

- ① {1} و ② {1, 3, 5} و ③ {1, 3, 5, 7, 9, 11}
- (1) (2) (3)

(9) $\rightarrow a^2 = 11 \rightarrow$ انتهای رشته
 $\rightarrow a^2 = 4 \times 2 + 1 = 9 \rightarrow$ انتهای رشته

مجموعه $= \frac{11+9}{2} = 10$

① {1, 2, 3} و ② {4, 5, 6, 7, 8, 9, 10, 11, 12} و ③ {13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100}

مجموعه $= \frac{n}{2} (1 + 100) \rightarrow n = \frac{100 \times 101}{2} = 5050$

$\rightarrow \frac{5050}{2} (1 + 100) = 5050 \times 50.5$

مجموعه $= \frac{5050 \times 50.5}{2} = 126512.5$

③ $a_1 \rightarrow n = 1 = 2K + 1 \rightarrow K = 0 \rightarrow -2(0) + 1 = 1$

$a_2 \rightarrow n = 2 = 2K + 1 \rightarrow K = 0.5 \rightarrow 1 + a$

$a_3 \rightarrow n = 3 = 2K + 1 \rightarrow K = 1 \rightarrow 1$ $a_4 \rightarrow n = 4 = 2K + 1 \rightarrow K = 1.5 \rightarrow 1 + a$

$a_5 \rightarrow n = 5 = 2K + 1 \rightarrow K = 2 \rightarrow 1$ $a_6 \rightarrow n = 6 = 2K + 1 \rightarrow K = 2.5 \rightarrow 1 + a$

$a_7 = 0$ $a_8 = 1 + a$ $a_9 = 1$ $a_{10} = -1$

$1 + 1 + a + 1 + 1 + 1 + a + 1 + 0 + 1 + a + 1 = 12 + 3a$

$12 + 3a = 12 \rightarrow a = 0$

$a_2 = 1 + (-1) = 0$ $a_3 = 0$ $a_4 = 1$ $a_5 = 1$ $a_6 = 1$

$$a_n = an^r + bn + c$$

$$\left\{ \begin{array}{l} a_0 = d\varepsilon \rightarrow \omega b + c = 1q \\ a = 1v/r \rightarrow vb + c = 1v \end{array} \right.$$

$$a = \frac{1}{v_0} (-a_0) \rightarrow a = -0/r$$

$$a = 1v/r \rightarrow vb + c = 1v$$

$$\rightarrow a = -0/r \left\{ \begin{array}{l} b = \varepsilon \\ c = -1 \end{array} \right. \rightarrow a_{10} = 1\varepsilon / a_1 = 1, 1$$

$$\frac{1\varepsilon}{1, 1} = \Delta \rightarrow -1, \omega$$

$$-1, q$$

(4)

$$an + q \left\{ \begin{array}{l} ar = br \rightarrow a_1 + rd = rp + q \rightarrow * \\ a_1 + d(n-1)d \end{array} \right.$$

$$\left\{ \begin{array}{l} ar = br \rightarrow a_1 + rd = rp + q \rightarrow * \\ a_1 + d(n-1)d \end{array} \right.$$

$$\rightarrow b_{10} = 10p + q = 0 \rightarrow q = -1 \cdot p$$

$$(a_1 + vd) - (a_1 + rd) = (vp + q) - (rp + q)$$

$$\rightarrow \varepsilon d = \Delta p \rightarrow d = \frac{\Delta}{\varepsilon} p$$

$$t_{10} = 10p + q = 1 \cdot p = \Delta p \Rightarrow \left| \frac{\Delta p}{\frac{\Delta}{\varepsilon} p} \right| = |\varepsilon|$$

$$r(a_1 + d)^r = \omega(a_1 + rd) \times a_1 + r(a_1 + d) \times a_1$$

(4)

$$r(a_1 + d)^r + r(a_1 + d) = \omega a_1 + 10a_1d + r(a_1 + d)$$

$$-ra_1 - a_1d + rd^r = 0 \rightarrow ra_1 - qd^r + a_1d = 0$$

$$\frac{a_1 + d}{d} \quad \hookrightarrow (ra - rd)(a + rd) \quad \left\{ \begin{array}{l} \frac{rd + rd}{rd} = \frac{q}{r} \\ -rd + rd = 1 \end{array} \right.$$

a, b, c

$\downarrow \quad \downarrow \quad \downarrow$
 $n \quad n+d \quad n+rd$

$$\left\{ \rightarrow \frac{n+rd}{\epsilon} = \frac{n}{r}, n+d \right.$$

(v)

~

$$\frac{n+rd}{\epsilon}$$

$$= \frac{\frac{a}{r}}{a+d}$$

$$\rightarrow \frac{-ra}{r} = d$$

$$\left\{ \frac{\frac{a}{r}}{b} = \frac{\frac{a}{r}}{a+d} \right.$$

$$= \frac{\frac{a}{r}}{a - \frac{ra}{r}}$$

$$\rightarrow k = -1$$

✓

$$a, b, c \rightarrow x, xr, xr^2 \rightarrow B^T = a + c \rightarrow \text{[scribbled out]}$$

①

$$\hookrightarrow xr, xr^2 \rightarrow xr = xr + xr^2$$

$$\varepsilon \rightarrow (r + r^2) \rightarrow r^2 + r^3 - \varepsilon = 0 \rightarrow (r-1)(r+1) = 0$$

$\begin{matrix} \text{if } r < 1 \text{ then } r \leftarrow 1 \\ -\varepsilon \end{matrix}$

②

$$\hookrightarrow \frac{a_4}{a_4} = r^4 \rightarrow (-\varepsilon)^4 = \sqrt[4]{\varepsilon}$$

۱۵

$$ar^2 = \sqrt{ar^3}, ar^2 = rv \rightarrow ar^3 = ar^2 \times ar^1 \quad ۱۵$$

اذین پروردگار

خداوند تعالی این حق را میست
بود

سوالات نمود، بود

$$a_0, a_3, a_4, a_9 \rightarrow \text{ضابطی اول}^k$$

$$a_1, a_2, a_7 \rightarrow \text{ضابطی دوم} (-2k+2)$$

$$a_2, a_5, a_8 \rightarrow \text{ضابطی سوم} \left[\frac{n}{k+2} \right] + a$$

$a_0 = 2^0$ $a_0 = 1$	$a_3 = 2^1$ $a_3 = 2$	$a_4 = 2^2$ $a_4 = 4$	$a_9 = 2^3$ $a_9 = 8$
--------------------------	--------------------------	--------------------------	--------------------------

$a_1 = -2(0) + 2$ $a_1 = 2$	$a_2 = -2(1) + 2$ $a_2 = 0$	$a_7 = -2(2) + 2$ $a_7 = -2$
--------------------------------	--------------------------------	---------------------------------

$$S_{10} = 1 + 2 + a_2 + 2 + 2 + a_5 + 4 + 0 + a_8 + 8 = 19$$

$$a_2 + a_5 + a_8 = -2 \rightarrow 3a + 4 = -2 \rightarrow a = -2$$

مجموع صوابات $a_2 + a_5 + \dots$ از ضابطی سوم بدست می آید

$$a_n = \left[\frac{2k+2}{k+2} \right] + (-2)$$

$$a_n = \left[\frac{2k+2 + k-2}{k+2} \right] - 2 = \left[\frac{3k}{k+2} \right] - 2 = \left[\frac{k+2}{k-2} \right]$$

عبارت $\left[\frac{k+2}{k-2} \right]$ به ازای $k=0$ و $k=1$ برابر 1- است و به ازای سایر مقادیر k برابر 0 است پس داریم:

$$S = a_2 + a_5 + a_8 + \dots + a_{29}$$

$$S = (-1) + (-1) + 0 + \dots + 0 = -2$$

$$a_3 = \sqrt{a_4} \rightarrow (a_q)_{1=2}^2 a_q^2 \rightarrow a_q^2 = a_q^2 \rightarrow a_q = 1$$

$$a_5 = 27 \rightarrow a_q^2 = 27 \rightarrow (a_q) q^2 = 27 \rightarrow q^2 = 27 \rightarrow q = 3$$

$$a = \frac{1}{3}$$

$$\left| \frac{1}{3} - a \right| = \left| \frac{1}{3} - \frac{1}{3} \right| = \frac{1}{3}$$

$$\frac{aq^a}{(aq)^r} = \frac{a \times q^a}{a^r \times q^r} = \frac{q^r}{a^r} \quad \left. \begin{array}{l} \\ \end{array} \right\} \rightarrow \left(\frac{q}{a}\right)^r + \frac{q}{a} - r = 0$$

$$\frac{ar}{a^r} = \frac{aq}{a^r} = \frac{q}{a}$$

$$\left(\frac{q}{a} + r\right) \left(\frac{q}{a} - 1\right) = 0 \quad \rightarrow \frac{q}{a} = 1 \rightarrow \frac{a}{q} = 1 \checkmark$$

$$\rightarrow \frac{q}{a} = -r \rightarrow \frac{a}{q} = \frac{1}{-r} \checkmark$$