

$t_n = 1, 0, 11, 22, \dots$ $\begin{matrix} 1 & 0 & 11 & 22 \\ + & + & + & + \\ 1 & 1 & 11 & 11 \end{matrix}$ $a = \frac{d}{r} = \frac{10}{1} = 10$ $t_n = \frac{r}{r}n^2 + bn$ $1 = \frac{1}{1} + b \Rightarrow b = -\frac{1}{1}$ $t_n = \frac{1n^2 - n}{1} \Rightarrow t_{11} = \frac{100 - 10}{1} = \frac{90}{1} = 90$ ✓ (۲)	۱
$t_n = 0, 1, 3, 6, \dots$ $\begin{matrix} 0 & 1 & 3 & 6 \\ + & + & + & + \\ 1 & 1 & 1 & 1 \end{matrix}$ $a = \frac{d}{r} = \frac{1}{1} = 1$ $t_n = \frac{1n^2}{1} + bn$ $0 = \frac{1}{1} + b \Rightarrow b = -\frac{1}{1}$ $t_n = \frac{n^2 - n}{1} \Rightarrow 0 = \frac{n^2 - n}{1} \Rightarrow 11 = (n-1)n$ $\Rightarrow n = 11$ ✓ نکته: یازدهم (۲)	۲
$t_n = 0, 1, 3, 6 \Rightarrow t_n = 1n - 1 \Rightarrow t_{11} = 11 - 1 = 10$ ✓ $t_n = 0, 9, 12$ $d = 3 \Rightarrow t_n = 3n + 1 \Rightarrow t_{11} = 3 \times 11 + 1 = 34$ ✓ (۲)	۳
$a_n = \frac{(-1)^n}{n}$ $\begin{cases} \min \Rightarrow n=1 \Rightarrow a_1 = \frac{(-1)^1}{1} = -1 \\ \max \Rightarrow n=2 \Rightarrow a_2 = \frac{(-1)^2}{2} = \frac{1}{2} \end{cases} \Rightarrow \max - \min = \frac{1}{2} + 1 = \frac{3}{2}$ ✓ (۲)	۴
$b_n = (-1)^n = V_n$ $a_n = -0.5n + 22$ $b_r = a_k$ $\Rightarrow (-1)^r - 1 = -0.5k + 22 \Rightarrow -27 - 21 = -0.5k + 22$ $\Rightarrow 0.5k = 70 \Rightarrow k = 14$ ✓ (۲)	۵

$$\left. \begin{array}{l} t_1 - t_0 = 12 \\ t_1 - t_0 = rd \end{array} \right\} \Rightarrow rd = 12 \Rightarrow d = 12$$

$$t_4 - t_1 = 3d = 36$$

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

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

$$t_n = \frac{r}{0} + \frac{r}{1} + \frac{r}{2} + \frac{r}{3} + \dots + \frac{r}{n-1} \Rightarrow t_n = \frac{r(n-1)}{n+1}$$

$$t_n < \frac{r}{r} \Rightarrow \frac{r(n-1)}{n+1} < \frac{r}{r} \Rightarrow n-1 < n+1 \Rightarrow n < 12$$

$$\Rightarrow n < 9, d$$

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

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

$$a = \frac{r}{r} = \frac{r}{r} \Rightarrow t_n = an + bn \Rightarrow 9 = \frac{r}{r} + b \Rightarrow b = \frac{r}{r} - 1 \Rightarrow t_n = \frac{r}{r}n + \frac{r}{r}n$$

$$A = -\frac{r}{r} \quad rA + \delta B = -\frac{r}{r} + \frac{r}{r} = \frac{r}{r} = \frac{r}{r} \Rightarrow t_n = An + Bn$$

$$B = \frac{1}{r} \quad rA + \delta B = \frac{r}{r} + \frac{r}{r} = \frac{r}{r} \Rightarrow \frac{r}{r}n + \frac{r}{r}n = An + Bn \Rightarrow A = \frac{r}{r}, B = \frac{r}{r}$$

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

$$\left. \begin{array}{l} a_r = 11 \\ a_1 = 11 \end{array} \right\} \Rightarrow r - r = rd \Rightarrow d = 0 \Rightarrow a_n = 0n + 11$$

$$a_k = t_k$$

$$\Rightarrow 0k + 11 = 0k - 9$$

$$\Rightarrow 0k - 9k - 11 = 0$$

$$(k-9)(k+1) = 0 \Rightarrow k = 9$$

$$k = 9$$