

۱، ۵، ۱۲، ۲۲، ... $\rightarrow a_n = an^2 + bn + c$

$\begin{matrix} 1 & 5 & 12 & 22 \\ +4 & +7 & +10 \\ +4 & +3 & +2 \end{matrix}$

$2a = 3 \rightarrow a = 1.5$

$1.5 + b + c = 1$

$c = -b - 0.5$

$4 \times (1.5) + 2b - b - 0.5 = 5 \rightarrow 4 + b = 5.5$

$1.5n^2 = 0.5n \rightarrow 1.5(100) - 0.5(100) = 100$

$c = 0 \leftarrow b = -0.5$

ساده = سید - کل

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

$\frac{n^2}{2} - \frac{n^2+n}{2} \rightarrow \frac{n^2-n}{2} = 55 \rightarrow n^2-n = 110 \rightarrow n^2-n-110=0 \rightarrow (n-11)(n+10)=0$

$n=11$

(۲) تعداد مثلث ها $\rightarrow 1, 4, 9, \dots$ مربع
تعداد مثلث ها، سید $\rightarrow 1, 3, 6, \dots$ مثلث

$(4 \times 11) - 1 = 45 \leftarrow$ هر روز شکل ۱۱

$a_n = 4n + 1$

(۳) تعداد هر هفت روز $\rightarrow 1, 3, 5, 7, 9, \dots$

$(4 \times 11) - 4 = 40 \leftarrow$ هر سید شکل ۱۱

$a_n = 4n - 4$

تعداد هر هفت روز $\rightarrow 1, 3, 5, 7, 9, \dots$

$45 + 40 = 85 \leftarrow$ کل هر هفت روز $\rightarrow 85 + 45 = 130$

$\frac{1}{1}, \frac{1}{3}, \frac{1}{5}, \frac{1}{7}$
 $\frac{1}{2}, \frac{1}{4}, \frac{1}{6}$

$\frac{1}{2} \rightarrow$ نزول
 $-1 \rightarrow$ صعود

$\frac{1}{2} - (-1) = \frac{3}{2} = 1.5$

$(-3)^3 - \sqrt{3} = -27 - 1.732 = -28.732$

$a_k = -5k + 22 = -28 \rightarrow -5k = -50 \rightarrow k = 10$

$a_{10} = a_1 + 9d$

$a_1 + 9d - a_1 + 4d = 12 \rightarrow 13d = 12 \rightarrow d = \frac{12}{13}$

$a_7 = a_1 + 6d$

$a_4 = a_1 + 3d$

$a_4 - a_1 \rightarrow 3d = 20 \rightarrow d = \frac{20}{3}$



$$ar = V \quad ar + r0d = 1a \rightarrow V + rd = 1a \rightarrow rd = 1 \rightarrow d = r \quad (V)$$

$$a1 = ar - d \rightarrow V - r = r$$

$$ar \rightarrow ar + d \rightarrow V + r = 11$$

$$bn \rightarrow \underbrace{r, 11, 19, 27}_{+n} \rightarrow bn = 1n - a$$

$$\left. \begin{array}{l} \text{عند } r \rightarrow rn - r \rightarrow d = r \\ \text{عند } r \rightarrow rn + r \rightarrow d = r \end{array} \right\} \frac{rn - r}{rn + r} < \frac{r}{r} \quad \text{لـ } r \quad (1)$$

$$r(rn - r) < r(rn + r) \rightarrow rn - r < rn + r \quad n < r/d$$

$$tn = 4, 9, 9, 4, 0, \dots \quad tn = an^2 + bn \rightarrow c = 0 \quad (9)$$

$$\begin{array}{l} a + b = 4 \\ -1 \cdot 0 + b = 4 \rightarrow b = 4 \end{array}$$

$$ra = -r \quad a = -1 \cdot d$$

$$ra + ab = r(-1 \cdot d) + a(4 \cdot d) = -rd + 4rd = 3rd$$

$$tn = -4, -9, 0, \dots \quad an^2 + bn + c \rightarrow a + b + c = -4 \rightarrow c = -b - 4 \quad (10)$$

$$ra = r \rightarrow a = 1$$

$$ra + rb - b - 4 = -r \rightarrow b = -1$$

$$tn = n^2 - n - 4$$

$$9a + rb - b - 4 = 0 \rightarrow rb = -r \rightarrow b = -1$$

$$ar - ar = r0d \rightarrow r1 - r1 = 1 \cdot 0 = r0d \quad d = 0$$

$$1 + (-1) + c = 4 \rightarrow c = 4$$

$$2n + r1$$

$$n^2 - n - 4 = 2n + r1$$

$$n^2 - 3n - 2V = 0$$

$$(n - 4)(n + 2) = 0 \quad n \rightarrow 4 \rightarrow 44 = 15 \cdot 10$$

$$B = 10 \cdot 10$$

$$2 \cdot 2 \rightarrow X \cdot n \geq 0$$