نام و نام خانوادگی ...آرین نصیری... پاسخنامه تشریحی تکلیف شماره .... کلاس ....دهم پ....

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$a_1 + a_2 + a_3 = 21$

$a_1 \cdot a_2 \cdot a_3 = 64$

$4(1+q+q^2) = 21q \Rightarrow 4q^2 - 17q + 4 = 0 \rightarrow q = \frac{17 \pm \sqrt{289-64}}{8} = \frac{17 \pm 15}{8}$

$q = 4$ یا $q = \frac{1}{4}$

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$x^4 + 2x^2 - 8 = 4x^2 \rightarrow x^4 - 2x^2 - 8 = 0 \Rightarrow x = \pm 2 \xrightarrow{q>0} x = 2$

$8, 4, 2, \dots \qquad S_7 = 8\left(\frac{1-(\frac{1}{2})^7}{\frac{1}{2}}\right) = 16 - (\frac{1}{2})^3 = 15\frac{7}{8} = \frac{127}{8}$

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$q + q^2 + q^3 + q^4 = \frac{40}{81} \Rightarrow q = \frac{1}{3} \qquad S_5 = 3^5\left(q\,\frac{1-(\frac{1}{3})^5}{\frac{1}{3}}\right) = 363$

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$d = \frac{64-1}{6} = \frac{63}{6} = 10.5 = \frac{21}{2} \qquad A = 1 + 3d = 1 + 3\cdot\frac{63}{6} = 1 + \frac{189}{6}$

$= 1 + \frac{189}{6} = 1 + 31.5 = \frac{65}{2} \qquad B = 1 \cdot r^3 = 2^3 = 8 \quad A = \frac{65}{2},\ B = 8$

$A + B = \frac{65}{2} + \frac{16}{2} = \boxed{\frac{81}{2}}$

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$d = \frac{1}{4} \Rightarrow a_{1001} = -24 + 25 = 1 \Rightarrow t_8 = 1$ و $t_8 = r^7 \Rightarrow q = \frac{1}{2}$

$a_3 = a+2d \quad a_7 = a+6d \quad a_9 = a+8d$ $(a+6d)^2 = (a+2d)(a+8d)$ $(a+6d)^2 \Rightarrow (a+2d)(a+8d) = 0 \Rightarrow 2ad + 20d^2 = 0 \Rightarrow 2d(a+10d) = 0$ $d = 0$ یا $d = \frac{-a}{10}$	۶
$a_2 = A+d \quad a_4 = A+3d \quad a_8 = A+7d \quad (A+3d)^2 = (A+d)(A+7d)$ $g_{10} = g_1 r^9 = \frac{1}{4} \cdot 2^9 = \frac{1}{4} \cdot 512 = \boxed{128}$	۷
$2gr \quad 2gr^2 \quad gr^3 \quad 2gr^2 - 2gr = gr^3 - 2gr^2 \quad 2r - 3 = r^2 - 2r \Rightarrow r^2 - 4r + 3 = 0$ $\Rightarrow (r-1)(r-3) = 0 \quad \boxed{r = 3}$	۸
$a_4 = \frac{5}{4} \quad a_8 = \frac{-1}{4} \quad a_{12} = -1 \Rightarrow (a + \frac{5}{4})(x-1) = (x + \frac{1}{4})^2$ $\Rightarrow \frac{-x}{4} - \frac{21}{16} = 0 \Rightarrow \frac{-21}{4} \Rightarrow -4, -5, -\frac{25}{4} \Rightarrow \boxed{q = \frac{5}{4}}$	۹
$\left.\begin{array}{l} 2a + 10d = 72 \\ aq^2 = a+d \end{array}\right\\} 1 + q^2 + q^4 + 72 \Rightarrow q = 2$ $d = 7$	۱۰