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۱- الف) $3n^2 - 1$ $\rightarrow n=1 \rightarrow 3 \times 1 - 1 = 2$
 $\rightarrow n=2 \rightarrow 12 - 1 = 11$
 $\rightarrow n=3 \rightarrow 27 - 1 = 26$
 $\rightarrow n=4 \rightarrow 48 - 1 = 47$
 $\rightarrow n=5 \rightarrow 75 - 1 = 74$ $\rightarrow 2, 11, 26, 47, 74$ (ب)

ب) $\frac{2n+1}{n+4}$ $\rightarrow n=1 \rightarrow \frac{3}{5}$
 $\rightarrow n=2 \rightarrow \frac{5}{6}$
 $\rightarrow n=3 \rightarrow \frac{7}{7} = 1$
 $\rightarrow n=4 \rightarrow \frac{9}{8}$
 $\rightarrow n=5 \rightarrow \frac{11}{9}$ $\rightarrow \frac{3}{5}, \frac{5}{6}, 1, \frac{9}{8}, \frac{11}{9}$ (ب)

۲- الف) $\frac{(-1)^n}{\sqrt{n+3}}$ $= \frac{(-1)^{12}}{\sqrt{13+3}} = \frac{-1}{\sqrt{16}} = -\frac{1}{4}$ (ب)

ب) $2n - \left[\frac{n}{2}\right] = 2 \times 12 - \left[\frac{12}{2}\right] = 24 - 6 = 18$ (ب)

۳- الف) $2n-10$ $\rightarrow n=1 \rightarrow t_n = -8$
 $\rightarrow n=5 \rightarrow t_n = 0$ $\rightarrow A = \{1, 2, 3, 4\} = N = [1, 4]$ (ب)

ب) $n^2 - 14n + 48 = (n-6)(n-8)$ $\rightarrow n = (6, 8)$ (ب)

۴- الف) $2n-14$ $\rightarrow n=1 \rightarrow t_n = -12$
 $\rightarrow n=7 \rightarrow t_n = 0$ $\rightarrow [1, 7] = \{1, 2, 3, 4, 5, 6, 7\} = N$ (ب)

ب) $n^2 - 12n + 27 = (n-3)(n-9)$ $\rightarrow n = [3, 9]$ (ب)

۵- $t_2 = 7, t_9 = 22 \rightarrow t_3 = ?$

$\rightarrow 4a+b = 7, 9a+b = 22 \rightarrow 5a = 22-7 = 15 \rightarrow a = 3$

$\rightarrow b = -5 \rightarrow 3n-5 \rightarrow 3 \times 3 - 5 = 4$ (ب)

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$$n^2 - 4n + 2 \xrightarrow{n=1} 1 - 4 + 2 = -1$$

$$\xrightarrow{n=2} 4 - 8 + 2 = -2$$

$$\xrightarrow{n=3} 9 - 12 + 2 = -1$$

4- اف

1, 2, 3

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$$n^2 + 5n + 1 \xrightarrow{n=1} 1 + 5 + 1 = 7$$

ب.

$$\xrightarrow{n=1} a + b + c = -1 \rightarrow 3a + b = -1 - (-1) = 0$$

$$\xrightarrow{n=2} 4a + 2b + c = -1 \rightarrow 2a + b = -1 - (-1) = 0$$

$$\xrightarrow{n=3} 9a + 3b + c = -1 \rightarrow a = -1 - (-1) = 0$$

$$b = -1, c = +1$$

$$\rightarrow n^2 + 4b + 1$$

$$-4, -1, 1, 2$$

-1

$$\xrightarrow{n=1} a + b + c = -4 \rightarrow 3a + b = 0$$

$$\xrightarrow{n=2} 4a + 2b + c = -1 \rightarrow 2a + b = 0$$

$$\xrightarrow{n=3} 9a + 3b + c = 1 \rightarrow a = 1 \rightarrow a \geq 1$$

$$b = -1, c = -1$$

$$\rightarrow 2n^2 - n - 1$$

$$(-\infty, a + \varepsilon] \cup [2a + 1, +\infty) \rightarrow a + \varepsilon < 2a + 1$$

$$2a + 1 = a + \varepsilon$$

$$\rightarrow a = 1$$

$$\rightarrow a < 1$$

$$\text{SARTI} \rightarrow a > 1 \rightarrow a = [1, +\infty)$$

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$$\frac{49 - 12}{12} + 1 = 12$$

$$\frac{100 - 5}{5} + 1 = 20$$

$$\frac{90 - 15}{15} + 1 = 7$$

$$33 + 2 - 6 = 29$$

۲ (الف)

۳ (ب)

ج) با ۲۳ نفر دیگر

د) بیست و سه نفر

SARTI