

$t_n = 1, 0, 1, 2, \dots$ $\begin{matrix} 1 & 0 & 1 & 2 \\ + & + & + & + \\ 1 & 1 & 1 & 1 \end{matrix}$ $a = \frac{d}{r} = \frac{1}{r}$ $t_n = \frac{r}{r}n^2 + bn$ $1 = \frac{r}{r} + b \Rightarrow b = -\frac{1}{r}$ $t_n = \frac{r}{r}n^2 - \frac{1}{r}n$ $\Rightarrow t_1 = \frac{300 - 10}{r} = \frac{290}{r} = 140$	1
$t_n = 0, 1, 2, 3, \dots$ $\begin{matrix} 0 & 1 & 2 & 3 \\ + & + & + & + \\ 1 & 1 & 1 & 1 \end{matrix}$ $a = \frac{d}{r} = \frac{1}{r}$ $t_n = \frac{r}{r}n^2 + bn$ $0 = \frac{r}{r} + b \Rightarrow b = -\frac{1}{r}$ $t_n = \frac{r}{r}n^2 - \frac{1}{r}n$ $\Rightarrow 0 = \frac{n^2 - n}{r} \Rightarrow 11 = (n-1)n$ $\Rightarrow n = 11 \rightarrow$ شکل یازدهم	2
$t_n = 0, 1, 2, 3, 4 \Rightarrow t_n = n^2 - 2 \Rightarrow t_{11} = 11^2 - 2 = 119$ $t_n = 0, 9, 12$ $d = 3 \Rightarrow t_n = 3n + 1 \Rightarrow t_{11} = 3 \times 11 + 1 = 34$	3
$a_n = \frac{(-1)^n}{n}$ $\left. \begin{matrix} \rightarrow \min \Rightarrow n=1 \Rightarrow a_1 = \frac{(-1)^1}{1} = -1 \\ \rightarrow \max \Rightarrow n=2 \Rightarrow a_2 = \frac{(-1)^2}{2} = \frac{1}{2} \end{matrix} \right\} \Rightarrow \max - \min = \frac{1}{2} + 1 = \frac{3}{2}$	4
$b_n = (-1)^n = V_n$ $a_n = -0.2n + 12$ $b_r = a_K$ $\Rightarrow (-1)^r - 1 = -0.2K + 12 \Rightarrow -27 - 1 = -0.2K + 12$ $\Rightarrow 0.2K = 38 \Rightarrow K = 19$	5

$$\left. \begin{array}{l} t_1 - t_0 = 1r \\ t_1 - t_0 = rd \end{array} \right\} \Rightarrow rd = 1r \Rightarrow d = r$$

$$t_4 - t_1 = 3d = 3r$$

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$$\left. \begin{array}{l} a_r = 7 \\ a_{10} = 10 \end{array} \right\} \Rightarrow a_1 - a_r = 1 \Rightarrow rd = 1 \Rightarrow d = 1 \Rightarrow a_r = r + d_1 \Rightarrow a_1 = 7, a_{10} = a_1 - d \Rightarrow a_{10} = 11$$

$$\left. \begin{array}{l} a_1 = b_1 = 7 \\ a_{10} = b_{10} = 11 \end{array} \right\} \Rightarrow b_r - b_1 = 1 \Rightarrow d = 1 \Rightarrow b_n = 1n - 6$$

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$$t_n = \frac{r}{0} + \frac{r}{r} + \frac{r}{r} + \frac{r}{r} \Rightarrow t_n = \frac{r(n-1)}{r(n+r)}$$

$$t_n < \frac{r}{r} \Rightarrow \frac{r(n-1)}{r(n+r)} < \frac{r}{r} \Rightarrow 1n-1 < 1n+1 \Rightarrow n < 1r$$

$$\Rightarrow n < 9, 8$$

$$n: 1, 2, 3, 4, 5, 6, 7, 8, 9$$

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$$t_n = 0, 9, 9, 9, 9, \dots$$

$$\left. \begin{array}{l} c = 0 \\ a = \frac{d}{r} = \frac{r}{r} \end{array} \right\} \Rightarrow t_n = an + bn \Rightarrow 9 = \frac{r}{r} + b \Rightarrow b = \frac{r}{r}, d \Rightarrow t_n = \frac{r}{r}n + \frac{r}{r}n$$

$$t_n = An^r + Bn$$

$$rA + \delta B = \frac{9}{r} + \frac{r}{r}, \delta = r \checkmark$$

$$\frac{r}{r}n + \frac{r}{r}n = An^r + Bn \Rightarrow A = \frac{r}{r}, B = \frac{r}{r}$$

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$$t_n = -\frac{r}{r} - \frac{r}{r} - \frac{r}{r} - \frac{r}{r}, \dots$$

$$a = \frac{d}{r} = 1$$

$$t_n = n^r + bn \cdot 9$$

$$\Rightarrow -9 = +b - 9$$

$$\Rightarrow b = -1$$

$$t_n = n^r - n - 9$$

$$\left. \begin{array}{l} a_r = 11 \\ a_1 = 11 \end{array} \right\} \Rightarrow r \cdot 11 = rd \Rightarrow d = 1 \Rightarrow a_n = 1n + 11$$

$$a_k = t_k$$

$$\Rightarrow \delta x + 11 = x^r - x - 9$$

$$\Rightarrow x^r - x - 20 = 0$$

$$(x-9)(x+1) = 0 \Rightarrow x = 9 \checkmark$$

$$x = -3 \times 0 \times 5 \times 6$$

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