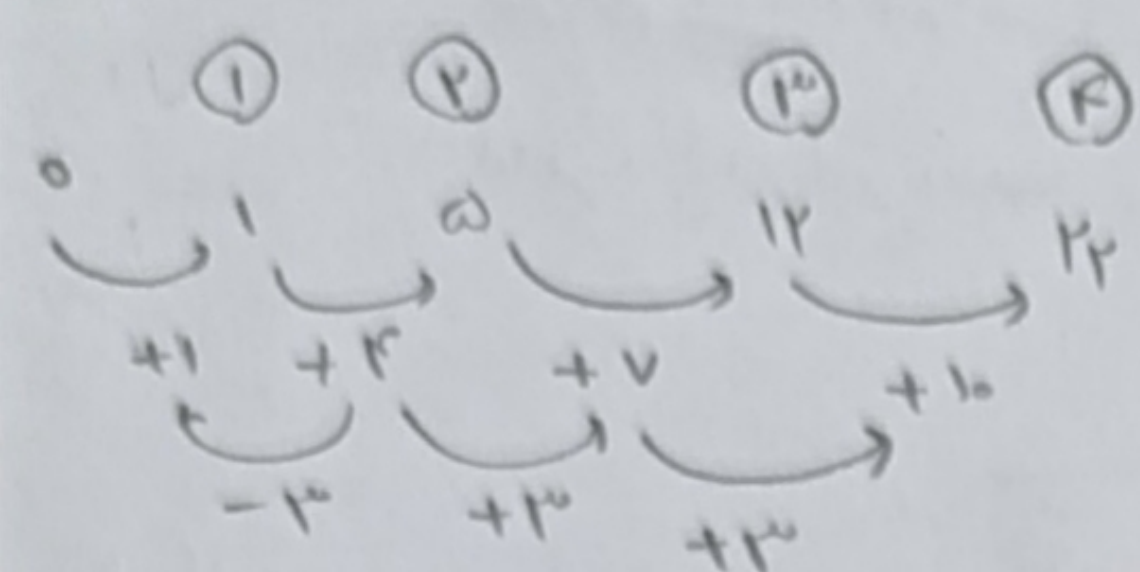


(۱)



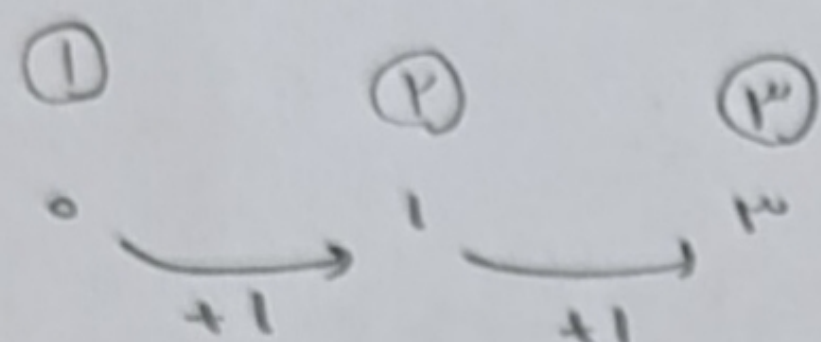
$$2a=3 \quad a=\frac{3}{2} \quad t_0=0 \quad c=0$$

$$a_1 + b_1 + c_1 = 0$$

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

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

(۲)



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

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

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

$$10 \times 11$$

$$n=11$$

(۳)

$$t_0' = f_0 + f_2 = 10$$

$$10 + f_2 = 15$$

①

$$0 = f_1 \times 0$$

②

$$f = f_1 \times 1$$

③

$$1 = f_1 \times 2$$

$$t_n = f(n-1)$$

$$t_{11} = f \times 10 = f_0$$

$$t_n = f_n + 1$$

$$t_{11} = f \times 11 + 1 = f_0$$

سوال

جواب

$$5 = f(1) + 1$$

$$9 = f(2) + 1$$

$$13 = f(3) + 1$$

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

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

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

(۴)

$$b_p = (-r)^p - v(r) = -rv - r1 = -r\lambda \quad a_k = -\Delta k + r = -r\lambda \quad \Delta k = r_0 \quad k = r$$

(۵)

$$a_{10} - a_9 = 12 \quad q_1 + 9d - q_1 - 9d = 9d = 12 \quad d = r$$

(۶)

$$a_4 - a_1 = ? \quad q_1 + 3d - q_1 = 3d = r_0$$

$$a_r = a_1 + d = v \quad a_r = a_1 + rd = 10$$

(۷)

$$a_1, a_r \rightarrow a_1, a_r$$

$$a_r = \begin{cases} a_1 + d = v \\ a_1 + rd = 10 \end{cases} \quad rd = \lambda \quad d = r \quad a_1 = r$$

$$a_r = a_1 + rd = r + \lambda = 11$$

$$r, v, 11, 10, \dots$$

$$r, 11, \dots$$

$$+n$$

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

(۸)

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

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

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

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

$$3n < 11$$

$n < 4.15 \rightarrow$ کلاً ۴ جمله مثبت است
 ۴ جمله منفی است $\leftarrow$ ۴

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)

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

$$t_n = An^2 + Bn$$

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

$$rA + \omega B$$

$$3(-\frac{3}{5}) + 5(\frac{15}{5}) = \frac{15-9}{1} = \frac{6}{1} = 6$$

① ② ③

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

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

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

$$c = -9$$

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

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$$an^2 + bn + c$$

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

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

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

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

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

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

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

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

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

$n=9$

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