

$$q^r = 11 \Rightarrow \frac{11 - 9}{r} = \boxed{1}$$

→ واسطہ حسابی $\frac{45+11}{2} = \frac{144}{2} = 72$

$$\{y_1, y_2, \dots, y_n\} \leftarrow \mathcal{I}(\bar{y})$$

$$\{1, 2, 3\}, \{4, 5, 6, \dots, 12\}, \{13, \dots, 39\}, \{40, \dots, 115\}$$

9. $\{121, 9, \dots, 9, 9, 9, 9\} \Rightarrow (999-121)+1 = 878$ (2)
 $\frac{878 \times 9}{2} = 3951 \leftarrow \Rightarrow 121, 9 (878) = 3951$

$$2A + 2B + C = 1 \quad \rightarrow A = -\frac{1}{2} \quad \checkmark$$

$$\frac{\cancel{1} \cancel{f}}{\cancel{-1} \cancel{f}} = -\omega$$

$$89A + VB + c = 1V, \quad (18)$$

$$\begin{cases} +2A + B + C = -1 \\ -9A + B + C = 1 \end{cases} \Rightarrow \begin{cases} -11A = 2 \\ A = -\frac{2}{11} \end{cases} \Rightarrow \begin{cases} B = -\frac{1}{11} \\ C = -\frac{1}{11} \end{cases}$$

$$a_1 = -\frac{1}{\omega}(1) + f(1) - 1 = 2$$

سوال ۴ را در سوال ۳ - فوٹسم

و جواب سوال ۳ می شود: $a = 2$ ✓

$$a + r^m d = r^n + y = -1r \rightarrow a + r^m d = 0$$

$$a + v_d = v_x + y = -r_n$$

$$a_f = b_r \rightarrow a_1 + f_d = b_r \rightarrow f_d = b_r - a_1$$

$$a_n = bv \rightarrow a_1 + vd = bv$$

$$b_n = C_n + k \rightarrow b_v - b_r = (v_c + k) - (r_c + k) = \omega_c$$

$$\omega_c = \tau_d$$

$$\ln x + y = 0$$

$$\Rightarrow 1 \cdot n = -y \quad b_1 = 0 \rightarrow 1 \cdot c + k = 0 \rightarrow k = -1 \cdot c$$

$$\Rightarrow I_0 = \frac{-y}{\omega}$$

$$\frac{b_{1d}}{d} = \frac{12c + k}{d}$$

$$\rightarrow \frac{100 - 100}{d} = \frac{\Delta C}{d} = \frac{f d}{d} \rightarrow \frac{b_{100}}{d} = r$$

$$\begin{aligned} \S (a+d)^r &= \S a^r + \S d^r + r a^{r-1} d = \S a^r + r a^{r-1} d + \S d^r \\ \Rightarrow r a^{r-1} d + \S d^r &= \S d^r \Rightarrow a(r a^{r-1} + \S d^{r-1}) = \S d^r \\ a + \S d &= \S d^r \quad r a^{r-1} + \S d^{r-1} = 0 \end{aligned}$$

$$a = \frac{-d \pm \sqrt{d^2 - r(r)(- \S d^r)}}{r} \rightarrow a = \frac{-d \pm \sqrt{d^2}}{r} \rightarrow \begin{cases} a = -rd \\ a = \frac{rd}{r} \end{cases}$$

$$a = -rd \rightarrow \frac{a}{d} = \frac{-rd}{d} = -r$$

$$a = \frac{rd}{r} \rightarrow \frac{a}{d} = \frac{rd}{rd} = 1$$

$$\begin{aligned} \textcircled{10} \quad b &= \frac{a^r}{r} \Rightarrow cb = a^r \\ a + c &= rb \rightarrow a = rb - c \end{aligned}$$

$$(rb - c)^r = bc \rightarrow r b^r - \S b c + c^r = 0$$

$$(b - c)(r b - c) = 0 \rightarrow \begin{cases} b = c \\ r b = c \end{cases}$$

$$a = \frac{cb}{rb - c} \xrightarrow{\text{جواب نهی}} b, \frac{a}{r}, \frac{c}{r} \rightarrow b, \frac{-rb}{r}, \frac{rb}{r}$$

$$a = \frac{cb}{rb - c} \xrightarrow{\text{جواب نهی}} b, -b, b \leftarrow q = -1$$

$$a = -rb \leftarrow \frac{a + rb}{r} = b$$

$$\textcircled{11} \quad c + d = b^r \quad a, b, c \xrightarrow{\text{جواب نهی}} a, aq, aq^r$$

$$r c b = \S a^r \quad r b, r a, c \xrightarrow{\text{جواب نهی}} r a q, r a, aq^r \xrightarrow{\text{جواب نهی}} \frac{r a q + aq^r}{r} = r a \rightarrow r a q + aq^r = r a$$

$$aq^r + r a q - r a = 0 \xrightarrow{\div a} q^r + r q - r = 0 \rightarrow (q + r)(q - 1) = 0 \rightarrow \begin{cases} q = 1 \\ q = -r \end{cases}$$

$$\frac{aq}{a_q} = \frac{aq^r}{aq^r} = q^r \rightarrow \frac{aq}{a_q} = -r$$

$$\textcircled{12} \quad \frac{a_r}{(ar)^r} + \frac{a_r}{(a)^r} = \frac{aq^r}{(aq)^r} + \frac{aq}{a^r} = \frac{aq^r}{a^r q^r} + \frac{aq}{a^r} = r \rightarrow \frac{q^r}{a^r} + \frac{q}{a} = r$$

$$\frac{q}{a} = t \rightarrow t + t - r = 0 \rightarrow \begin{cases} t = -r \rightarrow \frac{q}{a} = -r \\ t = 1 \rightarrow \frac{q}{a} = 1 \end{cases}$$

$$\frac{a^r}{a_r} = \frac{a^r}{aq} = \frac{a}{q} \rightarrow \begin{cases} \frac{a}{q} = -\frac{1}{r} \\ \frac{a}{q} = 1 \end{cases}$$

$$\textcircled{13} \quad \sqrt{aq^r} = aq^r \quad a_q = \sqrt{a_q} \rightarrow aq^r = \sqrt{aq^r} \rightarrow a_q^r = aq^r \rightarrow aq = 1$$

$$aq^r = r \quad a_q = r \rightarrow aq^r = r \rightarrow (aq) q^r = r \rightarrow q = r$$

$$aq = 1 \xrightarrow{q=r} a = \frac{1}{r}$$

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

سوال ۳

$$\begin{cases} a_0 = 1 \\ a_3 = 2 \\ a_4 = 4 \\ a_9 = 8 \end{cases} \quad \begin{cases} a_1 = 4 \\ a_6 = 2 \\ a_{11} = 0 \end{cases}$$

$$\begin{cases} a_2 = a+1 \\ a_5 = a+1 \\ a_8 = a+2 \end{cases}$$

اول ضابطه $\leftarrow a_0, a_3, a_4, a_9$
 دوم ضابطه $\leftarrow a_1, a_6, a_{11}$
 سوم ضابطه $\leftarrow a_2, a_5, a_8$

$$S_{10} = 1 + 4 + (a+1) + 2 + 2 + (a+1) + 4 + 0 + (a+2) + 8 = 19 \rightarrow a = -2$$

جمع جملات $a_2 + a_5 + \dots$ از ضابطه سوم:

$$a_n = \left\lfloor \frac{n}{k+2} \right\rfloor + a \xrightarrow{n=3k+2} \left\lfloor \frac{3k+2}{k+2} \right\rfloor - 2 \rightarrow a_n = \left\lfloor \frac{2(k+2)}{k+2} + \frac{k-2}{k+2} \right\rfloor - 2$$

$$\rightarrow S_n = \left\lfloor 2 + \frac{k-2}{k+2} \right\rfloor - 2 = \frac{k-2}{k+2}$$

عبارت $\left\lfloor \frac{k-2}{k+2} \right\rfloor$ به ازای $k=0$ و $k=1$ برابر ۱- است، و به ازای سایر اعداد حسابی برابر صفر است:

$$\sum_{k=0}^4 \left\lfloor \frac{k-2}{k+2} \right\rfloor = -2$$