

۱۹۱۵

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۱۵ کلاس: (پایه هفتم)

الف) $t_n = 3n^2 - 1$
 $n=1 \rightarrow 3(1) - 1 = 2$
 $n=2 \rightarrow 3(4) - 1 = 11$
 $n=3 \rightarrow 3(9) - 1 = 26$
 $n=4 \rightarrow 3(16) - 1 = 47$
 $n=5 \rightarrow 3(25) - 1 = 74$
 $\Rightarrow \{2, 11, 26, 47, 74, \dots\}$

ب) $t_n = \frac{2n+1}{n+2}$

$n=1 \rightarrow \frac{2(1)+1}{1+2} = \frac{3}{3} = 1$
 $n=2 \rightarrow \frac{2(2)+1}{2+2} = \frac{5}{4}$
 $n=3 \rightarrow \frac{2(3)+1}{3+2} = \frac{7}{5}$
 $n=4 \rightarrow \frac{2(4)+1}{4+2} = \frac{9}{6} = \frac{3}{2}$
 $n=5 \rightarrow \frac{2(5)+1}{5+2} = \frac{11}{7}$

$n=1 \rightarrow \frac{2}{3} = 1$

$n=2 \rightarrow \frac{5}{4}$

$n=3 \rightarrow \frac{7}{5}$

$n=4 \rightarrow \frac{9}{6} = \frac{3}{2}$

$n=5 \rightarrow \frac{11}{7}$

$\left\{ \frac{2}{3}, \frac{5}{4}, \frac{7}{5}, \frac{9}{6}, \frac{11}{7}, \dots \right\}$

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

ب) $t_n = 2n - \left[\frac{n}{2} \right]$

$t_{13} = 2(13) - \left[\frac{13}{2} \right] = 26 - 6 = 20$
 $\left[\frac{13}{2} \right] = 6$

الف) $t_n = 2n - 10 \Rightarrow 2n - 10 < 0 \Rightarrow 2n < 10 \Rightarrow n < 5 \Rightarrow \{1, 2, 3, 4\} \Rightarrow \boxed{14}$

ب) $t_n = n^2 - 12n + 2$

$(n-1)(n-2) < 0 \Rightarrow \frac{2}{n-1} > 0 \Rightarrow (2, 1) \Rightarrow 2, 4, 6, 8, 9 \Rightarrow \boxed{15}$

الف) $t_n = 2n - 14 \Rightarrow \frac{2}{n-7} > 0 \Rightarrow 2n - 14 < 0 \Rightarrow 2n < 14 \Rightarrow n < 7 \Rightarrow \{1, 2, 3, 4, 5, 6\} \Rightarrow \boxed{18}$

ب) $t_n = n^2 - 12n + 27$

$(n-3)(n-9) \leq 0 \Rightarrow \frac{3}{n-3} \geq 0 \Rightarrow [3, 9] \Rightarrow 3, 4, 5, 6, 7, 8, 9 \Rightarrow \boxed{15}$

الف) $t_2 = 7$
 $t_9 = 22$
 $t_3 = ? \rightarrow t_2 = 7 \rightarrow 22 - 7 = 15 \rightarrow \boxed{15}$

$t_3 = ? \rightarrow t_2 = 7 \rightarrow 22 - 7 = 15 \rightarrow \boxed{15}$

الف) $t_n = n^2 - 4n + 2$ $\hookrightarrow \min \rightarrow \frac{-b}{2a} \rightarrow \frac{4}{2} = 2 \rightarrow$ جواب: $9 - 18 + 2 = -7$ -7 ۱۱۵ ب) $t_n = n^2 + 4n + 1$ $\hookrightarrow \min \rightarrow \frac{-b}{2a} = \frac{-4}{2} = -2 \rightarrow$ حدود $n > 1$ در این مقدار همان جواب اول است $\hookrightarrow 2 - 8 + 1 = -5$ -5	۶
$t_n = 1, -5, -7, -9, -11, -13, \dots$ $\begin{matrix} & \cup & \cup & \cup & \cup & \cup \\ -5 & -7 & -9 & -11 & -13 \\ \cup & \cup & \cup & \cup & \cup \\ +2 & +2 & +2 & +2 & +2 \end{matrix}$ $a=2 \rightarrow a=1$ $c=1$ $a n^2 + b n + c \rightarrow n^2 + b n + 1 \rightarrow n=1 \rightarrow 1 + b + 1 = -5 \rightarrow b = -7$ $n^2 - 4n + 1 \rightarrow$ عددی زوج $\rightarrow (10)^2 - 4(10) + 1 = 100 - 40 + 1 = 61$ 61 ۵	۷
$t_n = -4, -1, 8, 21, \dots$ $\begin{matrix} & \cup & \cup & \cup & \cup \\ -1 & 8 & 21 & 36 \\ \cup & \cup & \cup & \cup \\ +5 & +9 & +13 & +17 \end{matrix}$ $c = -7$ $a=2 \rightarrow a=2 \rightarrow 2n^2 + b n - 7 \rightarrow n=1 \rightarrow 2 + b - 7 = -4 \rightarrow b = -1$ $t_n \rightarrow 2n^2 - 1n - 7$ جواب ۵	۸
$(-\infty, a + \varepsilon], [2a + 1, +\infty)$ $2a + 1 \geq a + \varepsilon \rightarrow a \geq 3 \rightarrow [3, +\infty)$ ۵	۹
افزا بر ۳ خنثی و غیره $\rightarrow \left[\frac{100}{3}\right] = 33$ جواب $\left[\frac{100}{8}\right] = 12$ جواب $\left[\frac{100}{18}\right] = 5$ جواب $(33 + 12 + 5) - 4 = 46$ جواب ۵	۱۰