

۲۰ آخرین!

$$\alpha_1 = \epsilon_0 \rightarrow d = \frac{c_1 - \epsilon_0}{\epsilon - 1} \cdot \frac{r_1}{r} = V \rightarrow \underline{a_n = Vn + 22}$$

$$\alpha_\epsilon = 91$$

$$Vn + 22 = 201$$

$$Vn = 179$$

$$\boxed{n = 22}$$



$$99 < Vn + 22 < 1000$$

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$$Vn + 22 < 1000$$

$$99 < Vn$$

$$Vn < 978$$

$$1 \leq 1 \dots < n$$

$$n < 1421 \dots$$

$$1 \leq n$$

$$n < 142$$

$$14 \leq n < 142$$

$$142 - 14 + 1 = \boxed{129}$$

$$\left. \begin{aligned} \text{if } n=1 &\rightarrow \alpha_r + \alpha_\epsilon + \alpha_\epsilon = -4 + 12 = 8 \rightarrow \frac{8}{2} = 4 = \alpha_\epsilon \\ \text{if } n=2 &\rightarrow \alpha_r + \alpha_\epsilon + \alpha_\epsilon = -6 + 12 = 6 \rightarrow \frac{6}{2} = 3 = \alpha_\epsilon \end{aligned} \right\} d = \frac{0-r}{1} = -r$$

$$a_n = r(-r) + b = r \rightarrow b = 1$$

$$\underline{a_n = -r^2 + 1} \rightarrow \alpha_{14} + \alpha_1 = (-2(14) + 1) + (-2(1) + 1) = -28$$

$$r^n - r^{n-1} = r^{n-1}(r - 1) \rightarrow \sum_{k=1}^n (r^k - r^{k-1}) = r^n - r^0 = r^n - 1$$

$$\sum_{k=1}^n r^k = r \frac{r^n - 1}{r - 1} = \frac{r^{n+1} - r}{r - 1}$$

$$\frac{r^{n+1} - r}{r - 1} = 129 \rightarrow r^{n+1} - r = 129(r - 1)$$

$$r^{n+1} - r = 129r - 129 \rightarrow r^{n+1} = 130r - 129$$

$$r^n = 130 - \frac{129}{r} \rightarrow r = 130$$

$$a + 11d - a - 2d = 9d = 8 \rightarrow d = \frac{8}{9}$$

$$a + 11d + a + 9d = 2a + 20d = 18 \rightarrow 2a + 20 \cdot \frac{8}{9} = 18 \rightarrow 2a = 18 - \frac{160}{9} = -\frac{18}{9}$$

$$a_1 = a + r \cdot 0d = -\frac{18}{9} + 0 = -2$$

$$\boxed{a_n = -2 + (n-1) \cdot \frac{8}{9}}$$

$$\frac{a_1 + a_2 + a_3 + a_4 + a_5}{a_1 + a_2 + a_3 + a_4 + a_5} = \frac{1}{5} \rightarrow \frac{\Delta a + 10a}{\Delta a + 10a} \rightarrow \Delta a + 10a = 10a + 10a$$

$$\frac{a_1}{a_1} = \frac{a+d}{a} = \frac{10a}{a} = 10$$

$\Delta a = 10a$
 $d = 9a$

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$$t_n = t_{n-1} + 1 \rightarrow \Delta t = 1 \rightarrow d = 1$$

$$\frac{t_9 - t_8}{t_9} = \frac{(t_9 + t_8)(t_9 - t_8)}{t_9} = \frac{r(t_9 - t_8)}{t_9} = 10 \rightarrow 10 = \frac{r(t_9 - t_8)}{t_9}$$

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$$d = \frac{r + \sqrt{r} - (r - 12\sqrt{r})}{12} = \frac{r + \sqrt{r} - r + 12\sqrt{r}}{12} = \frac{13\sqrt{r}}{12} = \sqrt{r}$$

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$$d = \frac{r - r}{r(n-1)} = \frac{0}{r(n-1)} = 0 \rightarrow r(n-1) = r + n(r(n-1)) = 11$$

$$\frac{12n}{r(n-1)} = 9 \rightarrow \frac{12n}{r(n-1)} = 9$$

$n = 11$

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$$a_n + a_{n+1} = a_n + a_{n+1} \rightarrow n + 1 = n + 1 \rightarrow n = 1$$

$$\frac{a_1}{a_1} = \frac{r}{1} \rightarrow r + 1 = 1 + 1 \rightarrow r = 0$$

$$a = -d \rightarrow a + d = 0$$

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