

$$t_n = 5, 9, 13, 17$$

$\begin{array}{c} \curvearrowright \quad \curvearrowright \\ +4 \quad +4 \end{array}$

$$t_n = 4n + 1 \quad \Leftarrow \quad t_n = a_n + (n-1)d \quad (\text{الف})$$

$$t_{10} = 4 \times 10 + 1 = 41 \quad (\text{ب})$$

$$t_n = 9, 10, 11, 12$$

$\begin{array}{c} \curvearrowright \quad \curvearrowright \\ +1 \quad +1 \end{array}$

$$a_n = 4n + 1 \Rightarrow a_{10} = 41$$

$$S_{10} = \frac{10}{2} (9 + 12) = 105 \quad \Leftarrow \quad S_n = \frac{n}{2} (a_1 + a_n) \quad (\text{الف})$$

$$t_{31} = t_1 + 30d \Rightarrow 9 + 120 = 129$$

$$3t_{31} = 387$$

$$\Leftarrow \quad a_1 + a_{31} + a_{31} = 2t_{31} \Rightarrow t_{31} = \frac{2t_{31}}{2} = t_{31}$$

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

$\begin{array}{c} \curvearrowright \\ +1 \end{array}$

$$d = 1 - \sqrt{3}$$

$$T_n = (1 + \sqrt{3}) + (n-1)(1 - \sqrt{3}) \Rightarrow$$

$$T_n = n(1 - \sqrt{3}) + 1 + \sqrt{3}$$

$$T_{10} - T_{10} = 10 + 10\sqrt{3} - 10 + 10\sqrt{3} = 20\sqrt{3}$$

$$a_n = 2^n, 3 \times 2^n, a^y \Rightarrow 3 \times 2^n = \frac{a^{2n} + a^y}{2} \Rightarrow 4 \times 2^n = a^{2n} + a^y \Rightarrow a^{2n} = a^y$$

$$\Rightarrow a^{1+2n} = a^y \Rightarrow y = 2n + 1$$

$$b_n = x, 2, y \Rightarrow 2 = \frac{x+y}{2} \Rightarrow x+y = 4 \Rightarrow y = 4-x$$

$$x \times y = 1 \times 3 = 3$$

$$\begin{cases} y = 2n + 1 \\ y = 4 - x \end{cases} \Rightarrow 2n + 1 = 4 - x$$

$$\Rightarrow 2n = 3 \Rightarrow n = 1.5, y = 2$$

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

$\begin{array}{c} \curvearrowright \quad \curvearrowright \\ -1 \quad 0 \end{array}$

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

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

$$t_n = 2n - 1$$

$$t_1 = 1$$

$$a_n = 3, 5, 7, 9, 11, 13, 15, 17$$

$$t_n = r_{n+1} \Rightarrow t_r = r_1$$

$$b_n = 2, 5, 8, 11, 14, 17$$

$$t_n = r_{n-1} \Rightarrow t_r = a_9$$

$$c_n = 5, 11, 17, \dots \quad t_n = 4n - 1$$

$$14 \quad 19$$

$$4n - 1 \leq r_1 \Rightarrow 4n \leq r_2 \Rightarrow n \leq 5$$

جمله مشترک

9

$$a_1 + a_r + a_r = r_1 \Rightarrow S_r = \frac{r}{r} (ra_1 + (\frac{r}{r}-1)d) = r_1 \Rightarrow r(a_1 + d) = r_1 \Rightarrow a_1 + d = v$$

$$a_1 + a_r + a_a = 10\Delta \Rightarrow a_1 + (a_1 + rd) + (a_1 + rd) = 10\Delta \Rightarrow \frac{ra_1 + 9d}{r} = \frac{10\Delta}{r} \Rightarrow$$

$$\begin{cases} a_1 + rd = 3\Delta \\ a_1 + d = v \end{cases} \Rightarrow d = r\Delta$$

$$a_1 + r\Delta = v \Rightarrow a_1 = -r\Delta \quad a_r = -r\Delta + r\Delta = v$$

$$a_r = -r\Delta + \Delta r = r\Delta$$

$$a_r - a_r + a_1 = 3\Delta - v - r\Delta = v$$

$$\frac{v}{a_1} = \frac{v}{-r\Delta} = -\frac{1}{r}$$

مساوی برابر است

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$$a_1 + a_r + a_r = 1\Delta \Rightarrow S_r = 1\Delta \Rightarrow \frac{r}{r} (ra_1 + (\frac{r}{r}-1)d) = 1\Delta \Rightarrow \frac{r}{r} (ra_1 + rd) = 1\Delta$$

$$a_r + a_a = r\Delta \Rightarrow S_a = r_0 \Rightarrow \frac{\Delta}{r} (ra_1 + (\frac{r}{r}-1)d) = r_0 \Rightarrow \frac{\Delta}{r} (ra_1 + rd) = r_0$$

$$\begin{cases} r(ra_1 + rd) = r_0 \\ \Delta(ra_1 + rd) = \Delta r_0 \end{cases} \Rightarrow \begin{cases} ra_1 + rd = r_0 \rightarrow a_1 + d = \Delta \\ 1 \cdot a_1 + r \cdot d = \Delta r_0 \rightarrow a_1 + rd = \Delta \end{cases} \Rightarrow d = r, a_1 = r$$

$$t_{10} = a_1 + 9d \Rightarrow r + 9r = 10r$$

1

$$S_1 = 9S_r \Rightarrow S_1 = \frac{9}{r} (ra_1 + (\frac{r}{r}-1)d) = \frac{9}{r} (ra_1 + \Delta d)$$

$$S_r = \frac{r}{r} (ra_1 + rd)$$

$$S_1 = 9S_r \Rightarrow \frac{9}{r} (ra_1 + \Delta d) = 9 \times \left(\frac{r}{r} (ra_1 + rd) \right) \Rightarrow \frac{9}{r} (ra_1 + \Delta d) = \frac{9r}{r} (ra_1 + rd)$$

$$\Rightarrow ra_1 + \Delta d = r(ra_1 + rd) \Rightarrow ra_1 + \Delta d = 9a_1 + 9d \Rightarrow ra_1 - 9a_1 = 9d - \Delta d \Rightarrow -8a_1 = -d \Rightarrow d = 8a_1$$

$$a_1 = 11 \quad a_9 = 3\Delta \quad a_9 = 11 + 9d = 3\Delta \Rightarrow 9d = 2\Delta \Rightarrow d = \frac{2}{9}\Delta \quad a_9 = 11 + 12 = 23$$

$$r\Delta, \frac{r}{r}, \frac{r}{r}, \frac{r}{r}, \frac{r}{r}, \frac{r}{r}$$

$$11\Delta = 11 \times \frac{2}{9}\Delta = \frac{22}{9}\Delta \Rightarrow \frac{22}{9}\Delta = 23 \Rightarrow \Delta = \frac{9 \times 23}{22} = \frac{207}{22}$$

$$a_1 = r\Delta \quad a_9 = r\Delta \Rightarrow r\Delta + rd = r\Delta \Rightarrow rd = -\Delta \Rightarrow d = -\frac{\Delta}{r}$$

رابطه حسابی

10