

$$t_n = \frac{2}{0}, \frac{4}{1}, \frac{10}{4}, \frac{14}{11}, \dots$$

① چند جمله‌نویس را $\frac{3}{4}x^2$ بنویسید

$$\frac{4n-2}{2n+3} < \frac{3}{2} \quad 4n-2 < 4n+9$$

$$2n < 11$$

$$n < 4/10$$

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

$$3A + 5B = 8 \quad ②$$

$$t_n = An^2 + Bn \rightarrow t_1 = A + B = 4 \rightarrow A + (-5A) = 4 \rightarrow -4A = 4$$

$$t_4 = 14A + 4B = 4$$

$$A = -\frac{3}{4}$$

$$A + B = 14A + 4B$$

$$-3B = 10A$$

$$B = -\frac{10}{3}A$$

$$-\frac{3}{4} + B = 4 \quad \frac{11}{4}$$

$$B = \frac{15}{4}$$

$$3A + 5B = 3 \times -\frac{3}{4} + 5 \times \frac{15}{4} = -\frac{9}{4} + \frac{75}{4} = \frac{66}{4} = \frac{33}{2}$$

$$= 33$$

$$t_n = -4, -4, 10, \dots$$

$$a_1 = 31$$

$$a_4 = 10$$

$$d = 1$$

$$d = 1$$

$$\rightarrow an^2 + bn + c \rightarrow n^2 - n - 4$$

جمله مشترک

$$\frac{dn+c}{10} \rightarrow \frac{10}{10}n + c = 31$$

$$c = 2$$

$$10n + 21 = 11 \checkmark$$

$$a_n = 10n + 21$$

$$\frac{2a}{a=1} \quad C = -4$$

$$b \Rightarrow x + b - 4 = -4$$

$$b = -1$$

$$n^2 - n - 4 = 10n + 21$$

$$n^2 - 11n = 25$$

$$n(n-11) = 25$$

$$4 \times 3 \rightarrow n = 9$$

$$9^2 - 9 - 4 = 44 \checkmark$$

$$10 \times 9 + 21 = 44 \checkmark$$

در جمله هم مشترک است ← و مساوی

$$n^2 + \frac{n(n-1)}{2} = 1 + \frac{1 \times 9}{2} = 1 + 4.5 = 5.5 \quad \boxed{145}$$

①

$$1^2 + 0 = 1 \quad \checkmark$$

$$4 + 1 = 5 \quad \checkmark$$

$$9 + 3 = 12 \quad \checkmark$$

شماره 0, 1, 3

1, 4, 9 $\rightarrow n^2$

1, 3, 6 $\rightarrow \frac{n(n+1)}{2}$

$$\frac{2n^2 - n(n+1)}{2} = 0 \rightarrow 2n^2 - n^2 - n = 11$$

$$n^2 - n = 11$$

$$n(n-1) = 11$$

$$\boxed{n=11}$$

② شکل هندسی 55 ستاره دارد

③

شماره = ①

②

③

شماره = 5

شماره = 0

شماره = 5

9

13

$$\rightarrow 4n+1 \rightarrow (4 \times 11)+1 = 45$$

$$5 \times 5 + 1 \times 5 = 12.5$$

4

1

$$\rightarrow 4n-4 \rightarrow 44-4=40$$

13

21

$$\rightarrow 4n-3 \rightarrow 44-3=41$$

$$\boxed{1.5}$$

$$b_n = (-3)^n - v_n \xrightarrow{n=2} 27 - 21 = -6$$

$$a_n = -0.5n + 22 \xrightarrow{n=k} -0.5k + 22 = -6$$

$$a_1 - a_2 = 12$$

$$2d = 12$$

$$\boxed{d=6}$$

$$a_2 = a_1 + 2d$$

$$a_2 - a_1 = 8$$

$$\rightarrow a_1 + 2d - a_1 = 2d = 8 \times 6 = 48$$

$$a_n = dn + C \rightarrow a_2 = 7, a_4 = 15 \rightarrow \begin{cases} 2d + C = 7 \\ 4d + C = 15 \end{cases} \rightarrow \begin{cases} d=2 \\ C=-1 \end{cases}$$

$$\begin{cases} a_1 = b_1 \\ a_2 = b_2 \end{cases} \rightarrow b_n = dn + b$$

$$a_n = 2n + (-1) = 2n - 1$$

$$b_1 = 2 \times 1 - 1 = 1$$

$$b_2 = 2 \times 2 - 1 = 3$$

$$\begin{cases} 2a + b = 3 \\ b = -5 \end{cases}$$

$$2 \times 14 - 5 = 23$$

$$\boxed{b_n = 2n - 5}$$