

تلف سہا، ۱۳۵

گروه دهم انجمنه زنتی

زبان زنتی

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$$t_1 = 10 \quad t_n = t_1 + (n-1)d \rightarrow t_n = 10 + (n-1)d$$

$$t_1 + 3d = 91 \rightarrow t_4 = 10 + 3d = 91 \rightarrow 3d = 81 \rightarrow d = 27$$

$$t_n = 10 + (n-1)27 = 101 \rightarrow 191 = (n-1)27 \rightarrow n-1 = 7 \rightarrow n = 8$$

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$$100 \leq 1n + 1 \leq 999 \rightarrow 99 \leq 1n \leq 998 \rightarrow 111 \leq n \leq 142$$

$$142 - 111 + 1 = 32$$

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$$a_1 + a_2 = a + 1d + a + 1d = 2a + 2d \quad a_1 + a_2 + a_3 = 3a + 3d = 9$$

$$a_1 + a_2 + a_3 = 3a + 3d = 9$$

$$\begin{cases} 3a + 3d = 9 \\ 3a + 3d = 9 \end{cases} \Rightarrow \begin{cases} d = 1 \\ a = 0 \end{cases} \Rightarrow 1(1) + 1(1) + 1(1) = 3$$

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$$\frac{1a + 1d}{a_1 + a_2} = \frac{a + d}{2} \quad \frac{2^n - 1 + 2^n - 1}{2} = 2^{n+1} - 1 \rightarrow 2^n + 2^n - 1 = 2^{n+1} - 1$$

$$2^n \rightarrow 2^n \times 2^n \rightarrow f(2^n) \Rightarrow \text{if } 2^n \geq n \rightarrow n + n - 1 - f(n) = n - 1 - f(n) = 0$$

$$\frac{(n-1)(n+1)}{2} \rightarrow 2^n \geq 1 \rightarrow 2^n \geq 1 \rightarrow n = 1$$

$$2^n - 1 \geq 1, 2^{n+1} \geq 1, 2^n - 1 \geq 1 \rightarrow 1 + 1 + 1 = 3$$

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$$a + 11d + a + 9d = 2a + 20d = 20 \rightarrow a + 10d = 10, a$$

$$a + 11d - a - 9d = 2d = 5 \rightarrow d = 5 \rightarrow a + 10(5) = 10, a$$

$$a = -10, a + 10d = -10 + 10(5) = 40$$

زنتی

$$a + a + d + a + r d + a + r d + a + r d = \frac{1}{r} (a + a d + a + r d + a + r d + a + r d) - 9$$

$$5a + 10d = \frac{5a + 10d}{r} \xrightarrow{\frac{5a + 10d}{r} + \frac{5a + 10d}{r}} \frac{10a + 20d}{r} \xrightarrow{\frac{10a + 20d}{r} = \frac{10d}{r}} 10a = 10d \rightarrow a = d$$

$$a_1 = a + d, a_1 = a \rightarrow \frac{a_1}{a} = \frac{a + d}{a} = \frac{a + r a}{a} = \frac{r a}{a} = r$$

$$(a + r d)^r - (a + r d)^r \rightarrow a^r + r^2 d^2 + 19 a d - a^r - 19 d^r - 19 a d \quad -V$$

$(19 d^r + 19 a d =) 19 d (r d + a)$

$$a_1 = a + 15 \rightarrow a_1 = (n-1) + a_1 \rightarrow (n-1)d = 15 \rightarrow d = 15$$

$$19d \text{ (جواب)} \quad 19 \times 15 = 285$$

$$(1 + \sqrt{3}) - (1 - 9\sqrt{3}) = 12\sqrt{3}$$

$$\frac{12\sqrt{3}}{11 + 11} = \sqrt{3}$$

$$t_1 = 1, t_{n-1} = 31 \rightarrow t_k = 1 + (k-1)d$$

$$t_{n-1} = 1 + (n-1)d = 31 \rightarrow (n-1)d = 30 \rightarrow d = \frac{30}{n-1} = 15$$

$$t_{n+1} = 1 + nd = 11 \rightarrow nd = 10 \rightarrow n \times \frac{15}{n-1} = 10 \rightarrow 15n = 10n - 10 \rightarrow 5n = -10 \rightarrow n = -2$$

$$a_1 + a_{11} = 10 + 10d = a + (n-1)d + a + (n+1)d \rightarrow 10 = 2n + 1 \quad -10$$

$$a_1 = 10, a + 10d = 10(a + 10d) \rightarrow 0 = 10a + 10d \rightarrow a = -d$$

$$a_k = a + (k-1)d = -d + (k-1)d = (k-2)d = 0 \rightarrow k = 2$$

جواب