

$$t_n = \frac{1}{d}, \frac{4}{v}, \frac{10}{9}, \frac{16}{11}, \dots$$

$\begin{array}{cccc} & +r & +r & +r \\ \frac{1}{d} & \frac{4}{v} & \frac{10}{9} & \frac{16}{11} \\ & +r & +r & +r \end{array}$

$$t_n = \frac{r_n - 2}{r_{n+1}}$$

در جمله کویکتر از $\frac{1}{r}$ است

6 و 4 و 3 و 2 و 1

n اعداد طبیعی است

$$\frac{r_n - 2}{r_{n+1}} < 1/d$$

$$\rightarrow r_n - 2 < r_{n+1}/d \rightarrow r_n - r_n < r_n/d + 2 \rightarrow n < 9/d$$

$$t_n = 4, 9, 9, 4, 0$$

$\begin{array}{cccc} & +r & +r & +r \\ 4 & 9 & 9 & 4 \\ & +r & +r & +r \end{array}$

$$t_n = An^r + Bn$$

$$14A + dB = 1x - \frac{r}{r} + dx - v/d = 14x$$

$\frac{4}{r} = r/d$

$$\rightarrow 14a = -1 \rightarrow a = -\frac{1}{14}$$

$$\begin{cases} a_1 = 4 \Rightarrow a_1 = -\frac{1}{14}(1)^r + b(1) + c = 4 \\ a_r = 9 \Rightarrow a_r = -\frac{1}{14}(r)^r + b(r) + c = 9 \end{cases}$$

$$\Rightarrow \begin{cases} -b + c = -v/d \\ 14b + c = 14 \end{cases} \rightarrow \begin{cases} -b + c = -v/d \\ 14b + c = 14 \end{cases}$$

$$a_n = \underbrace{\left(-\frac{1}{14}\right)}_A n^r + \underbrace{v/d}_B n$$

$$t_n = -4, -9, 0, \dots$$

$\begin{array}{ccc} & +r & +r \\ -4 & -9 & 0 \\ & +r & +r \end{array}$

$$\frac{9 - 4 - 4}{99} = \frac{14 + 11}{99}$$

در جمله کویکتر از $\frac{1}{r}$ است

$$\begin{cases} a_1 = -4 \Rightarrow a_1 = 1(1)^r + b(1) + c = -4 \\ a_r = -9 \Rightarrow a_r = 1(r)^r + b(r) + c = -9 \end{cases}$$

$$\Rightarrow \begin{cases} -b + c = -v \\ 14b + c = -1 \end{cases} \rightarrow \begin{cases} -b + c = -v \\ 14b + c = -1 \end{cases}$$

$$a_n = n^r - 14n - 4$$

$$\begin{cases} -a + d = 14 \\ a + 14d = 11 \end{cases}$$

$\frac{14d = 10}{d = 10}$

$$a + d = 11$$

$\downarrow$
 11

$$a_n = 11 + (n-1)14 = 14n + 1$$

$$n^r - n - 4 = 14n + 11$$

$$n^r - n - 14n - 4 - 11 = 0 \rightarrow (n-9)(n+14) = 0$$

$\begin{array}{cc} \downarrow & \downarrow \\ +9 & -14 \end{array}$