

$$a_{10} = 4 \times 10 + 1 = \boxed{41}$$

(←

$$\boxed{4n+1}$$

① (الف)

② (الف)

$$a_{10} = 4 \times 10 + 1 = 41 \rightarrow S_n = \frac{n}{2}(a_1 + a_n) = \frac{1}{2} (4 + 41) = \boxed{22.5}$$

$a_1 = 4$
 $a_{10} = 41$

$$a_{10} = 4 + a_9 + a_8 + a_7 + a_6 + a_5 + a_4 + a_3 + a_2 + a_1 = 8 \leftarrow \text{شماره آخر} = 4 \times 10 = 40$$

$$4a_{10} + 10d = (4 \times 10) + 1 = \boxed{41}$$

$$a_{10} = 4 \times 10 + 1 = 41$$

$$1 + \sqrt{3}, 2, 3 - \sqrt{3}, \dots$$

دنباله حسابی

$$t_n = a_1 + (n-1)d$$

$$t_{10} - t_{11} = 10d \rightarrow 2(1 - \sqrt{3}) = 2 - 2\sqrt{3}$$

$$a_n = 2^n, 3 \times 2^n, 4 \rightarrow 2^n, 3 \times 2^n, 4 \rightarrow d = 3 \times 2^n - 2^n = 2^n \quad xy = 8$$

$$b_n = x, y, z$$

$$z = \frac{x + 2x + 1}{2} \rightarrow z = 3x + 1$$

$$3 \times 2^n + 2 \times 2^n = 4 \rightarrow x + 1 = y$$

$$xy = 1 \times 3 = 3$$

$$y = (x+1) + 1 = 3$$

$$2n - 1 = \frac{2n + 1}{2}$$

$$2n - 1 = 1n - 1$$

$$2 = 2n$$

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

$$2n - 1, 1n - 1, 2n, \dots$$

$$a_n = a_1 + (n-1)d$$

$$a_n = -1 + 2 = \boxed{1}$$

$$a_n = 2, 4, 6, \dots \rightarrow 2n$$

$$b_n = 2, 4, 6, \dots \rightarrow 2n$$

$$a_n = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100$$

$$a_{10} = 2 \times 10 + 1 = \boxed{21}$$

$$b_{10} = 2 \times 10 - 1 = \boxed{19}$$

$$4n - 1 \leq 41$$

$$4n \leq 42$$

$$n \leq 10.5 \rightarrow n = 10$$

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$$\begin{aligned}
 & \overset{a+d}{\uparrow} \overset{a_1+d}{\uparrow} \\
 & a_1 + a_r + a_r = 21 \\
 & 2a_1 + 2d = 21 \\
 & a + d = 10.5 \\
 & a_1 = 10.5 - 11 = -0.5 \\
 & a_r = -0.5 + 2d = 19
 \end{aligned}$$

$$\begin{aligned}
 & a_1 + a_r + a_r = 1.0 \\
 & 2a_1 + 2d = 1.0 \\
 & - (2a_1 + 2d = 21) \\
 & \hline
 & 2d = 19 \\
 & d = 9.5 \\
 & \frac{V}{a_1} = \frac{V}{-0.5} = -\frac{1}{0.5}
 \end{aligned}$$

$$\begin{aligned}
 & a_r - a_r + a_1 = \\
 & \frac{2d}{2} - V + (-0.5) = V \\
 & d - 10.5 - 0.5 = 10.5 \\
 & d = 21.5
 \end{aligned}$$

$$\begin{aligned}
 & a_r = a_1 + 2d \\
 & \downarrow \\
 & 2 + (2 \times 9.5) = 19
 \end{aligned}$$

$$\begin{aligned}
 & a_r + a_r = 2d \\
 & a_1 + 2d + a_1 + 2d = 2d \\
 & 2a_1 + 4d = 2d \\
 & 2a_1 + 2d = 0 \\
 & a_1 + d = 0 \\
 & d = -a_1
 \end{aligned}$$

$$\begin{aligned}
 & \overset{a+d}{\uparrow} \overset{a_1+d}{\uparrow} \\
 & a_1 + a_r + a_r = 10 \\
 & 2a_1 + 2d = 10 \\
 & a + d = 5 \xrightarrow{\times 2} 2a + 2d = 10 \\
 & a = 5
 \end{aligned}$$

$$\begin{aligned}
 & \frac{a_r}{a_r} = 2 \quad \frac{a_1 + 19d}{a_1 + 4d} = \frac{a_1 + 19a}{a_1 + 11a} = \frac{19d}{11d} = \frac{19}{11} \\
 & \frac{S_9}{S_r} = 2 \rightarrow \frac{9}{11} \frac{(11a + 11d)}{(11a + 11d)} = 2 \\
 & 9a + 9d = 22a + 22d \\
 & 9d = 13a \rightarrow d = \frac{13}{9}a
 \end{aligned}$$

$$\begin{aligned}
 & a_1 = 11 \rightarrow 4d = 22 \\
 & a_r = 20 \rightarrow d = 5.5 \\
 & b_1 = 21 \\
 & b_f = 22 \rightarrow 2d = -10 \\
 & d = -5
 \end{aligned}$$

$$\begin{aligned}
 & a_n = 11 + (n-1)f \\
 & b_f = a_f = 11 + (f \times f) = 22
 \end{aligned}$$

$$d = \frac{b-a}{k+1} \rightarrow -5 = \frac{-20}{k+1}$$

$$\begin{aligned}
 & -5k - 5 = -20 \\
 & -5k = -15 \\
 & k = 3
 \end{aligned}$$

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