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①

$$\left. \begin{array}{l} a_1 = f \\ a_5 = 41 \end{array} \right\} \begin{array}{l} 2d = 21 \\ d = 10.5 \end{array} \quad a_n = f + (n-1)V = 2.1$$

$$f + 10.5n - 10.5 = 2.1 \quad 10.5n = 12.6 \quad n = 1.2$$

(۱۲)

$$1.1, 1.1, 11.0, \dots, 99.1$$

$$\frac{99.1 - 1.1}{10.5} + 1 = 12.6$$

②

③

$$a_n + a_n = 7 \rightarrow a_1 + 14d + a_1 + 14d = 2a_1 + 28d$$

$$a_{n+1} + a_{n+2} + a_{n+3} = -9n + 12 \rightarrow n=0 \rightarrow a_1 + a_2 + a_3 = 12$$

$$a_{11} + a_n = \left(\frac{12}{2} \right) + \left(\frac{-9n + 12}{2} \right) = -\frac{9n}{2} + 12$$

$$n=1 \rightarrow a_2 + a_2 + a_2 = 12 \rightarrow 3a_2 = 12 \rightarrow a_2 = 4$$

$$2a_1 + 14d = 12 \rightarrow a_1 + 7d = 6$$

$$2a_1 + 14d = 12 \rightarrow a_1 + 7d = 6$$

$$a_1 + 7d = 6 \rightarrow a_1 = 6 - 7d$$

$$a_1 + 7d = 6 \rightarrow a_1 = 6 - 7d$$

$$a \rightarrow a - 7 = 6$$

$$a = 13$$

$$a_{11} + a_n = a_1 + a_n \rightarrow r^{11} - r + r^n - 1 = r \times r \times r^x \rightarrow r^{11} - r^2 \times r^n - r = 0 \rightarrow$$

$$(r^{11} - r)(r^n + 1) = 0 \rightarrow r^n = 1 \rightarrow n = 1$$

④

$$a_{11} + a_n + a_r = r \times r^n + r^x - r = r^6 - r^2 + r^2 - 1 + r^2 = r^6$$

⑤

$$a_{11} - a_{10} = 0 \rightarrow a_1 + 11d - (a_1 + 10d) = d = 0 \rightarrow d = 0$$

$$a_1 + a_{11} = 20 \rightarrow a_1 + 10d + a_1 + 10d = 20 \rightarrow 2a_1 + 20d = 20 \rightarrow a_1 + 10d = 10$$

$$a_{11} = 7 \rightarrow a_1 + 10d = 7$$

$$a_1 + 10d = 7$$

$$a_1 = 7 - 10d$$

$$a_1 = 7 - 10d$$

⑥

$$= 37/10$$

$$\begin{aligned}
 & (2a + 1 \cdot d = \frac{1}{r} (2a + r \cdot d)) \\
 & 12a + r \cdot d = 2a + r \cdot d \\
 & 1 \cdot a = d \rightarrow d = r \cdot a \\
 & \frac{a_r}{a} = \frac{a+d}{a} = \frac{a+ra}{a} = \frac{ra}{a} = r
 \end{aligned}$$

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$$t_n - t_{n-r} = 10 \rightarrow t_r - t_1 = 10 \rightarrow r \cdot d = 10$$

10

$$\begin{aligned}
 & \frac{t_r - t_1}{t_r} = \frac{(a + r \cdot d)^r - (a + 1 \cdot d)^r}{a + r \cdot d} \\
 & \frac{r \cdot d + r \cdot a \cdot d}{a + r \cdot d} = \frac{r \cdot d (a + r \cdot d)^{r-1} - (a + 1 \cdot d)^r}{a + r \cdot d} = 1 \times 10 = 10
 \end{aligned}$$

10

$$d = \frac{r + \sqrt{r} - (r - 15\sqrt{r})}{12} = \frac{r + \sqrt{r} + 15\sqrt{r}}{12} = \sqrt{r}$$

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$$n \cdot d = r \cdot n - r$$

$$d = \frac{r \cdot n - r}{r \cdot n - 1} = \frac{10}{r \cdot n - 1}$$

$$a_{n+1} = r + (n) \cdot d = 11$$

12

$$11n - 9 = 10n$$

$$\leftarrow \frac{10n}{r \cdot n - 1} = 9$$

$$\leftarrow r + \frac{10n}{r \cdot n - 1} = 11$$

$$r \cdot n = 9$$

$$n = r$$

10

$$a_n + a_{n+r} = a_r + a_{11} = a_n + a_{11}$$

$$\frac{a_1}{a_r} = r \rightarrow \frac{a_1 + r \cdot d}{a_1 + r \cdot d} = r \rightarrow a_1 + r \cdot d = r \cdot a_1 + r \cdot d \rightarrow -r \cdot a_1 = r \cdot d$$

$$a_1 + (n-1) \cdot d = 0$$

$$d = -a$$

$$a_1 + a_1 - a_1 \cdot n = 0 \rightarrow r \cdot a_1 = a_1 \cdot n \rightarrow n = r$$

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