

الف)  $t_n = 3n^2 - 1 \rightarrow t_1 = 3 - 1 = 2 \rightarrow 2, 11, 24, 47, 74$   
 $t_2 = 12 - 1 = 11$   
 $t_1 \quad t_2 \quad t_3 \quad t_4 \quad t_5$

ب)  $t_1 = \frac{2+1}{5} = \frac{3}{5} \Rightarrow \frac{3}{5}, \frac{5}{9}, 1, \frac{9}{1}, \frac{11}{9}$   
 $\frac{1}{1+4}$

الف)  $t_{13} = \frac{(-1)^{13}}{\sqrt{13+3}} = \frac{-1}{\sqrt{14}} = \left[ \frac{-1}{\sqrt{14}} \right]$

ب)  $t_{13} = 2 \times 13 - \left[ \frac{13}{4} \right] = 24 - 3 = 21$

الف)  $2n - 10 < 0 \rightarrow 2n < 10 \rightarrow n < 5 \rightarrow n = 1, 2, 3, 4 \rightarrow 4 \text{ جمله اول} \rightarrow \left[ 4 \right]$   
 این جمله متقی

ب)  $n^2 - 14n + 40 < 0 \rightarrow (n-10)(n-4) < 0 \rightarrow \frac{0}{+} \frac{0}{-} \frac{0}{+} \frac{0}{+} \rightarrow (4, 10) \rightarrow 5, 6, 7, 8, 9 \rightarrow \left[ 5 \right]$

الف)  $2n - 14 \leq 0 \rightarrow 2n \leq 14 \rightarrow n \leq 7 \rightarrow n = 1, 2, 3, 4, 5, 6, 7 \rightarrow \left[ 7 \right]$

ب)  $n^2 - 12n + 27 \leq 0 \rightarrow (n-3)(n-9) \leq 0 \rightarrow \frac{0}{+} \frac{0}{-} \frac{0}{+} \frac{0}{+} \rightarrow [3, 9] \rightarrow 3, 4, 5, 6, 7, 8, 9$

$t_4 = 7$   
 $t_4 = t_3 + d \rightarrow t_3 = 4 \rightarrow \text{جواب}$   
 $t_9 = 22 \rightarrow t_9 = t_4 + 5d \rightarrow 5d = 22 - 7$   
 $5d = 15 \rightarrow d = 3$

$$\text{الف) } \min = \left| -\frac{b}{2a} \right| = \frac{4}{2} = 2$$

$$3^2 - (1+2) = -1 \quad \checkmark$$

$$\boxed{-V = -1}$$

1, 2, 5

$$\text{ب) } \min \left| -\frac{b}{2a} \right| = \frac{-4}{2} = -2$$

نمبر اعداد صحیح است که بتواند منفی باشد

$$t_1 = 4 \quad t_2 = 13 \quad t_3 = 22 \quad \dots \rightarrow \text{جواب} = -3 \quad t_{\min} = t_1 = 4$$

$$6n = -4, -1, 1, 2, 3, \dots$$

$$an^2 + bn + c$$

$$c = -f - a - b$$

$$\rightarrow 10^2 - 4(10) + 1 = -1$$

$$a + b + c = -f$$

$$f + 2b - f - a - b$$

$$x(2)$$

$$3a + b = -3$$

$$n^2 - 4n + 1$$

$$f + 2b + c = -V$$

$$= 3a + b - f = -V$$

$$1a + 2b = -f$$

$$c = 1$$

$$9a + 2b + c = -1$$

$$-4a - 2b = 4$$

$$b = -4$$

$$\boxed{f_1 = \text{جواب}}$$

$$1a + 2b = -f$$

$$2a = 2 \rightarrow a = 1$$

$$\begin{array}{r} -4, -1, 1, 2, \dots \\ \hline +5 \quad +9 \quad 13 \\ \hline 5 \quad 9 \end{array}$$

$$an^2 + bn + c$$

$$a + b + c = -4 \rightarrow c = -4 - a - b$$

$$f + 2b + c = -1 \rightarrow 3a + b - 4 = -1$$

$$9a + 2b + c = 1 \rightarrow 1a + 2b - 4 = 1$$

$$\begin{cases} 3a + b = 3 \\ 1a + 2b = 5 \end{cases} \rightarrow \begin{array}{r} -4a - 2b = -10 \\ \hline 1a + 2b = 5 \end{array} \rightarrow 2a = 5 \rightarrow a = 2$$

$$\boxed{2n^2 - n - 1}$$

$$[a + f, 2a + 1] \rightarrow a + f \leq 2a + 1 \rightarrow a \geq 3 \rightarrow a + f \leq 2a + 1$$

$$3 \leq a \rightarrow a \geq 3$$

$$3, 4, 9, \dots, 99 \rightarrow \frac{99 - 3}{3} + 1 = 33$$

الف)

$$2, 10, 18, 26, 34, \dots, 98 \rightarrow \frac{98 - 2}{8} + 1 = 12$$

ب)

$$1, 3, 5, \dots, 99 \rightarrow \frac{99 - 1}{2} + 1 = 50$$

$$\begin{aligned} n(A \cup B) &= n(A) + n(B) \\ &= 33 + 12 \\ &= 45 \end{aligned}$$

$$n(A \cap B) = 4$$