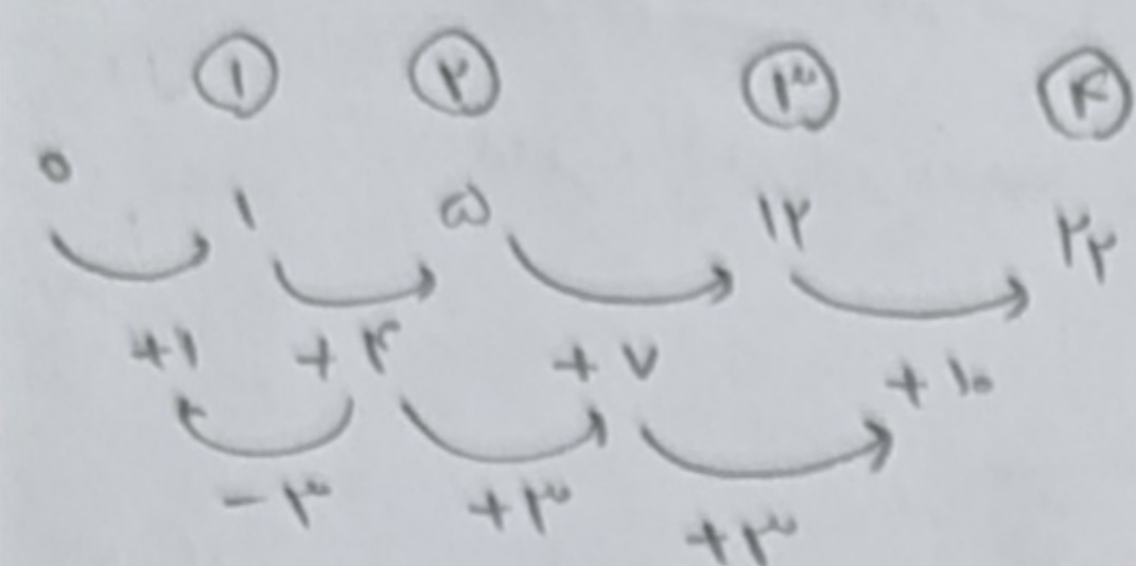


(۱)



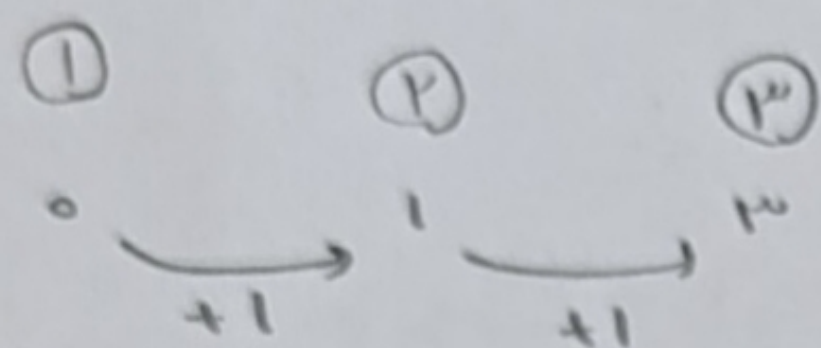
$$2a=3 \quad a=\frac{3}{2} \quad t_0=0 \quad c=0$$

$$a_1 + b_1 + c_1 = 0$$

$$a+b=\frac{3}{2}+b=1 \quad b=-\frac{1}{2}$$

$$t_n = \frac{3}{2}n^2 - \frac{1}{2}n \quad t_{10} = \frac{3}{2} \times 10 \times 10 - \frac{1}{2} \times 10 = 150 - 5 = 145$$

(۲)



$$t_n = 2n \quad n=?$$

$$t_n = \frac{(n-1)n}{2} = 2n$$

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

$$1 \times 11$$

$$n=11$$

(۳)

$$a_1 = 1, a_2 = 2, a_3 = 3, \dots$$

$$1+2+3+\dots+10=55$$

$$a_1 = 1, a_2 = 2, a_3 = 3, \dots$$

$$1+2+3+\dots+10=55$$

(۴)

$$a_n = \frac{(-1)^{n+1}}{n} = \frac{1}{n}$$

$$\frac{1}{n} - (-1) = \frac{1}{n} + \frac{1}{n} = \frac{2}{n}$$

$$a_n = \frac{(-1)^{n+1}}{n} = -1$$

(۵)

$$b_n = (-1)^n - v(n) = -1n - 1n = -2n \quad a_k = -2k + 12 = -2n \quad 2k=12 \quad k=6$$

(۶)

$$a_{10} - a_5 = 12 \quad q_1 + 9d - q_1 - 4d = 5d = 12 \quad d=2.4$$

$$a_4 - a_1 = ? \quad q_1 + 3d - q_1 = 3d = 7.2$$

(۷)

$$a_7 = a_1 + 6d = 7 \quad a_8 = a_1 + 7d = 12$$

$$a_1, a_2 \rightarrow a_1, a_2$$

$$a_7 = a_1 + 6d = 7 \quad 7d = 1 \quad d=1/7 \quad a_1 = 7$$

$$a_8 = a_1 + 7d = 12$$

$$a_7 = a_1 + 6d = 7 + 6 = 13$$

$$3, 5, 7, 9, \dots$$

$$3, 5, 7, \dots$$

$$+n$$

$$d=2 \quad b_n = 2n - 2$$

(۸)

$$t_n = \frac{1}{2}, \frac{4}{5}, \frac{9}{10}, \frac{16}{11}$$

$\xrightarrow{+2} \quad \xrightarrow{+2} \quad \xrightarrow{+2}$
 $\xrightarrow{+2} \quad \xrightarrow{+2} \quad \xrightarrow{+2}$

$$\frac{Fn-2}{kn+3} < \frac{3}{5}$$

$$1n-2 < 4n+9$$

$$kn < 13$$

$n < 4.5 \rightarrow$ کلاً ۴ جمله مثبت
 $n \leq 4 \leftarrow$ کلاً ۴ جمله مثبت است

① ② ③ ④ ⑤

0, 4, 9, 16, 25, ...

$\xrightarrow{+4} \quad \xrightarrow{+4} \quad \xrightarrow{+4} \quad \xrightarrow{+4}$
 $\xrightarrow{-3} \quad \xrightarrow{-3} \quad \xrightarrow{-3} \quad \xrightarrow{-3}$

$$ka = -3 \quad a = -\frac{3}{5} \quad t_0 = 0$$

$$c = 0$$

(۹)

$$-\frac{3}{5} + b = 4 \quad b = \frac{12}{5} + \frac{3}{5} = \frac{15}{5}$$

$$t_n = An^2 + Bn$$

$$-\frac{3}{5}n^2 + \frac{15}{5}n$$

$$rA + 5B$$

$$5(-\frac{3}{5}) + 5(\frac{15}{5}) = \frac{5 \cdot 15 - 9}{5} = \frac{45}{5} = 9$$

① ② ③

-9, -4, -1, 0, ...

$\xrightarrow{+5} \quad \xrightarrow{+5} \quad \xrightarrow{+5}$
 $\xrightarrow{+2} \quad \xrightarrow{+2}$

$$ka = 2 \quad a = 1 \quad t_0 = -9$$

$$c = -9$$

$$1 + b - 9 = -9 \quad b = -1$$

(۱۰)

$$an^2 + bn + c$$

$$a_n = n^2 - n - 9$$

$$a_r = \begin{cases} a_1 + d = 11 \\ a_4 = a_1 + 3d = 21 \end{cases}$$

$$rd = 10 \quad d = 10$$

$$a_1 = 11 - 10 = 1 \quad a_n = 10n + 1$$

$$n^2 - n - 9 = 10n + 1$$

$$n^2 - 11n - 10 = 0$$

$$(n-12)(n+1) = 0$$

$$a_n = n^2 - n - 9 \Rightarrow a_9 = 81 - 9 - 9 = 63$$

$$a_n = 10n + 1 \Rightarrow a_9 = 90 + 1 = 91$$

$$[n=9]$$

۹ $\textcircled{-3}$ رتبه ۳: -3
 جمله ای تماماً عددهای ۳- ام ندارد.