

(۱) (۲) (۳) (۴)
 $\{1\} \{2,3,4\} \{5,6,7,8,9\} \{10,11,12,13,14,15,16\}$ (شماره رسته) = عدد مربع کامل رسته

۹ رسته $\rightarrow 9^2 = 81 \rightarrow$ عدد آخر $1 = 1 + 4 + 9 + 16 + 25 + 36 + 49 = 131$ عدد اول

(۲) $\{k_2, \dots, k_k\} \{k_k+1, \dots, k_k+3\} \{k_k+4, \dots, k_k+12\} \{k_k+13, \dots, k_k+39\}$

$\{11k+1, \dots, 11k+10\}$ $k=1$ $\frac{11 \times 11 + 11}{2} = 121$

$a_0 \rightarrow k \rightarrow k=0 \rightarrow 1$
 $a_1 \rightarrow k+1 \rightarrow k=0 \rightarrow 4$
 $a_2 \rightarrow k+2 \rightarrow k=0 \rightarrow 1+9$
 $a_3 \rightarrow k \rightarrow k=1 \rightarrow 4$
 $a_4 \rightarrow k+1 \rightarrow k=1 \rightarrow 9$
 $a_5 \rightarrow k+2 \rightarrow k=1 \rightarrow 1+9$
 $a_6 \rightarrow k \rightarrow k=2 \rightarrow 16$
 $a_7 \rightarrow k+1 \rightarrow k=2 \rightarrow 25$
 $a_8 \rightarrow k+2 \rightarrow k=2 \rightarrow 1+16$
 $a_9 \rightarrow k \rightarrow k=3 \rightarrow 36$
 $a_{10} \rightarrow k+1 \rightarrow k=3 \rightarrow 49$
 $a_{11} \rightarrow k+2 \rightarrow k=3 \rightarrow 1+36$

$a_n = an^2 + bn + c$ $a_0 = 1$ $a_1 = 4$ $a_2 = 10$ $a_3 = 16$
 $a = \frac{1}{1} \times -1 = -1$ $a_{10} = -1(10)^2 + 40 - 1 = -1$ $a_1 = \frac{1}{1} + 4 - 1 = 4$

$-a + 4b + c = 1$ $\begin{cases} ab + c = 4 \\ vb + c = 10 \end{cases}$ $vb = 6 \rightarrow b = 6$ $\frac{1}{1} = 1$
 $-\frac{1}{1} + 4 \times 6 + c = 1$ $24 + c = 1$ $c = -23$

$a_1 + 3d$ $a_1 + 10d$ $a_1 + 10d - a_1 + 3d = 7d$ $d = 0$ $a_1 = 0$

$a_n = 0 + 10dn + \frac{n(n-1)}{2} \times 7$ $a_{10} = 0 + 10 \times 10 + \frac{10 \times 9}{2} \times 7 = 145$ $\frac{145}{10} = 14.5$

$a_r = n$ $a_{r+1} = a_r + d$ $a_{r+2} = a_r + 2d$ $a_{r+3} = a_r + 3d$ $a_{r+4} = a_r + 4d$ $a_{r+5} = a_r + 5d$ $a_{r+6} = a_r + 6d$ $a_{r+7} = a_r + 7d$ $a_{r+8} = a_r + 8d$ $a_{r+9} = a_r + 9d$ $a_{r+10} = a_r + 10d$ $a_{r+11} = a_r + 11d$ $a_{r+12} = a_r + 12d$ $a_{r+13} = a_r + 13d$ $a_{r+14} = a_r + 14d$ $a_{r+15} = a_r + 15d$ $a_{r+16} = a_r + 16d$ $a_{r+17} = a_r + 17d$ $a_{r+18} = a_r + 18d$ $a_{r+19} = a_r + 19d$ $a_{r+20} = a_r + 20d$ $a_{r+21} = a_r + 21d$ $a_{r+22} = a_r + 22d$ $a_{r+23} = a_r + 23d$ $a_{r+24} = a_r + 24d$ $a_{r+25} = a_r + 25d$ $a_{r+26} = a_r + 26d$ $a_{r+27} = a_r + 27d$ $a_{r+28} = a_r + 28d$ $a_{r+29} = a_r + 29d$ $a_{r+30} = a_r + 30d$ $a_{r+31} = a_r + 31d$ $a_{r+32} = a_r + 32d$ $a_{r+33} = a_r + 33d$ $a_{r+34} = a_r + 34d$ $a_{r+35} = a_r + 35d$ $a_{r+36} = a_r + 36d$ $a_{r+37} = a_r + 37d$ $a_{r+38} = a_r + 38d$ $a_{r+39} = a_r + 39d$ $a_{r+40} = a_r + 40d$ $a_{r+41} = a_r + 41d$ $a_{r+42} = a_r + 42d$ $a_{r+43} = a_r + 43d$ $a_{r+44} = a_r + 44d$ $a_{r+45} = a_r + 45d$ $a_{r+46} = a_r + 46d$ $a_{r+47} = a_r + 47d$ $a_{r+48} = a_r + 48d$ $a_{r+49} = a_r + 49d$ $a_{r+50} = a_r + 50d$ $a_{r+51} = a_r + 51d$ $a_{r+52} = a_r + 52d$ $a_{r+53} = a_r + 53d$ $a_{r+54} = a_r + 54d$ $a_{r+55} = a_r + 55d$ $a_{r+56} = a_r + 56d$ $a_{r+57} = a_r + 57d$ $a_{r+58} = a_r + 58d$ $a_{r+59} = a_r + 59d$ $a_{r+60} = a_r + 60d$ $a_{r+61} = a_r + 61d$ $a_{r+62} = a_r + 62d$ $a_{r+63} = a_r + 63d$ $a_{r+64} = a_r + 64d$ $a_{r+65} = a_r + 65d$ $a_{r+66} = a_r + 66d$ $a_{r+67} = a_r + 67d$ $a_{r+68} = a_r + 68d$ $a_{r+69} = a_r + 69d$ $a_{r+70} = a_r + 70d$ $a_{r+71} = a_r + 71d$ $a_{r+72} = a_r + 72d$ $a_{r+73} = a_r + 73d$ $a_{r+74} = a_r + 74d$ $a_{r+75} = a_r + 75d$ $a_{r+76} = a_r + 76d$ $a_{r+77} = a_r + 77d$ $a_{r+78} = a_r + 78d$ $a_{r+79} = a_r + 79d$ $a_{r+80} = a_r + 80d$ $a_{r+81} = a_r + 81d$ $a_{r+82} = a_r + 82d$ $a_{r+83} = a_r + 83d$ $a_{r+84} = a_r + 84d$ $a_{r+85} = a_r + 85d$ $a_{r+86} = a_r + 86d$ $a_{r+87} = a_r + 87d$ $a_{r+88} = a_r + 88d$ $a_{r+89} = a_r + 89d$ $a_{r+90} = a_r + 90d$ $a_{r+91} = a_r + 91d$ $a_{r+92} = a_r + 92d$ $a_{r+93} = a_r + 93d$ $a_{r+94} = a_r + 94d$ $a_{r+95} = a_r + 95d$ $a_{r+96} = a_r + 96d$ $a_{r+97} = a_r + 97d$ $a_{r+98} = a_r + 98d$ $a_{r+99} = a_r + 99d$ $a_{r+100} = a_r + 100d$

$$\begin{aligned}
 & \text{وحي} \\
 & c, b, a \xrightarrow{\substack{+d \\ +d}} \rightarrow \frac{c}{f}, \frac{a}{r}, b \rightarrow \frac{-1}{r}d, \frac{1}{r}d, -\frac{1}{r}d \quad (r) \\
 & b = c + d \rightarrow \frac{1}{r}d \quad \frac{c}{f}, \frac{c+rd}{r}, c+d \rightarrow (c+d) \left(\frac{c}{f}\right) = \left(\frac{c+rd}{r}\right)^r \\
 & a = c + rd \rightarrow \frac{r}{f}d \quad \frac{c^r}{f} + \frac{cd}{f} = \frac{c^r + rcd + rcd}{f} \\
 & c^r + cd = c^r + rcd + rcd \quad rcd = rcd \quad c = -\frac{r}{f}d \quad q = -1 \quad r q = -r
 \end{aligned}$$

$$\frac{a_1 q^{\omega}}{(a_1 q)^r} + \frac{a_1 q}{(a_1)^r} = r \rightarrow \frac{q^r}{a_1^r} + \frac{a_1 q}{a_1^r} = r \rightarrow a_1 q + q^r = r a_1^r \quad (9)$$

$$a_1 q + q^r - r a_1^r = 0$$

$$q = \frac{-a_1 \pm \sqrt{a_1^r + r a_1^r}}{r} \rightarrow \begin{cases} a_1 \Rightarrow a_1^r = a_1^r \\ r a_1 \Rightarrow a_1^r = -r a_1 \end{cases}$$

$$\frac{a^r}{a_1^r} = 1 \quad \frac{a_1^r}{-r a_1^r} = -\frac{1}{r}$$

$$a \omega = r v \quad a_1^r = a_1^r \quad a_1^r = \frac{r v}{q^r} \quad (a q^r)^r = a^r q^r = \frac{r v}{q} \quad (10)$$

$$\left(\frac{r v}{q^r}\right)^r = \frac{r v}{q} \rightarrow r v q^r = r v^r \quad \therefore r v = q^r \rightarrow q = r$$

$$a_1 = \frac{a \omega}{q^r} = \frac{r v}{11} = \frac{1}{r} \quad \frac{1}{r} - \frac{1}{r} = \frac{1}{r}$$

معدى a, b, c $\frac{a q}{a q} = q^r$ $c, r a, r b$ (11)

$$\frac{b}{q}, b, b q \rightarrow (-r)^r = -r^r \quad b q, \frac{r b}{q}, r b \rightarrow \frac{r b}{q} - b q = r b - \frac{r b}{q}$$

$$-b q^r + r b = r b q$$

$$-b q^r - r b q + r b = 0$$

$$q = \frac{\pm r b \pm \sqrt{9 b^r + 12 b^r}}{-r b} = r \omega b^r \rightarrow \begin{cases} 1 \times \\ -r \checkmark \end{cases}$$

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

$$\frac{-b q^r + r b}{q} = r b$$

