $q =$ قدر نسبت	۹
الف) $(a)+(a+d)+(a+2d)+\dots+(a+(n-1)d) = na + \frac{n(n-1)}{2}d = \frac{n}{2}(2a+(n-1)d)$ $\Rightarrow S_n = \frac{n}{2}(2a+(n-1)d)$ ب) $(a+aq+aq^2+\dots+aq^{n-1})\frac{q-1}{q-1}$ $=(\cancel{aq}-a+\cancel{aq^2}-\cancel{aq}+\cancel{aq^3}-\cancel{aq^2}+\dots+aq^n-\cancel{aq^{n-1}})\frac{1}{q-1} = \frac{aq^n-a}{q-1}$ $= a\left(\frac{q^n-1}{q-1}\right) = S_n$	۱۰