

الف) $2, 11, 24, 47, 74$ ✓

ب) $\frac{3}{5}, \frac{5}{9}, \frac{7}{12}, \frac{9}{16}, \frac{11}{25}$ ✓ (۲)

الف) $\frac{(-1)^{13}}{\sqrt{14+3}} = \frac{-1}{4} = -\frac{1}{4}$ ✓

ب) $(12 \times 13) - \left[\frac{13}{4}\right] = 24 - 3 = 21$ ✓ (۲)

جملاتی از ۲ و ۳ و ۴ ✓
الف) $2n-1 < 0 \Rightarrow 2n < 1 \Rightarrow n < \frac{1}{2} \Rightarrow \emptyset$

ب) $n^2 - 14n + 49 < 0 \Rightarrow (n-1)(n-4) < 0 \Rightarrow \begin{matrix} 1 & 4 \\ + & - & + \end{matrix}$ ✓ (۲)
 $\Rightarrow (1, 4) \Rightarrow 2, 3, 5, 6, 7, 8, 9 \Rightarrow \emptyset$

الف) $2n-16 < 0 \Rightarrow 2n < 16 \Rightarrow n < 8 \Rightarrow 1, 2, 3, 4, 5, 6, 7$ ✓
 $\Rightarrow \emptyset$

ب) $n^2 - 12n + 27 < 0 \Rightarrow (n-3)(n-9) < 0 \Rightarrow \begin{matrix} 3 & 9 \\ + & - & + \end{matrix}$ ✓ (۲)
 $\Rightarrow [3, 9] \Rightarrow 4, 5, 6, 7, 8 \Rightarrow \emptyset$

$q_n = an + b$

$a = \frac{22-7}{9-4} = \frac{15}{5} = 3$

$q_4 = 3 \times 4 + b = 7 \Rightarrow b = -5$

$q_3 = (12 \times 3) - 5$

$= 31$ ✓ (۲)

۱

۲

۳

۴

۵

$$\begin{aligned} \text{الف)} & -3, -9, -27, -81, \dots \Rightarrow (-V) \\ \text{ب)} & 9, 13, \dots \Rightarrow (9) \end{aligned}$$

$$\begin{aligned} (a+b+c) & -4, -V, -1, -V, \dots & q_{10} &= 1 \dots - q_{9+1} \\ (10+b) & -4, -1, +1 & & \\ (10) & +4, +4 & & \\ \Rightarrow & a=1, b=-9, c=+1 \Rightarrow q_n = n^2 - 9n + 1 \end{aligned}$$

$$\begin{aligned} (a+b+c) & -9, -1, 1, 21 \\ (10+b) & +9, +9, +13 \\ (10) & +9, +9 \\ \Rightarrow & a=2, b=-1, c=-1 \end{aligned}$$

$$q_n = n^2 - 1n - V$$

اشتراک متناهی $\leftarrow$ $10a+1 = a+4$ اشتراک متناهی!

$$\Rightarrow 10a+1 > a+4 \Rightarrow a > 3 \Rightarrow [4, +\infty)$$

$$\begin{aligned} \text{الف)} & \frac{99-1}{10} + 1 = (10) \\ A &= \left[\frac{1}{10} \right] = 10 \end{aligned}$$

$$\begin{aligned} \text{ب)} & \frac{99-9}{10} + 1 = (10) \\ B &= \left[\frac{1}{10} \right] = 10 \end{aligned}$$

$$\begin{aligned} \text{ج)} & \frac{99-10}{10} + 1 = (10) \\ A \cap B &= \left[\frac{1}{10} \right] = 10 \end{aligned}$$

$$\begin{aligned} & 10 + 10 - 10 = 10 \\ n(A \cup B) &= n(A) + n(B) - n(A \cap B) = \\ 10 + 10 - 10 &= 10 \end{aligned}$$