

$$a_n = 1, 5, 12, 22, \dots$$

$$0+1, 1+4, 5+9, 12+16, \dots$$

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

$$a_2 = \frac{1 \times 9}{2} + 1 = 5$$

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$$0, 1, 3, \dots$$

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

$$a_2 = \frac{n(n-1)}{2}$$

$$11 = \frac{n(n-1)}{2} \Rightarrow n = 11$$

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$$a_n = 5, 12, 22, \dots$$

$$a_n = 11n - 3 \Rightarrow \text{کل می شود}$$

$$a_{11} = 11 \times 11 - 3 = 118$$

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$$b_n = 5, 9, 13, \dots$$

$$b_n = 4n + 1 \Rightarrow \text{رنگ می شود}$$

$$a_1 = \frac{-1}{1} = -1 \Rightarrow \text{کوچکترین}$$

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

هر چه توان بیشتر می شود به ۰ نزدیک می شود

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$$b_n = (-1)^n - v_n \xrightarrow{n=3} -1 - 2 = -3$$

$$a_n = -2n + 22$$

$$-2n + 22 = -4$$

$$v_0 = 26$$

$$n = 14$$

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$$a_1 - a_0 = 12$$

$$a_1 = a_0 + rd \rightarrow rd = 12 \quad d = 4$$

$$a_9 - a_0 = ?$$

$$a_9 - a_0 = a_0 + 9d - a_0 = 9d = 36$$

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$$a_2 = v = a + d$$

$$a_1 = b_1$$

$$b_n = ?$$

$$b_1 = 12, b_2 = b_1 + d = 12 + d = 11$$

$$a_2 = 10 = a + 2d$$

$$a_n = b_n$$

$$d = 1 = b_2 - b_1$$

$$1 = rd$$

$$d = 1$$

$$a = 9$$

$$a_2 = a + 2d = 9 + 2 = 11$$

$$b_n = 11 - n$$

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$$t_n = \frac{r}{2} > \frac{q}{v} > \frac{10}{9} > \frac{14}{11} > \dots$$

$$t_n = \frac{14n-2}{2n+2}$$

$$\frac{14n-2}{2n+2} < \frac{r}{2}$$

$$r(14n-2) < 2(2n+2)$$

$$14n-2 < 4n+4$$

$$2n < 14$$

$$n < 7$$

$n = 1, 2, 3, 4, 5, 6$
معدلهای n و q عدد

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

$$t_n = An^2 + Bn$$

$$a_1 = 4 = A + B$$

$$12 = 4A + 3B$$

$$-12 = 2A$$

$$A = -6$$

$$B = 16$$

$$3 \times (-6) + 16 \times 1 = -18 + 16 = -2$$

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$$t_n = -4, -4, 0, \dots \rightarrow t_n = n^2 - n - 4$$

$$a_r = 41 \quad a_s = 41 \rightarrow a_r = a_1 + rd \Rightarrow 41 = 1 + rd \rightarrow d = 40$$

$$a + d \rightarrow a = 1$$

$$a_n = 2n + 1$$

$$2n + 1 = n^2 - n - 4 \rightarrow n^2 - 3n - 5 = 0 \rightarrow (n-9)(n+4) = 0$$

$$n = 9$$

$$a_9 = 40 + 1 = 41$$

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