نام و نام خانوادگی ....تینا حیاتی داوری............ پاسخنامه تشریحی تکلیف شماره ...۱۷... کلاس ......دهم دختر C نیمفیلد......

آخرین عدد دسته ۹ $\Rightarrow 9^2 = 81$ آخرین عدد دسته ۸ $\Rightarrow 8^2 = 64 \Rightarrow$ اولین عدد دسته ۹ $\Rightarrow 65$ واسطه حسابی $= \frac{81+65}{2} = \frac{146}{2} = 73$	۱
$1, \dots, 3 \mid 4, \dots, 12 \mid 13, \dots, 39 \mid 40, \dots, 120 \mid 121, \dots, 363$ میانگین دسته ۵ $= \frac{363+121}{2} = 242$	۲
$a_0 + a_1 + a_2 + a_3 + \dots + a_9 = 19$ $a_0 = 2^0 = 1$, $a_1 = 4$ $a_2 + a_3 + a_4 + \dots + a_{29} = 28$ $[\frac{2}{2}]+1 + [\frac{5}{3}]+1 + [\frac{8}{4}]+1 + [\frac{11}{5}]+1 + [\frac{14}{6}]+1 + [\frac{17}{7}]+1 + [\frac{20}{8}]+1 + [\frac{23}{9}]+1 + [\frac{26}{10}]+1 + [\frac{29}{11}]+1 = 28$	۳
$a_5 = 14$ $a_7 = 17.2$ $a_n = \frac{1}{25} \times (-25) n^2 + bn + c = -\frac{1}{5} n^2 + bn + c$ $-\frac{1}{5} \times 25 + 5b + c = 14$ $-\frac{1}{5} \times 49 + 7b + c = 17.2$ $\begin{cases} 5b + c = 19 \\ 7b + c = 27 \end{cases} \Rightarrow 2b = 8$, $b = 4$, $c = -1$ $\frac{a_5}{a_1} = ? \rightarrow \frac{-\frac{1}{5} \times (25) + 5 \times 4 - 1}{-\frac{1}{5} + 4 - 1} = \frac{14}{2.8} = 5$	۴
$t_4 = a_2$ $d = \frac{t_8 - t_4}{4} = \frac{a_7 - a_2}{4}$ $t_8 = a_7$ $a_{10} = 0$ $\frac{a_{15}}{d} = ?$ $\frac{\frac{a_{10} + 5d}{1}}{\frac{a_{10} - 3d - a_{10} + 8d}{4}} = \frac{4a_{10} + 20d}{5d} = 4$	۵

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$4a_4^2 = 5a_4 a + 2a_4 a$ $\quad 4(a+d)^2 = 5(a+2d)a + 2(a+d)a$

$4a^2 + 4d^2 + 16ad = 5a^2 + 10ad + 2a^2 + 2ad$

$2a^2 + ad = 4d^2 \quad 2a^2 + ad - 4d^2 = 0$ $\quad \frac{2a^2}{d^2} + \frac{a}{d} - 4 = 0$

$\frac{a_2}{d} = \frac{a+2d}{d} = \frac{a}{d} + 2 = \frac{9}{2}$ ✓ $\quad \frac{a}{d} = x \Rightarrow 2x^2 + x - 4 = 0$ $\quad x = \frac{-1 \pm \sqrt{1+32}}{4}$

$x = \frac{3}{2}$

$x = -2$

۷

$a, b, c \rightarrow$ گ.ح $\quad 2b = a + c$

$b, \frac{a}{2}, \frac{c}{2} \rightarrow$ هندسی $\quad \frac{a^2}{4} = \frac{bc}{2} \Rightarrow a^2 = 2bc \rightarrow b, a, c \rightarrow$ هندسی

$2q = ?$

$\frac{a}{a+d} = \frac{a+2d}{a}$ $\quad a^2 = a^2 + 2ad + 2d^2$ $\quad 2ad = -2d^2 d$ $\quad d = \frac{-2a}{2}$

$b = -\frac{a}{2}$ $\quad c = -2a$ $\quad q = \frac{\frac{a}{2}}{b} = \frac{a}{2b} = \frac{a}{-a} = -1$ $\quad 2q = -2$

۸

$a, b, c \rightarrow$ هندسی $\quad b^2 = ac$

$2b, 2a, c \rightarrow$ گ.ح $\quad 2a = 2b + c$

$2a = 2aq + aq^2$

$\frac{aq}{a_4} = ? \quad \frac{aq^4}{aq^3} = q$ $\quad q^2 + 2q - 2 = 0$

$q = \frac{-2 \pm \sqrt{4+16}}{2} \Rightarrow q = 1$

$q^2 = 1 \quad q^2 = -4$ $\quad q = -2$

۹

$\frac{a_4}{(a_2)^2} + \frac{a_2}{(a)^2} = 2$ $\quad \frac{aq^3}{a^2 q^2} + \frac{aq}{a^2} = 2$ $\quad \frac{q^2 + aq}{a^2} = 2$

$\frac{q^2}{a^2} + \frac{q}{a} - 2 = 0$ $\quad \frac{q}{a} = x \Rightarrow x^2 + x - 2 = 0$ $\quad q^2 + aq = 2a^2$

$x = \frac{-1 \pm \sqrt{1+8}}{2} = 1$

$x = -2$

۱۰

$a_3 = \sqrt{a_2} = \sqrt{aq^2} = aq$ $\quad aq^3 = a_2 q^2$ $\quad aq = 1 \Rightarrow a_2 = 1$

$a_5 = 27 = aq^4 = 27$

$q^3 = \frac{27}{1}$ $\quad q = 3$ $\quad a = \frac{27}{81}$

$\frac{1}{2} - \frac{27}{81} = \frac{81 - 54}{162} = \frac{27}{162} = \frac{1}{6}$