

الف) $t_n = 3n^2 - 1 \rightarrow 2, 11, 28, 47, 72, \dots$

ب) $t_n = \frac{3n+1}{n+2} \rightarrow \frac{3}{2}, \frac{5}{4}, 1, \frac{9}{4}, \frac{11}{4}, \dots$

الف) $t_n = \frac{(-1)^n}{\sqrt{n+2}} \rightarrow \frac{(-1)^n}{\sqrt{n+2}} = -1$

ب) $t_n = 2n - \lfloor \frac{n}{2} \rfloor \rightarrow 24 - \lfloor \frac{24}{2} \rfloor = 24 - 12 = 12$

الف) $t_n = 2n - 10 \rightarrow 2n - 10 < 0 \rightarrow \frac{2n}{2} < \frac{10}{2} \rightarrow n < 5$

ب) $t_n = n^2 - 1(n+2) \rightarrow (n-1)(n-2) \rightarrow \frac{1}{+} \frac{1}{-} \frac{1}{+} \rightarrow 1 < n < 2$

الف) $t_n = 2n - 14 \rightarrow 2n - 14 \leq 0 \rightarrow \frac{2n}{2} \leq \frac{14}{2} \rightarrow n \leq 7$

ب) $t_n = n^2 - 12n + 27 \rightarrow (n-9)(n-3) \rightarrow \frac{1}{+} \frac{1}{-} \frac{1}{+} \rightarrow 3 \leq n \leq 9$

الف) $t_n = 2n - 5$
 $\begin{cases} t_1 = 2(1) - 5 = -3 \\ t_2 = 2(2) - 5 = -1 \\ t_3 = 2(3) - 5 = 1 \end{cases}$
 $t_3 = 1$

الف) $t_n = n^2 - 4n + 2$
 $n = \frac{-b}{2a} = \frac{-(-4)}{2(1)} = 2 \rightarrow t_2 = 2^2 - 4(2) + 2 = -2$

ب) $t_n = n^2 + 4n + 1$
 $n = \frac{-b}{2a} = \frac{-4}{2(1)} = -2$
 $t_1 = 1 + 4(1) + 1 = 6$

الف) $t_n = -1, 2, -3, 4, -5, \dots$
 $\frac{2a}{1} = \frac{r}{2} \rightarrow a = 1$
 $t_1 = 1(1) + b(1) + c = -1$
 $t_2 = 1(2) + b(2) + c = 2$
 $\begin{cases} 1 + b + c = -1 \\ 2 + 2b + c = 2 \end{cases} \rightarrow \begin{cases} b = -2 \\ c = 0 \end{cases}$

الف) $t_n = -4, 1, 4, 9, \dots$
 $2a = 4 \rightarrow a = 2$
 $t_n = 2n^2 - 4n - 4$
 $\begin{cases} t_1 = 2(1) + b + c = -4 \\ t_2 = 2(2) + 2b + c = 1 \end{cases} \rightarrow \begin{cases} b = -4 \\ c = -1 \end{cases}$

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

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$$a+1 \geq 2a+1$$

$$1 \geq a$$

$$2a+1 \geq a+1 \rightarrow a \geq 0$$

بسیادی باشد

اگر a عدد صحیح باشد یا نه

الف) 3, 4, 9, ..., 99

$$\frac{99-3}{3} + 1 = \frac{96}{3} + 1 = 32 + 1 = 33$$

ب) 100, 10, 100, 10, 100, 10, ...

$$\frac{100-10}{10} + 1 = \frac{90}{10} + 1 = 9 + 1 = 10$$

ج) 10, 20, 40, ..., 90

$$\frac{90-10}{10} + 1 = \frac{80}{10} + 1 = 8 + 1 = 9$$

$$1) 3^2 + 20 = 9 + 20 = 29$$

دستگاه

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