نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ..... کلاس .....

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الف) $aq^9 = \frac{1}{2} \times 2^9 = 256$

ب) $\frac{a_{12}}{a_{13}} = q^4 = 16$

ج)

د) $a_9 = 128 \Leftarrow \frac{1}{2} \times 2^7 = 2^7 \Leftarrow 128 = 2^7$

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$$\left.\begin{array}{l} a_2 = aq^4 = 12 \\ a_1 = aq^7 = 96 \end{array}\right\} \Rightarrow q^3 = 8 \Rightarrow q = 2 \Rightarrow a = \frac{3}{4}$$

$$a_{10} = \frac{3}{4} \times 2^9 = \frac{3 \times 2^9}{2^2} = 384$$

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$$(a_1)^5 \times q^{10} = 2^{43}$$

$$aq^2 \cdot aq^3 = \frac{2^{43}}{2a^2q^4} \Rightarrow 2^{43} = 2a^5q^6$$

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$$2^{a+b} = 32 \Rightarrow a+b = 5$$

$$a_{n+1} = 2a_n - a_{n-1}$$

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$$\left.\begin{array}{l} aq^2 = 1-x \\ aq^4 = x \\ aq^{10} = x+1 \end{array}\right\} \frac{x+1}{x} = \frac{x}{1-x} \Rightarrow x^2 = x+1-x^2-x$$

$$\Rightarrow 2x^2 - 1 = 0$$

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

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$$\left.\begin{array}{l} a + aq^2 = 12 \Rightarrow a(q^2+1) = 12 \\ aq^1 + aq^2 = 18 \Rightarrow aq(q^2+q) = 18 \end{array}\right\} \frac{q^2+1}{q^2+q} = \frac{12}{18} \Rightarrow q = 3$$

$$\Rightarrow a = 1$$

$$a_4 = 1 \times 3^3 = 27$$

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$$(a_1 + a_2 + a_3)^3 = 27 \Rightarrow a_2 = 3 = aq$$

$$a_1 + 3 + 3q = 13 \Rightarrow a + 3q = 10 \Rightarrow a = 10 - 3q = 3$$

$$1 + 3 + \frac{3q^3 - 3}{q-1} = 13 \Rightarrow 3q^3 - 3 = 9q - 9 \Rightarrow 3q^3 - 9q + 6 = 0 \Rightarrow$$

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$$\frac{3^{10} - 1}{3 - 1} =$$

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