

٢٥ آخريں!

سینا فاضلی

Subject:

Year:

Month:

Date:

$$a_1 = 8$$

(2)

(2d)

$$a_8 = 41 \rightarrow 3d = 21$$

$$d = 7 \rightarrow a_n = 8 + (n-1) \times 7$$

$$208 = 8 + (n-1) \times 7$$

$$199 = 7(n-1) \rightarrow n-1 = 28$$

$$n = 29 \checkmark$$

$$10, 17, 24, 31, \dots, 99V$$

(129)

$$a_n = 7n + 3$$

$$99V - 101 + 1 = 129 \checkmark$$

$$a_{18} + a_{14} + a_{11} = -5 \times 18 + 12$$

$$7a_{14} + a_{14} = -71$$

$$8a_{14} = -71$$

$$a_{14} = -8.875$$

$$a_0 + a_1 + a_9 = -5 \times 9 + 12$$

$$7a_1 + a_1 = -33$$

$$8a_1 = -33$$

$$a_1 = -4.125$$

$$a_{14} + a_1 = -8.875 - 4.125 = -13 \checkmark$$

$$a_n = 2^n - 1$$

$$a_1 = 1$$

$$\rightarrow \frac{2^n - 1}{2} = 2 \rightarrow 2^n - 1 = 4 \rightarrow 2^n = 5 \rightarrow n = 2.32 \checkmark$$

$$a_{14} = 2^{14} - 1$$

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

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

$$2^n (1 + 2^n) = 2^n (2^n + 1) \rightarrow 2^n = 2^n \rightarrow n = 2$$

$$R43 \quad 2^{2 \times 2} - 2^2, 2^{2+1}, 2^2 - 1$$

$$15, 8, 3 \rightarrow 15 + 1 + 3 = 19 \checkmark$$

می توانیم در این اشکال قدر نسبت اضلاع را با مقایسه ی طول اضلاع دو شکل به روش دستی مناسبه کنیم. و می دانید اگر

قدر نسبت تغییرات ضلع را بدست آوریم، همین عدد تغییرات محیط و مربع آن قدر نسبت تغییر مساحت است. (بسیار بطور

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$$\left. \begin{aligned} a_{1,2} - a_{1,0} &= 5 \\ a_{1,2} + a_{1,0} &= 25 \end{aligned} \right\} \quad (2)$$

$$2a_{1,2} = 30 \rightarrow a_{1,2} = 15 \rightarrow 2d = 15 - 5 = 10$$

$$a_{2,1} - a_{1,0} = 11d \rightarrow a_{2,1} = 10 + 11 \times 15 = 166 \quad (3)$$

$$\frac{d}{r} (2a_1 + 4d) = \frac{1}{r} \rightarrow 2a_1 + 4d = 2a_4 + 4d \quad (4)$$

$$\frac{d}{r} (2a_4 + 4d) = \frac{1}{r} \rightarrow 2a_4 + 4d = 2a_1 + 4d$$

$$2a_1 + 12d = 2(a_1 + 2d) + 4d \rightarrow 2a_1 + 12d = 2a_1 + 4d$$

$$2a_1 = 2d$$

$$\frac{a_2}{a_1} = \frac{a+d}{a} \rightarrow \frac{a+2a}{a} = 3 \quad (5)$$

$$\left. \begin{aligned} t_9 &= t_4 + 10 \\ t_9 &= t_4 + 9d \end{aligned} \right\} \rightarrow d = 10$$

$$\left. \begin{aligned} t_9^2 - t_4^2 &= (t_4 + 9d)^2 - (t_4 + 10)^2 = (t_4 + 10)^2 - (t_4 + 10)^2 = 0 \\ \frac{t_9 - t_4}{t_4} &= 1 \quad (6) \end{aligned} \right\}$$

$$\frac{t_9 - t_4}{t_4} = \frac{t_4 + 9d - (t_4 + 10)}{t_4} = \frac{9d - 10}{t_4} = 1 \quad (7)$$

$$d = \frac{t_4 + 10 - t_4}{9} = \frac{10}{9}$$

$$t_4 + d \times n = 11 \rightarrow t_4 + \frac{10 \times n}{9} = 11 \rightarrow \frac{10 \times n}{9} = 11 - t_4$$

$$10n = 9(11 - t_4)$$

$$10n = 99 - 9t_4 \rightarrow n = \frac{99 - 9t_4}{10}$$

Subject:

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$$a_n + a_{n+r} = a_r + a_{1+r}$$

✓

(3) $\frac{1}{2}$ - 1

مثال: $n + n + r = r \rightarrow n = 1$

(4)

$$a_n = r a_{\frac{n}{r}} \rightarrow a_1 = r a_r \rightarrow a_1 + r d = r (a_1 + r d)$$

$$a_1 + (n-1)d = 0$$

$$a_1 + r d = r a_1 + r^2 d$$

$$-r a_1 = r d \rightarrow a_1 = -d$$

$$\downarrow$$
$$-d + d n - d = 0$$

$$-r d + d n = 0 \rightarrow d(-r + n) = 0 \rightarrow n = r$$