

دہم سیران A - تکلیف نمبر ۱۰

» اہتمام خوار

امیر علی میرٹھی

سوال ۱

الف) $t_n = 3n^2 - 1 \rightarrow t_1 = 2, t_2 = 11, t_3 = 24, t_4 = 47, t_5 = 74$

ب) $t_n = \frac{2n+1}{n+3} \rightarrow t_1 = \frac{3}{5}, t_2 = \frac{5}{4}, t_3 = 1, t_4 = \frac{9}{7}, t_5 = \frac{11}{9}$

سوال ۲

الف) $t_n = \frac{(-1)^n}{\sqrt{n+3}} \rightarrow t_{13} = \frac{(-1)^{13}}{\sqrt{16}} = \frac{-1}{4} = -\frac{1}{4}$

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ب) $t_n = 2n - \left[\frac{n}{4}\right] \rightarrow t_{13} = 26 - \left[\frac{13}{4}\right] = 26 - 3 = 23$

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سوال ۳

الف) $t_n = 2n - 10 \rightarrow 2n - 10 < 0 \rightarrow 2n < 10 \rightarrow n < 5 \rightarrow$ جملہ ۴

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ب) $t_n = n^2 - 14n + 40 \rightarrow (n-4)(n-10) < 0 \rightarrow \frac{n}{+} \frac{4}{-} \frac{10}{+} \rightarrow$ جملہ ۷

سوال ۴

الف) $t_n = 2n - 14 \rightarrow 2n - 14 \leq 0 \rightarrow 2n \leq 14 \rightarrow n \leq 7 \rightarrow$ جملہ ۸

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ب) $t_n = n^2 - 12n + 27 \rightarrow (n-3)(n-9) < 0 \rightarrow \frac{n}{+} \frac{3}{-} \frac{9}{+} \rightarrow$ جملہ ۷

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سوال ۴

$$\left. \begin{array}{l} t_f = V \\ t_g = 22 \end{array} \right\} \begin{array}{l} t_f = V \\ t_g = t_f + \Delta d = 22 \rightarrow V + \Delta d = 22 \rightarrow \Delta d = 15 \rightarrow d = 3 \rightarrow t_r = 4 \end{array}$$

سوال ۵

$$t_n = n^r + 9n + 1 \xrightarrow{\frac{a > 0}{\min}} n = \frac{-b}{2a} = -2 \rightarrow t_r = -3 \rightarrow \min$$

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سوال ۶

$$t_n = n^r + 9n + 1 \xrightarrow{\frac{a > 0}{\min}} n = \frac{-b}{2a} = -2 \rightarrow t_r = -3 \rightarrow \min$$

$$\begin{array}{ccccccc} -4 & - & 1 & - & 1 & - & 4 \\ \hline -3 & & -1 & & +1 & & +3 \\ \hline +2 & & +2 & & +2 & & \end{array}$$

$$2a = 2 \rightarrow a = 1$$

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$$\left. \begin{array}{l} a_1 = -4 \rightarrow a_1 = (1)^r + b + C = b + C + 1 = -4 \rightarrow b + C = -5 \\ a_2 = -1 \rightarrow a_2 = (2)^r + 2b + C = 2b + C + 4 = -1 \rightarrow 2b + C = -5 \end{array} \right\} \begin{array}{l} b = -9 \\ C = 1 \end{array}$$

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$$t_n = (1 \times n)^r + 9n + 1 \rightarrow t_{10} = 100 + (-90) + 1 = 11$$

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$$\begin{array}{ccccccc} -4 & - & 1 & - & 1 & - & 4 \\ \hline +1 & & +0 & & +9 & & +1 \\ \hline +2 & & +2 & & +2 & & \end{array}$$

$$2a = 2 \rightarrow a = 1$$

$$C = -V$$

$$b = -1$$

سوال ۷

$$t_n = 2n^r + (-1n) - V$$

$$\left. \begin{array}{l} t_1 = 2 + b + C = -9 \rightarrow b + C = -11 \\ t_2 = 8 + 2b + C = -1 \rightarrow 2b + C = -9 \end{array} \right\} \begin{array}{l} b = -1 \\ C = -V \end{array}$$

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سوال ۹ - در بازه ها تناقض اشتراکات متناهی می شود که! عضو اشتراک متناهی باشد.

$$(-\infty, a+4] \cap [2a+1, +\infty) \rightarrow a+4 = 2a+1 \rightarrow a = 3$$

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الف) $3, 9, 15, \dots, 99$ $\frac{t_n - t_1}{d} + 1 = \frac{99 - 3}{6} + 1 = 16$ مقادير

ب) $5, 10, 15, \dots, 95$ $\frac{t_n - t_1}{d} + 1 = \frac{95 - 5}{5} + 1 = 19$

ج) $n(A \cap B) = 15, 30, 45, 60, 75, 90 \rightarrow 6$

د) $n(A \cup B) = n(A \cap B) = (33 + 19) - 6 = 46$

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$\frac{1}{2}$

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