

$$5, 9, 13, 17, \dots \quad d=4 \quad a_1=5 \quad a_n=4n+1$$

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

$$9, 10, 11, 12, \dots \quad d=1 \quad a_1=9 \quad t_n=4n+1 \quad a_{10}=4 \times 10 + 1 = 41$$

$$S_{10} = 10(9+41) = 10 \times 50 = 500$$

$$4 \times 10 = 40 \rightarrow a_{10}$$

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

$$4(4 \times 10 + 1) + (4 \times 10 + 1) = 40 + 1 = 41$$

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

$$d=1-\sqrt{2} \quad a_1=1+\sqrt{2} \quad t_n=(1-\sqrt{2})n + 2\sqrt{2}$$

$$t_{10} = (1-\sqrt{2})10 + 2\sqrt{2}$$

$$= 10 - 10\sqrt{2} + 2\sqrt{2}$$

$$= 10 - 8\sqrt{2}$$

$$t_{10} = 10(1-\sqrt{2}) + 2\sqrt{2}$$

$$= 10 - 10\sqrt{2} + 2\sqrt{2}$$

$$= 10 - 8\sqrt{2}$$

$$t_{10} - t_{10} = 10 - 10\sqrt{2} - 10 + 10\sqrt{2}$$

$$= 10 - 10\sqrt{2}$$

$$a_n = \omega^x, \omega^x \times \omega^x, \omega^y$$

$$\omega^x \times \omega^x = \omega^y \Rightarrow \omega^x \times \omega^x = \omega^y$$

$$\omega^y = \omega^x \times \omega^x = \omega^{2x}$$

$$\omega^y = \omega^x \times \omega^x = \omega^{2x+1}$$

$$b_n = x, y, z$$

$$y-x = z-y$$

$$y = z-x$$

$$z-x = 2x+1$$

$$xy = 1 \times 2 = 2$$

$$y = 2x$$

$$x=1$$

$$2x-1, 2x-1, 4x, \dots \quad x(\frac{1}{x})-1, x(\frac{1}{x})-1, 4x(\frac{1}{x}), \dots$$

$$2x-1-2x+1 = 4x-2x+1$$

$$2 = 4x+1 \quad 2x=2 \quad x=\frac{1}{2}$$

$$-1, 0, 2$$

$$d=2 \quad a_1=-1$$

$$a_n=2n-1$$

$$a_{10}=2 \times 10 - 1 = 19$$

$$1, 2, 3, \dots$$

$$d=1 \quad a_1=1$$

$$a_n=1n+1$$

$$t_{n+1}=t_n-1$$

$$t_n=t_m-1$$

$$n=\frac{t_m-1}{1} \leq 10$$

$$m \leq 11$$

$$m=1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12$$

$$m=2 \rightarrow 2 \times 2 - 1 = 3$$

$$m=3 \rightarrow 3 \times 3 - 1 = 8$$

$$m=4 \rightarrow 4 \times 4 - 1 = 15$$

$$m=5 \rightarrow 5 \times 5 - 1 = 24$$

$$m=6 \rightarrow 6 \times 6 - 1 = 35$$

$$m=7 \rightarrow 7 \times 7 - 1 = 48$$

$$m=8 \rightarrow 8 \times 8 - 1 = 63$$

$$1, 2, 3, \dots$$

$$d=1 \quad b_1=1$$

$$b_n=1n-1$$

$$a_1+a_2+a_3=11$$

$$a_1+a_2+d+a_3+rd=11 \quad a_1+d=11$$

$$a_1+a_2+a_3=10$$

$$a_1+a_2+rd+a_3+rd=10 \quad a_1+rd=10$$

$$a_2-a_1+a_3=a_1+rd-a_1-d+a_3=a_1+d=11-10=1$$

$$\frac{a_2-a_1+a_3}{a_1} = \frac{1}{1} = 1$$

$$d=1 \quad a_1=-1$$

$$a_1 + a_r + a_v = a_1 + a_1 + d + a_1 + r d = 3a_1 + r d = 10 \quad a_1 + d = 2$$

(1)

$$a_r + a_d = a_1 + r d + a_1 + r d = 2a_1 + v d = 20 \quad \begin{cases} a_1 + d = 2 \\ 2a_1 + v d = 20 \end{cases} \quad \begin{cases} r a_1 + r d = 10 \\ v a_1 + v d = 20 \end{cases}$$

(2)

$$2d = 10 \quad d = 5 \\ a_1 = 2$$

$$r, a, \lambda, \dots$$

$$a_n = r^{n-1}$$

$$a_1 = r^0 \cdot 10 = 10 = 20$$

$$S_9 = \frac{9}{r} (ra + \lambda d)$$

$$\frac{9}{r} (ra + \lambda d) = \frac{rv}{r} (ra + rd)$$

(3)

(4)

$$9S_9 = 9 \times \frac{9}{r} (ra + rd)$$

$$9a + r^9 d = r^9 a + r^9 d$$

$$9d = 10a \quad d = 10a$$

$$a_r = a_1 + 10d = a + 10(10a) = a + 100a = 101a$$

$$\frac{a_r}{a_v} = \frac{r^9 d}{10^9 d} = r^9$$

$$a_v = a + 9d = a + 10a = 11a$$

$$a_1 = 11 \quad a_v = a_1 + 9d = 10$$

$$11 + 9d = 10$$

$$9d = -1 \quad d = -\frac{1}{9}$$

$$a_n = r^n + v$$

$$a_r = r^9 + v = 10$$

(5)

$$a_1 = 10$$

$$a_n = 10$$

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

$$a_r = r^n + r d = 10 - \frac{10}{n-1}$$

$$10 - \frac{10}{n-1} = 10$$

$$\frac{10}{n-1} = 10$$

$$n-1 = \frac{10}{10} = 1 \quad n = 2$$

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

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مكرر، متكرر