نام و نام خانوادگی ...هستی بصیری نژاد... پاسخنامه تشریحی تکلیف شماره ۱۵... کلاس ...دهم ریاضی A...

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$a_1 + a_2 + a_3 = 21 \qquad a_1 \times a_2 \times a_3 = 64 \rightarrow a_1q^{-1} \times a_1 \times a_1q^{+1} = 64 \rightarrow a_1^3 = 64$

$\rightarrow a_1 = 4$

$\rightarrow a_1q^{-1} + a_1 + a_1q = 21 \rightarrow \left(\frac{4}{q} + 4 + 4q = 21\right) \times q \rightarrow 4 + 4q + 4q^2 = 21q$

$4q^2 - 17q + 4 = 0 \rightarrow \frac{17 \pm \sqrt{289 - 64}}{2 \times 4} = \begin{cases} \frac{17+15}{8} = 4 \rightarrow \boxed{4} \\ \frac{17-15}{8} = \frac{1}{4} \rightarrow \boxed{0.25} \end{cases}$

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$\boxed{S_n = a_1\left(\frac{q^n - 1}{q - 1}\right) \rightarrow 8 \times \left(\frac{(\frac{1}{2})^7 - 1}{\frac{1}{2} - 1}\right) = \frac{127}{8}}$

$\frac{x^2+4}{8}, \frac{2x}{4}, \frac{x^2-2}{2}$

$\frac{2x}{x^2+4} = \frac{x^2-2}{2x} \rightarrow 4x^2 = x^4 - 8 + 2x^2 \rightarrow x^4 - 2x^2 - 8 = 0$

$x^2 = \frac{+2 \pm \sqrt{(-2)^2 - 4 \times 1 \times -8}}{2} \rightarrow \frac{2 \pm 6}{2} \rightarrow x^2 = 4 \rightarrow x = \pm 2 \rightarrow \boxed{x = 2} \rightarrow$ چون نزولیه

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مجموع ۵ جمله اول دنباله هندسی : $a_1 + a_1q + a_1q^2 + a_1q^3 + a_1q^4 = \underbrace{\cancel{a_1}}_{243}\underbrace{(1 + q + q^2 + q^3 + q^4)}_{\frac{121}{81}}$

$\rightarrow \frac{243 \times 121}{81} = \boxed{363}$

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$d = \frac{b-a}{k+1} \rightarrow \frac{64-1}{6} \rightarrow d = 10.5 \qquad 1, 11.5, 22, \underset{A}{32.5}, 43, 53.5, 64$

$q^{k+1} = \frac{b}{a} \rightarrow q^{5+1} = \frac{64}{1} \rightarrow q = 2 \qquad 1, 2, 4, \underset{B}{8}, 16, 32, 64$

$A + B \rightarrow 32.5 + 8 = \boxed{40.5}$

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$-24, -23.75, \ldots \rightarrow t_n = (n \times \frac{1}{4}) - 24.25 \rightarrow t_{101} = (101 \times \frac{1}{4}) - 24.25 = \boxed{1}$

$128, 64, 32, 16, 8, 4, 2, 1 \rightarrow q^{6+1} = \frac{1}{128} \rightarrow \boxed{q = \frac{1}{2}}$

$\boxed{q = \frac{1}{2}}$

$t_3 = t_1+2d \quad t_7 = t_1+6d \quad t_9 = t_1+8d \quad \frac{t_1+2d}{-8d}, \frac{t_1+6d}{-4d}, \frac{t_1+8d}{-2d}$ $\frac{t_1+6d}{t_1+2d} = \frac{t_1+8d}{t_1+6d} \to \cancel{t_1^2} + 10dt_1 + 16d^2 = \cancel{t_1^2} + 36d^2 + 12dt_1$ $-20d^2 = 2dt_1 \to -10d = t_1 \to \frac{d}{\underset{-10d}{t_1}} = \boxed{\frac{-1}{10}}$	6
$t_2 = t_1+d \quad t_4 = t_1+3d \quad t_8 = t_1+7d \quad \frac{t_1+d}{2d}, \frac{t_1+3d}{4d}, \frac{t_1+7d}{8d} \quad \frac{4d}{2d} = 2$ $\frac{t_1+3d}{t_1+d} = \frac{t_1+7d}{t_1+3d} \to \cancel{t_1^2} + 8dt_1 + 7d^2 = \cancel{t_1^2} + 9d^2 + 6dt_1 \to 2dt_1 = 2d^2$ $t_1 = d \checkmark \to \frac{1}{4}, \frac{1}{2}, 1, 2, 4, 8, 16, 32, 64, 128 \to$ جمله دهم	7
$\underset{d}{3a_1q}, \underset{d}{2a_1q^2}, a_1q^3 \to 2a_1q^2 - 3a_1q = a_1q^3 - 2a_1q^2$ $\to \cancel{a_1q}(2q-3) = \cancel{a_1q}q(q-2)$ $2q-3 = q^2-2q \to -q^2+4q-3=0 \to -(q-1)(q-3)=0 \to q=3$ $q=3$	8
$2, 1.75, \ldots \to t_n = (n \times -\frac{1}{4}) + 2.25 \quad t_4 = 1.25 \quad t_8 = 0.25 \quad t_{13} = -1$ $\frac{1.25+d}{-4}, \frac{0.25+d}{-5}, \frac{-1+d}{-4.25} \quad \frac{0.25+d}{1.25+d} = \frac{-1+d}{0.25+d} \to \frac{1}{16} + \cancel{d^2} + \frac{1}{2}d = -1.25 + 1.25d + \cancel{d^2}$ $-0.25d = 1.3125 \to \boxed{d = -5.25} \to \boxed{-5.25}$	9
$a_1 + a_1q^3 + a_1q^6 = 73 \quad \frac{a_1}{1}, \frac{a_1q^3}{8}, \ldots, a_1q^6$ $8(a_1q^3 - a_1) = a_1q^6 - a_1q^3 \to 8a_1(\cancel{q^3-1}) = a_1q^3(\cancel{q^3-1})$ $8a_1 = a_1q^3 \to 8 = q^3 \to q=2 \to a_1 + 8a_1 + 64a_1 = 73 \to a_1 = 1$ $8-1 = \boxed{7}$	10