

زنگنه

گروه دهم نیمه شب (هفته)

تکلیف شماره ۱۰

الف) $t_1 = 3 - 1 = 2$ $t_2 = 12 - 1 = 11$ $t_3 = 27 - 1 = 26$ $t_4 = 48 - 1 = 47$

$t_5 = 75 - 1 = 74$: پنج جمله اول: ۲, ۱۱, ۲۶, ۴۷, ۷۴

ب) $t_1 = \frac{3}{5}$ $t_2 = \frac{5}{6}$ $t_3 = \frac{7}{8}$ $t_4 = \frac{9}{10}$ $t_5 = \frac{11}{12}$

: پنج جمله اول: $\frac{3}{5}, \frac{5}{6}, \frac{7}{8}, \frac{9}{10}, \frac{11}{12}$

الف) $\frac{(-1)^{13}}{\sqrt{13+3}} = \frac{-1}{2} = -0.5 \rightarrow t_{13}$

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ب) $t_{13} = 2(13) - \left[\frac{13}{2}\right] = 26 - 3 = 23$

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

ب) $t_n = n^2 - 14n + 50 \rightarrow n^2 - 14n + 50 < 0 \Rightarrow (n-10)(n-5) < 0$ ۵ جمله

$\frac{+}{-} \frac{5}{10} \rightarrow (5, 10) \rightarrow 5, \dots, 9 \rightarrow 9 - 5 + 1 = 5$

الف) $2n - 16 \leq 0 \rightarrow 2n \leq 16 \rightarrow n \leq 8 \rightarrow$ ۸ جمله

-۴

ب) $n^2 - 12n + 27 \leq 0 \rightarrow (n-3)(n-9) \leq 0 \rightarrow$ ۷ جمله

$\frac{+}{-} \frac{3}{9} \rightarrow [3, 9] \rightarrow 3, \dots, 9$
 $9 - 3 + 1 = 7$

$t_2 = a + b = 7$ $t_3 = 3a + b$ ۴ - ۵

$t_4 = 9a + b = 22 \Rightarrow \begin{cases} a + b = 7 \\ 9a + b = 22 \end{cases} \Rightarrow \begin{cases} t_2 = 3(7) - 5 = 4 \\ a = 1 \rightarrow a = 1 \quad b = -5 \end{cases}$

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الف $\frac{9}{2} = 3 \rightarrow \frac{-b}{2a} \Rightarrow n=3 \rightarrow -V = t_3$ -9

ب $\frac{-b}{2a} \rightarrow -\frac{f}{2} \Rightarrow n=2 \rightarrow \text{مسألة } n, n=1 \rightarrow t_1 = 9$

$t_n = -3, -1, 1, 3, \dots$ $t_n = n^2 + bn + 1, b = -9$ -V
 $\begin{matrix} \xrightarrow{-3} & \xrightarrow{-1} & \xrightarrow{+1} & \xrightarrow{+3} \\ \xrightarrow{+2} & \xrightarrow{+2} & \xrightarrow{+2} & \end{matrix}$
 $t_n = n^2 - 9n + 1$
 $t_{10} = (10)^2 - 9(10) + 1 = 1$

$t_n = -9, -1, 1, 9, \dots$ $t_n = n^2 + bn - 9, b = -1$ -A
 $\begin{matrix} \xrightarrow{+8} & \xrightarrow{+9} & \xrightarrow{+10} \\ \xrightarrow{+4} & \xrightarrow{+4} & \end{matrix}$
 $t_n = n^2 - b - 9$

$2a+1 \geq a+5 \rightarrow a \geq 3 \rightarrow a \in [3, +\infty)$ -9

الف $3, 6, 9, \dots, 99$ $3n \leq 99 \rightarrow n \leq 33$ $\text{عدد } 33$ -10

ب $5, 10, 15, \dots, 100$ $5n \leq 100 \rightarrow n \leq 20$ $\text{عدد } 20$

ج $15, 30, 45, \dots, 90$ $15n \leq 90 \rightarrow n \leq 6$ $\text{عدد } 6$

1) $[3, 5] = 15$ $n(A \cup B) = n(A) + n(B) - n(A \cap B)$

$n(A \cup B) = 33 + 20 - 9 = 44$ $\text{عدد } 44$