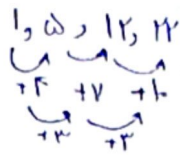


(سوال ۱)



$$a_1 = \frac{3}{2}$$

$$a = \frac{3}{2}$$

$$\begin{cases} a+b+c=1 \\ 2a+2b+c=5 \\ 3a+b=f \\ \frac{9}{2}+b=f \\ b=-\frac{1}{2} \end{cases}$$

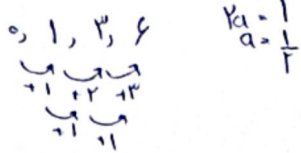
$$\frac{3}{2} - \frac{1}{2} + c = 1$$

$$c = 0$$

$$t_n = \frac{3}{2}n^2 - \frac{1}{2}n \Rightarrow$$

$$t_{10} = \frac{3}{2} \cdot 10^2 - \frac{1}{2} \cdot 10 = 145$$

(سوال ۲)



$$a_1 = 1$$

$$a = \frac{1}{2}$$

$$\begin{cases} a+b+c=0 \\ 2a+2b+c=1 \\ 3a+b=1 \\ 2(\frac{1}{2})+b=1 \\ \frac{1}{2}+b=1 \\ b=\frac{1}{2} \end{cases}$$

$$t_n = \frac{1}{2}n^2 - \frac{1}{2}n$$

$$\frac{1}{2}n^2 - \frac{1}{2}n = 55$$

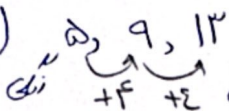
$$\frac{1}{2}n(n-1) = 55$$

$$n(n-1) = 110$$

(C=0)

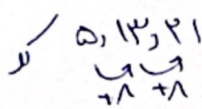
$$t_{11} = 55$$

(سوال ۳)



$$t_n = f(n+1) \Rightarrow f(11) + 1 = 45$$

$$f(5) + 10 = 14$$



$$t_n = 11n - 3 \Rightarrow 11n - 3 = 115$$

(سوال ۴)

$$a_1 = -1 \rightarrow \text{کوتنرین}$$

$$a_2 = \frac{1}{2} \rightarrow \text{بزرگترین}$$

$$a_3 = -\frac{1}{3}$$

$$a_4 = \frac{1}{4}$$

$$\frac{3}{2}$$

(سوال ۵)

$$b_n = (-3)^n - 21 \Rightarrow -27 - 21 \Rightarrow -48$$

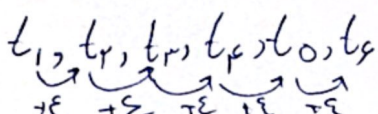
$$a_n = -5n + 22 \Rightarrow -28$$

$$-5n > 0$$

$$n = 14 \rightarrow K \geq 14$$

(سوال ۶)

$$\frac{12}{t_{10} - t_7} = \frac{12}{3} = 4$$



$$2 \times 4 = 8$$

سوال ٧) $a_r = 7$
 $a_r = 10$

$$\frac{10-7}{r} = \frac{1}{r} = F$$

$$r(r) + b = 7$$

$$1 + -1 = 7$$

$$r_{n-1}$$

$$r_1 = 7$$

$$r_2 = 11$$

$$r, 11$$

$$+1/b_n = 1/n - 5$$

سوال ٨) $t_n = \frac{7}{5}, \frac{9}{7}, \frac{10}{9}, \frac{11}{11}$

$$\frac{r_n - 7}{r_n + 3} < \frac{7}{7}$$

$$r_n + 7 < 11n - 5$$

$$11 < r_n$$

$$\frac{11}{r} < n$$

$$n < \frac{11}{r}$$

سوال ٩) $t_n = 8, 9, 9, 9, 0, \dots$

$$+7 + 0 - 7 - 9$$

$$+7 - 7 - 7$$

$$k_1 = -7$$

$$a = -\frac{7}{r}$$

$$a + b + c = 7$$

$$7a + 7b + c = 9$$

$$7a + b = 7$$

$$-\frac{7}{r} + b = 7$$

$$b = 7 + \frac{7}{r} = \frac{10}{r}$$

$$7A + 5B$$

$$7\left(-\frac{7}{r}\right) + 5\left(\frac{10}{r}\right) \Rightarrow \frac{-49}{r} + \frac{50}{r} = \frac{1}{r} = \frac{77}{r} = \boxed{77}$$

سوال ١٠) $t_n = -5, -7, 0, \dots$

$$+7 + 7$$

$$+7$$

$$7a = 7$$

$$a = 1$$

$$a_r = 71$$

$$a_F = 71 \Rightarrow \frac{71 - 71}{r} = \frac{10}{r} = 10$$

$$b_n = 10n + 71$$

$$n^2 - n - 6$$

$$n^2 - n - 6 = 10n + 71$$

$$n^2 - n - 10n = 71 + 6$$

$$n^2 - 11n = 77$$

$$n(n - 11) = 77$$

$$7 \leftarrow 7 \leftarrow$$

١٩٥٤

$$a + b + c = -5$$

$$7a + 7b + c = -5$$

$$7a + b = 7$$

$$7 + b = 7$$

$$b = 0$$

$$1 - 7 + c = -5$$

$$c = -5$$