

الف) $t_n = 3n^2 - 1 \rightarrow t_1 = 3(1)^2 - 1 = 2, t_2 = 3(2)^2 - 1 = 11, t_3 = 3(3)^2 - 1 = 24, t_4 = 3(4)^2 - 1 = 47, t_5 = 3(5)^2 - 1 = 74$

ب) $t_n = \frac{n+1}{n+4} \rightarrow t_1 = \frac{2(1)+1}{1+4} = \frac{3}{5}, t_2 = \frac{2(2)+1}{2+4} = \frac{5}{6}, t_3 = \frac{2(3)+1}{3+4} = \frac{7}{7}, t_4 = \frac{2(4)+1}{4+4} = \frac{9}{8}, t_5 = \frac{2(5)+1}{5+4} = \frac{11}{9}$

الف) $t_n = \frac{(-1)^n}{\sqrt{n+3}} \rightarrow t_{13} = \frac{(-1)^{13}}{\sqrt{13+3}} = t_{13} = \frac{-1}{4}$ ب) $t_n = 2n - [\frac{n}{2}] \rightarrow t_{13} = 2(13) - [\frac{13}{2}] = 23$

الف) $t_n = 2n - 10 \rightarrow 2n - 10 < 0 \rightarrow 2n < 10 \rightarrow n < 5$ پس ۴ جمله یستی از آن ها

ب) $t_n = n^2 - 14n + 40 \rightarrow n^2 - 14n + 40 < 0 \rightarrow (n-10)(n-4) < 0$ پس ۵ جمله ۵، ۶، ۷، ۸ و ۹ $4 < n < 10$

$$\begin{array}{c} 4 \quad 10 \\ + \phi - \phi + \end{array}$$

الف) $t_n = 2n - 14 \rightarrow 2n - 14 < 0 \rightarrow 2n < 14 \rightarrow n < 7 \rightarrow 1 < n < 7$ پس ۶ جمله

ب) $t_n = n^2 - 12n + 27 \rightarrow n^2 - 12n + 27 < 0 \rightarrow (n-9)(n-3) < 0$ پس ۷ جمله $3 < n < 9$

$$\begin{array}{c} 3 \quad 9 \\ + \phi - \phi + \end{array}$$

$9 - 4 = 5$
 $22 - 7 = 15$

$15 = 5d \rightarrow d = 3 \rightarrow 3n - 4$

$3(2) - 4 = 2$

$t_2 = a(2) + b = 7$

$t_7 = a(7) + b = 22$

$5a = 15$

$a = 3 \rightarrow 3n - 4 \rightarrow \boxed{5}$

الف) $t_n = n^2 - 4n + 2 \rightarrow t_1 = (1)^2 - 4(1) + 2 = -3$ ب) $t_n = n^2 + 4n + 1 \rightarrow t_1 = (1)^2 + 4(1) + 1 = 6$

$t_n = \frac{-4}{2} - \frac{7}{2}, -\frac{1}{2}, -\frac{7}{2}, -\frac{4}{2}$
 $\frac{-4}{2} - \frac{7}{2} - \frac{1}{2} + \frac{1}{2} + \frac{7}{2} + \frac{4}{2} \rightarrow 2 = 2a \rightarrow a = 1$

$an^2 + bn + c$

$t_0 = a(0)^2 + b(0) + c = 1 \rightarrow 1n^2 + bn + 1 \xrightarrow{1} 1 + b + 1 = -4 \rightarrow n^2 - 4n + 1$
 $c = 1$
 $2 + b = -4$
 $b = -6$
 $(1)^2 - 4(1) + 1 = -2$
 $1 - 4 + 1 = -2$

$$a(n)^r + b(n) + c = -v$$

$$c = -v$$

$$r n^r + b n - v \rightarrow r x 1 + b - v = -4$$

$$r - v + b = -4$$

$$b = -1$$

$$a_n = r n^r - n - v$$

$$-v = -4, -1, 1, 21$$

$$r = r a$$

$$r = a$$

⑧

$$r a + 1 \leq a + \varepsilon$$

$$a \leq r \quad (-\infty, r]$$

⑨

$$\left[\frac{1}{r} \right] = r r$$

(10)

$$\left[\frac{1}{a} \right] = r.$$

(11)

$$\left[\frac{1}{a} \right] = 4$$

(12)

$$r r + r. = a r - 4 = r v$$

(13)