

Subject

Date : Year:

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زنگنه سادات حسینی

$$t_n = 3n^2 - 1 \rightarrow n=1 \rightarrow 2 \quad n=2 \rightarrow 11 \quad n=3 \rightarrow 24 \quad n=4 \rightarrow 47$$

(1) (2)

$$t_n = \frac{2n+1}{n+4} \rightarrow n=1 \rightarrow \frac{3}{5} \quad n=2 \rightarrow \frac{5}{6} \quad n=3 \rightarrow \frac{7}{7} \quad n=4 \rightarrow \frac{9}{8}$$

$$t_n = \frac{(-1)^n}{\sqrt{n+3}} \rightarrow t_{13} = \frac{(-1)^{13}}{\sqrt{13+3}} \rightarrow t_{13} = \frac{-1}{4} \rightarrow t_{13} = -\frac{1}{4}$$

$$t_n = 2n - \left\lfloor \frac{n}{4} \right\rfloor \rightarrow t_{13} = 24 - \left\lfloor \frac{13}{4} \right\rfloor \rightarrow 24 - 3 = 21 \rightarrow t_{13} = 21$$

$$t_n = 2n - 10 \rightarrow 2n - 10 < 0 \rightarrow 2n < 10 \rightarrow n < 5$$

4 جمله منفی است
1, 2, 3, 4

$$t_n = n^2 - 14n + 40 \rightarrow (n-4)(n-10) \rightarrow \frac{4-10}{+4-4+} \rightarrow 4 < n < 10$$

در این بازه
منفی است

5, 6, 7, 8, 9

در 5 جمله منفی است

$$t_n = 2n - 14 \rightarrow 2n - 14 < 0 \rightarrow 2n < 14 \rightarrow n < 7$$

6, 7

$$t_n = n^2 - 14n + 47 \rightarrow (n-3)(n-11) \rightarrow \frac{3-11}{+4-4+} \rightarrow 3 < n < 11$$

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t_n

① ②

$$t_x = V \rightarrow 5a + b \Rightarrow 5a = 15$$

$$t_a = 22 \rightarrow 9a + b \quad \boxed{a = 3}$$

$t_p = ?$

$$t_x = 14 + b = V \rightarrow \boxed{b = -1}$$

$$t_p = 14a + b \quad 9 - a = 12 \quad \boxed{12}$$

$$f_n = n^2 - 4n + 2$$

$$\min / \frac{-b}{2a} = \frac{4}{2} = 2$$

$$n^2 - 4n + 2 \xrightarrow{n=2} 9 - 11 + 2 = -V$$

$$t_n = n^2 + \varepsilon n + 1 \quad (n \in \mathbb{N})$$

$$\min / \frac{-b}{2a} \rightarrow \frac{-\varepsilon}{2} = -2 \Rightarrow \varepsilon = 4$$

$$n=2 \Rightarrow 4 + 8 + 1 = 13$$

$$n=1 \Rightarrow 1 + \varepsilon + 1 = 4$$

$$t_n = 1^2 - 4 + 2 = -1$$

$$t_2 = 4 - 8 + 2 = -2$$

$$t_3 = 9 - 12 + 2 = -1$$

$$t_4 = 16 - 16 + 2 = 2$$

$$t_5 = 25 - 20 + 2 = 7$$

$$t_2 = 4 + 2b + 1 = -V \Rightarrow b = -4$$

$$t_n = an^2 + bn + c$$

$$t_n = n^2 + bn + 1 \rightarrow n^2 - 4n + 1$$

$$t_{10} = 100 + 40 + 1 = 141$$

$$2a = 2 \Rightarrow a = 1$$

$$c = 1$$

$$t_n = -V, -4, -1, 1, 4, \dots$$

$$1 + 4 + 9 + 16$$

$$+4 + 9$$

$$t_n = an^2 + bn + c \rightarrow$$

$$t_n = 2n^2 + bn - V$$

$$t_n = 2n^2 - n - V$$

$$2a = 4 \Rightarrow a = 2$$

$$c = -V$$

$$t_2 = 8 + 2b - V = 1 + 2b - V = -1 \Rightarrow 2b = -1$$

$$b = -1$$

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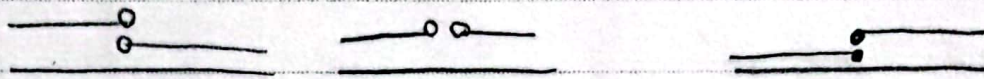
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زنگنه سادات صنی

$$(-\infty, a+\varepsilon] \cap [2a+1, +\infty)$$

(9) 3



$$2a+1 \geq a+\varepsilon \Rightarrow \boxed{3 \leq a}$$

5

(3)

اعداد صحیح (10) 10

3, 4, 9, 12, ...
+3 +3 +3

الف) چند عدد به 3 بخش پذیر است؟ $Q_n = 3n \rightarrow 3n < 10.1 \rightarrow n < 3.3, 4$

$$n = 1, 2, 3, \dots, 33$$

15, 10, 20, ...
+5 +5 +5

$$Q_n = 5n$$

$$5n < 10.1 \rightarrow n < 2.02$$

$$n = 1, 2, 3, \dots, 20$$

ب) چند عدد به 5 بخش پذیر است؟ $Q_n = 5n$ 15

15, 30, 45, ...
+15 +15

$$Q_n = 15n$$

$$15n < 10.1 \rightarrow n < 0.67 \rightarrow n = 1$$

ج) چند عدد هم به 3 و هم به 5 بخش پذیر است؟ $Q_n = 15n$ 4

20

د) چند عدد هم به 3 و هم به 5 بخش پذیر است؟

$$n(A \cup B) = n(A) + n(B) - n(A \cap B) \Rightarrow$$

$$33 + 20 - 4 = \boxed{49}$$

parsian