

الف) $t_1 = 3 \times 1 - 1 = 2$ $t_2 = 3 \times 2 - 1 = 5$ $t_3 = 3 \times 3 - 1 = 8$ $t_4 = 3 \times 4 - 1 = 11$ $t_5 = 3 \times 5 - 1 = 14$	$2, 5, 8, 11, 14$	۱
ب) $t_1 = \frac{3 \times 1 + 1}{1 + 1} = \frac{4}{2} = 2$ $t_2 = \frac{3 \times 2 + 1}{2 + 1} = \frac{7}{3}$ $t_3 = \frac{3 \times 3 + 1}{3 + 1} = \frac{10}{4} = \frac{5}{2}$ $t_4 = \frac{3 \times 4 + 1}{4 + 1} = \frac{13}{5}$ $t_5 = \frac{3 \times 5 + 1}{5 + 1} = \frac{16}{6} = \frac{8}{3}$	$\frac{4}{2}, \frac{7}{3}, \frac{5}{2}, \frac{13}{5}, \frac{8}{3}$	۲
الف) $t_n = \frac{(-1)^n}{\sqrt{n+2}}$ $\rightarrow t_{12} = \frac{(-1)^{12}}{\sqrt{12+2}} = \frac{1}{\sqrt{14}}$ ب) $t_n = 2n - \left[\frac{n}{2} \right] \rightarrow t_{12} = 2 \times 12 - \left[\frac{12}{2} \right] = 24 - 6 = 18$		۳
الف) $t_n = 2n - 1 \rightarrow 2n - 1 < 0 \rightarrow 2n < 1 \rightarrow n < \frac{1}{2} \rightarrow$ <u>جواب: ۰</u> ب) $t_n = n^2 - 12n + 40 \rightarrow (n-4)(n-10) < 0 \rightarrow \frac{4}{+} \frac{10}{-} \rightarrow 4, 5, 6, 7, 8, 9$ <u>جواب: ۵</u>		۴
الف) $t_n = 2n - 14 \rightarrow 2n - 14 < 0 \rightarrow n < 7 \rightarrow$ <u>جواب: ۶</u> ب) $t_n = n^2 - 12n + 27 \rightarrow (n-3)(n-9) < 0 \rightarrow \frac{3}{+} \frac{9}{-} \rightarrow 3, 4, 5, 6, 7, 8, 9$ <u>جواب: ۷</u>		۵
$t_4 = 7$ $t_9 = 22$ $\rightarrow d = \frac{t_9 - t_4}{9 - 4} = \frac{22 - 7}{5} = 3$ $\rightarrow t_7 = t_4 - d = 7 - 3 = 4$		۵

$$a) t_n = n^2 - 4n + 2 \rightarrow \min \text{ نقطه} \rightarrow n = \frac{-b}{2a} = \frac{4}{2} = 2 \rightarrow t_2 = 2^2 - 4 \times 2 + 2 = -2$$

$$b) t_n = n^2 + t_{n-1} + 1 \rightarrow \min \text{ نقطه} \rightarrow n = \frac{-b}{2a} = \frac{-1}{2} = -\frac{1}{2} \rightarrow t_1 = 1 + (-\frac{1}{2}) + 1 = \frac{3}{2}$$

در n نزدیک ترین عدد به $-\frac{1}{2}$ انتخاب می کنیم.

$$t_n = -4, -7, -1, -7, -4, \dots \quad a = \frac{4}{4} = 1 \rightarrow t_1 = -4 = 1 + b + 1$$

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

$$C = \text{مجموعه} = 1 \quad b = -4$$

$$t_n = n^2 - 4n + 1 \rightarrow t_1 = 1 - 4 \times 1 + 1 = -2$$

$$t_n = -4, -1, 1, 4, \dots \quad a = \frac{4}{4} = 1 \rightarrow t_1 = -4 = 1 + b - 1$$

$\begin{array}{ccccccc} & & \curvearrowright & & \curvearrowright & & \curvearrowright \\ & +5 & & +9 & & +13 \\ & \curvearrowright & & \curvearrowright \\ & +4 & & +4 \end{array}$

$$C = \text{مجموعه} = -1 \quad b = -1$$

$$t_n = 2n^2 - n - 1$$

$$\text{بدون استرین} \rightarrow 2a+1 > a+1 \rightarrow a > 0$$

$$a) \left[\frac{100}{4} \right] = 25 \text{ عدد}$$

$$b) \left[\frac{100}{5} \right] = 20 \text{ عدد}$$

$$c) \left[\frac{100}{15} \right] = 6 \text{ عدد}$$

$$d) 25 + 20 - 6 = 39$$