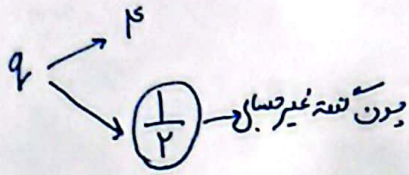


نام و نام خانوادگی: شماره: ۱۵۰۰ کلاس: دهم ریاضی پاسخنامه تشریحی تکلیف شماره ۱۵۰۰

$$\frac{r_v}{q} = r_v \cdot r_v \cdot q = 4^4 - 5 \cdot 2^3 = 64 - 40 = 24 \rightarrow \frac{4}{q} + 4 \cdot 4q = 24 \rightarrow \frac{4}{q} + 16q = 17 \rightarrow 4q^2 - 17q + 4 = 0$$

$$\Delta = 289 - 4 \cdot 4 = 225$$

$$\frac{17-15}{2} \text{ و } \frac{17+15}{2}$$



۱

$$(4x)^2 = (x+4)(x^2-4) \rightarrow 16x^2 = x^3 + 4x^2 - 4 \rightarrow 16x^2 = x^3 - 4 \rightarrow x^3 - 16x^2 - 4 = 0$$

چون نزول است

$$2 + (-4) + 1 + (-16) + 32 + (-64) + 128 = 16$$

۲

$$t_1 + t_1 r + t_1 r^2 + t_1 r^3 + t_1 r^4 = ? \rightarrow t_1 (1 + r + r^2 + r^3 + r^4) = \frac{1 \cdot (1 - 5^5)}{1 - 5} = 3125$$

۳

$$q^{\omega+1} = \frac{4}{1} \rightarrow \frac{4}{1} = 4 \rightarrow q = 2 \rightarrow t_4 = 1 \cdot 2^3 = 8 = B_4$$

$$10 \cdot \frac{4-1}{2} \Rightarrow \frac{4^3}{4} = 100 = 4 \rightarrow \frac{4^3}{4} (100) \cdot 4 + 1 = 32,000$$

۴

$$\frac{-4}{4} \text{ و } \frac{-10}{4} \text{ و } \dots \rightarrow a_{101} = -4 + \left(\frac{1}{4}\right)100 = -4 + 25 = 21$$

۵

$$t_n = 128 \cdot q^n = 1 \rightarrow q^n = \frac{1}{128} \rightarrow q = \frac{1}{2}$$

$$(a_1 + \gamma d)(a_1 + \lambda d) = (a_1 + \gamma d)^2 \rightarrow a_1^2 + 1 \cdot \lambda a_1 + \gamma d^2 = a_1^2 + 1 \cdot \lambda a_1 + \gamma d^2 \rightarrow \gamma \cdot d^2 + \gamma d a_1 = 0$$

$$\gamma d^2 = -\gamma d a_1 \rightarrow 1 \cdot d = -a_1 \rightarrow d = \frac{-a_1}{1}$$

f

$$(a_1 + d)(a_1 + \gamma d) = (a_1 + \gamma d)^2 \rightarrow a_1 + \lambda d a_1 + \gamma d^2 = a_1^2 + \gamma d a_1 + \gamma d^2 \rightarrow \gamma d a_1 = \gamma d^2 \Rightarrow d = a_1$$

$$\begin{aligned} t_1 &= a_1 + d = \gamma a_1 = \frac{1}{\gamma} \rightarrow a_1 = \frac{1}{\gamma} \\ t_2 &= a_1 + \gamma d = \gamma a_1 = \gamma \cdot \frac{1}{\gamma} = 1 \end{aligned} \quad \left. \begin{array}{l} \frac{1}{\gamma}, \frac{1}{\gamma}, \dots \rightarrow \frac{1}{\gamma} \cdot \gamma = \gamma \end{array} \right\}$$

y

$$\gamma t_1 q + \gamma t_1 q^2 + t_1 q^3 \rightarrow \gamma t_1 q + \gamma t_1 q^2 = \gamma t_1 q^3$$

$$x_1 q(\gamma + q^2) = \gamma x_1 q^3 \rightarrow \gamma + q^2 = \gamma q^2 \rightarrow q^2 - \gamma q^2 + \gamma = 0 \quad \left. \begin{array}{l} \Delta = 1^2 - 4 \cdot \gamma = 1 - 4\gamma \\ \gamma = \frac{1 \pm \sqrt{1-4\gamma}}{2} \end{array} \right\}$$

h

$$q_1 = \frac{\omega}{\gamma}, q_2 = \frac{1}{\gamma}, q_3 = -\frac{\gamma}{\gamma} \rightarrow \left(\frac{\omega}{\gamma} + x \right) \left(\frac{1}{\gamma} - \frac{\gamma}{\gamma} x \right) = \left(\frac{1}{\gamma} + x \right)^2$$

$$x^2 + \frac{1}{\gamma} x - \frac{\omega}{\gamma} = x^2 + \frac{1}{\gamma} x + \frac{1}{\gamma} \rightarrow \frac{1}{\gamma} x - \frac{\omega}{\gamma} = \frac{1}{\gamma} x + \frac{1}{\gamma}$$

$$\begin{aligned} \frac{1}{\gamma} x &= -\frac{\gamma}{\gamma} \rightarrow x = -\frac{\gamma}{\gamma} \rightarrow t_1 = \frac{\omega}{\gamma} - \frac{\gamma}{\gamma} = -\frac{\gamma}{\gamma} \\ t_2 &= \frac{1}{\gamma} + \frac{\gamma}{\gamma} = -\omega \\ t_3 &= -1 - \frac{\gamma}{\gamma} = -\frac{\gamma}{\gamma} \end{aligned} \quad \left. \begin{array}{l} q = \frac{-\omega}{-\gamma} = \frac{\omega}{\gamma} \end{array} \right\}$$

g

10

$$a_1 + a_1 r^2, a_1 r^2 = \gamma r^2 \rightarrow \gamma b_1 + \lambda b_1 + \gamma r^2 b_1 = \gamma r^2 b_1 \rightarrow \gamma r^2 b_1 = \gamma r^2 b_1 \rightarrow b = 1$$

$$b_1 \left(\frac{b_1 + \gamma d}{b_1 + \gamma d} \right) = b_1^2 + \gamma b_1 d + d^2 \rightarrow \gamma d b_1 = d^2 \rightarrow d = 0 \quad \left. \begin{array}{l} \frac{1}{\gamma} d = \gamma d \end{array} \right\} \rightarrow d = \gamma$$

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