

نام و نام خانوادگی: محمد مهدی پور پاسخنامه تشریحی تکلیف شماره ۱۴ کلاس دوم تجربی B

$$t_n = t \times q^{n-1} \quad t_n = L \times 2^{n-1} \Rightarrow \frac{1}{2} \times 2^9 = 2^8 = 256$$

$$a_{17} = \frac{1}{2} \times 2^{16} = 2^{15} \quad a_{17} = \frac{1}{2} \times 2^{17} = 2^{16} \Rightarrow \frac{2^{15}}{2^{16}} = \frac{1}{2} = 0.5$$

$$b^2 = a \times L \quad a_8 = \frac{1}{2} \times 2^7 = 2^6 = 64 \quad a_{10} = \frac{1}{2} \times 2^9 = 2^8 = 256$$

$$2 \times 256 = 512 = b^2 \Rightarrow b = \sqrt{512}$$

$$\frac{1}{2} \times 2^{n-1} = 128 \Rightarrow 2^{n-1} = 256 \Rightarrow n-1 = 8 \Rightarrow n = 9$$

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$$q^{m-n} = \frac{a_m}{a_n} = q^r = \frac{96}{12} = 8 \Rightarrow q = 2$$

$$t_n = t \times q^{n-1} \Rightarrow t_0 = t \times 2^0 = 12 = t \times 2^8 \Rightarrow t_1 = \frac{12}{2} = 6$$

$$a_0 = \sum_{k=0}^9 t_k \times 2^k = \sum_{k=0}^9 6 \times 2^k = 6 \times (2^{10} - 1) = 6 \times 1023 = 6138$$

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$$a_1 \times a_2 \times a_3 \times a_4 \times a_5 = 243 \Rightarrow a_3^5 = 243 \Rightarrow a_3 = 3$$

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$$a_1 \times a_4 = a_3^2 = 3^2 = 9$$

$$(a+b)^2 = a^2 + b^2 \Rightarrow 22 = 2 \Rightarrow 2 = 2 \Rightarrow a+b = 2$$

$$\frac{a+b}{2} = \frac{2}{2} = 1$$

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

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$a + ar^r = 11 \Rightarrow a(1+r^r) = 11 \Rightarrow a = \frac{11}{1+r^r}$ $ar + ar^r = 12 \Rightarrow ar(1+r) = 12 \Rightarrow a = \frac{12}{r(1+r)}$ $\frac{11(1+r)}{r(1+r)} = 11 \Rightarrow 11(1+r) = 11r(1+r) \Rightarrow 11 + 11r = 11r + 11r^2$ $11r^2 - 11r - 11r + 12 = 0 \Rightarrow 11r^2 - 22r + 12 = 0 \Rightarrow r = \frac{22 \pm \sqrt{22^2 - 4 \cdot 11 \cdot 12}}{2 \cdot 11} = \frac{22 \pm \sqrt{484 - 528}}{22} = \frac{22 \pm \sqrt{-44}}{22}$ $-V(9) - V(5) + 12 = 0 \quad a = \frac{12}{r(1+r)} = \frac{12}{12} = 1 \Rightarrow a_1, a_2, a_3, a_4 = 1, 1, 1, 1$	6
$P_r = 11 \Rightarrow r = \frac{11}{a} = 11 \Rightarrow a = \frac{1}{11}$ $S_r = a + ar + ar^2 = \frac{1}{11} (1 + 11 + 121) = \frac{1}{11} \cdot 132 = 12$ $\frac{10 \pm 1}{2} \Rightarrow 9 = \frac{1}{2}, \frac{1}{2}$ $a = \frac{1}{9} \Rightarrow 1: 9 = 1 \Rightarrow a = 1 \Rightarrow 1, 9, 9 \quad 1: 9 = \frac{1}{9} \Rightarrow a = 9 \Rightarrow 9, 1, 1$	7
$a_n = 1, 1, 1, \dots, a_n = 10^{n-1}$ $S_n = 1 \times \frac{(10^n - 1)}{10 - 1} = \frac{10^n - 1}{9}$ $P_n = \sqrt{(1 \times 10^{n-1})!} = \sqrt{10^{n-1} \times \dots \times 1}$ $a_1 = 10 \times 10^9$	8
$a_n = a_1 q, a_2 q, a_3 q, \dots$ $b_1 = a_1 - a = a(q-1)$ $b_2 = a_2 - a_1 = a(q-1)$ $b_3 = a_3 - a_2 = a(q-1)$ $\frac{b_2}{b_1} = \frac{a(q-1)}{a(q-1)} = q = r_{\text{new}}$	9
$S_n = a_1 + a_1 q + a_1 q^2 + \dots + a_1 q^{n-1} \Rightarrow S_n q = a_1 q + a_1 q^2 + \dots + a_1 q^n$ $S_n - S_n q = a_1 - a_1 q^n \Rightarrow S_n (1-q) = a_1 (1-q^n) \Rightarrow S_n = \frac{a_1 (q^n - 1)}{q - 1} = \frac{a_1 (1 - q^n)}{1 - q}$ $S = (1a + (n-1)d) + (1a + (n-1)d) + \dots + (1a + (n-1)d) \Rightarrow S = n \times (1a + (n-1)d)$ $\Rightarrow S = \frac{n}{2} \times (1a + (n-1)d)$	10