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Date :

Subject :

۱، ۵، ۱۲، ۲۲

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$$a_n = n^2 + \frac{(n-1) \times n}{2} \rightarrow 10^2 + \frac{10 \times 9}{2} = 145$$

$$a_n'' = \frac{(n-1) \times n}{2} = 55 \rightarrow n = 11$$

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سریه ها رنگی $\rightarrow 5, 9, 13, \dots \rightarrow a_n'' = 2n + 1 = 11 \times 2 + 1 = 23$

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سریه ها سفید $\rightarrow 2, 4, 6, \dots \rightarrow a_n = (n-1) \times 2 = 10 \times 2 = 20$

مجموع = $20 + 23 = 43$ سریه ها رنگی = 45

$\left(\frac{-1}{2}\right), \left(\frac{1}{2}\right), -\frac{1}{3}, \frac{1}{4}, -\frac{1}{5}$

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بزرگ ترین / کوچک ترین

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

$b_3 = (-3)^3 - 7 \times 3 = -24$ $-24 = -5n + 22 \rightarrow n = 14$

$k = 14$

$$t_n = an + b$$

-4

$$\left. \begin{array}{l} \rightarrow t_v = va + b \\ \rightarrow t_1 = 1a + b \end{array} \right\} \rightarrow r_a = 1r \rightarrow a = r$$

$$\left. \begin{array}{l} \rightarrow t_2 = 2a + b \\ \rightarrow t_1 = 1a + b \end{array} \right\} \rightarrow \Delta a = r$$

$$a_n = an + b$$

-V

$$\left. \begin{array}{l} \rightarrow a_r = ra + b = v \\ \rightarrow a_1 = 1a + b = 1 \end{array} \right\} a = r, b = (-1)$$

$$\left. \begin{array}{l} \rightarrow a_1 = r + (-1) = r \rightarrow b_1 = r = a + b \\ \rightarrow a_r = 1r + (-1) = 1 \rightarrow b_r = 1 = ra + b \end{array} \right\} a = 1, b = (-1)$$

$$b_n = \Delta n - \Delta$$

$$t_n = \frac{r_n - r}{r_n + r} < \frac{r}{r} \rightarrow r_{n+1} > \Delta n - r$$

$$\rightarrow r_n < 1r \rightarrow n < \frac{1r}{r}$$

$$\rightarrow n < 1$$

1, r, 1, r, \Delta, r

$$t_n = A_n^r + B_n$$

- ①

$$\begin{aligned} \rightarrow t_1 &= A + B = 4 \\ \rightarrow t_1 &= rA + rB = 9 \end{aligned} \quad \left. \vphantom{\begin{aligned} \rightarrow t_1 &= A + B = 4 \\ \rightarrow t_1 &= rA + rB = 9 \end{aligned}} \right\} A = (-1, 0), B = 5, 0$$

$$rA, 0B = (-r, 0) + r5, 0 = (rr, r)$$

$$t_n = an^r + bn + c$$

- ②

$$\begin{aligned} \rightarrow t_1 &= a + b + c = -4 \\ \rightarrow t_2 &= 4a + 2b + c = -7 \\ \rightarrow t_3 &= 9a + 3b + c = 0 \end{aligned} \quad \left. \vphantom{\begin{aligned} \rightarrow t_1 &= a + b + c = -4 \\ \rightarrow t_2 &= 4a + 2b + c = -7 \\ \rightarrow t_3 &= 9a + 3b + c = 0 \end{aligned}} \right\} \begin{aligned} a &= 1, b = -1, c = -4 \\ &\rightarrow n^r - n - 4 \end{aligned}$$

$$t_n = an + b$$

$$\begin{aligned} \rightarrow t_1 &= ra + b = r1 \\ \rightarrow t_2 &= 4a + b = 41 \end{aligned} \quad \left. \vphantom{\begin{aligned} \rightarrow t_1 &= ra + b = r1 \\ \rightarrow t_2 &= 4a + b = 41 \end{aligned}} \right\} \begin{aligned} a &= 0, b = r1 \\ &\rightarrow an + r1 \end{aligned}$$

$$an + r1 = n^r - n - 4 \rightarrow n^r - 4n - r1 = 0 \rightarrow (n-4)(n+r1)$$

$$\Rightarrow \boxed{n=4} \checkmark \quad \text{and} \quad n = -r1$$