

$$\{1\}, \{2, 3, 4\}, \{5, \dots, 9\}, \dots$$

✓

$$\frac{45}{1} \rightarrow 45$$

$$\frac{11}{9^2} \Rightarrow b = \frac{a+c}{2}$$

سوال 1

$$= \frac{45+11}{2} = \frac{56}{2} = 28$$

$$\{1, 2, 3\}, \{4, \dots, 12\}, \{13, 14, 15, \dots, 39\}, \{40, \dots, 120\}, \{121, \dots, 363\}$$

سوال 2

$$\frac{363+121}{2} = 242$$

n	1	2	3	4	5	6	7	8	9	10
	1	2	3	4	5	6	7	8	9	10
	1	2	3	4	5	6	7	8	9	10
	1	2	3	4	5	6	7	8	9	10
	1	2	3	4	5	6	7	8	9	10
	1	2	3	4	5	6	7	8	9	10
	1	2	3	4	5	6	7	8	9	10
	1	2	3	4	5	6	7	8	9	10
	1	2	3	4	5	6	7	8	9	10
	1	2	3	4	5	6	7	8	9	10

$$\begin{cases} r^2 & n = r^2 \\ -r^2 + 4 & n = r^2 + 1 \\ \left[\frac{n}{k+1} \right] + a & n \leq r^2 + r \end{cases}$$

سوال 3

$$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 = 55$$

$$an \leq ar^n + bn + c$$

سوال 4

$$a = \left(\frac{1}{v_0} \right) (-a_0) = -\frac{1}{a}$$

$$a_0 \leq 14 \Rightarrow -\frac{1}{a} (14) + ab + c = 14 \Rightarrow -14/a + ab + c = 14$$

$$a_1 = 14 \Rightarrow -\frac{1}{a} (14) + ab + c = 14 \Rightarrow -14/a + ab + c = 14$$

$$a_1 = -\frac{1}{8} n^2 + 4n - 1$$

$$a_{10} = -\frac{1}{8} (10)^2 + 4(10) - 1 = 14$$

$$\frac{a_{10}}{a_1} = \frac{14}{-\frac{1}{8} + 4 - 1} = 8$$

$$a_1 = -\frac{1}{8} + 4 - 1 = \frac{14}{8}$$

سوال 5

$$f_d = t_r - t_f = a_v - a_r \Rightarrow f_d = \omega d' = \frac{d'}{d} = \frac{r}{a}$$

$$a_1 \leq 0 \Rightarrow a_1 + 9d' = 0 \Rightarrow a_1 = -9d'$$

$$\frac{a_{10}}{a_1} = \frac{a_1 + 14d'}{a_1} = \frac{-9d' + 14d'}{-9d'} = \frac{5d'}{-9d'} = -\frac{5}{9}$$

$$9a_r^2 = 2a_p a + 3a_r a$$

$$\frac{t_r}{d}$$

سوال 6

$$9(a+d)^2 = 2(a+d)a + 3(a+d)a$$

$$9a^2 + 18ad + 9d^2 = 2a^2 + 2ad + 3a^2 + 3ad$$

$$\frac{a}{d} \leq a \quad a \leq da$$

$$7a^2 - 4d^2 + ad = 0 \Rightarrow d^2(7a^2 + a - 4) = 0$$

$$(7a-3)(a+2) = 0 \quad a = \frac{3}{7}, a = -2$$

Arman

$$\frac{a+3d}{d} = \frac{a}{d} + 3 \Rightarrow a+3$$

✓

$$1 = -2 \rightarrow \frac{3}{7}$$

ضابطه اول

$$\begin{cases} a_1 = 4 \\ a_4 = 2 \\ a_7 = 0 \end{cases}$$

ضابطه دوم

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

سوال 3

$$\begin{cases} a_0 = k \\ a_3 = 2 \\ a_6 = 4 \\ a_9 = 1 \end{cases}$$

S1. = 19 →

$a = -2$

$$a_2 + a_5 + a_8 + \dots \rightarrow (-1) + (-1) + 0 + 0 + 0 = \boxed{-2}$$

↓
اضابطه سوم

$$\left[\frac{n}{k+2} \right] + a \rightarrow \left[\frac{k-1}{k+2} \right] \rightarrow \begin{matrix} k=0 \rightarrow -1 \\ k=1 \rightarrow 0 \\ k=2, \dots \rightarrow 0 \end{matrix} \left. \vphantom{\begin{matrix} k=0 \\ k=1 \\ k=2 \end{matrix}} \right\} -2$$

$a, b, c \rightarrow a, a_4, a_7$

$\forall b, \tau a, c \rightarrow \tau a_4, \tau a, a_7 \xrightarrow{\text{نسبت}} \frac{\tau a_4 + a_7}{2} = \tau a$

→ $\ell = 1 \times$

$\ell = -1 \checkmark$

$$\frac{a_4}{a_7} = \ell^2 = -4 \checkmark$$

9-1

$$\frac{a_4}{(a_7)^2} + \frac{a_7}{(a_4)^2} = \frac{a_4^2}{a_7^2 \ell^2} + \frac{a_7}{a_4} = 2$$

$$\frac{\ell^2}{a_7} + \frac{\ell}{a_4} = 2 \rightarrow \frac{a}{\ell} = -\frac{1}{2}$$

$\frac{\ell}{a} = t$

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

$t^2 + t - 2 = 0 \quad t = -2$

$t = 1$

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