

$$1, 4+1, 9+3, 16, \dots \quad n^2 + \frac{n(n-1)}{2} = \frac{3n^2}{2} - \frac{n}{2} \quad /_{\frac{1}{2}} \quad 1.5n^2 - 0.5n$$

$$a_{10} = \frac{3(10)^2}{2} - \frac{10}{2} = 150 - 5 = \boxed{145}$$

$$0, 2, 4, \dots \quad \frac{n(n-1)}{2} = 55 \rightarrow n(n-1) = 110 = 11 \times 10 \rightarrow \boxed{n=11}$$

$$\begin{aligned} \text{مره زلی} &\rightarrow 5, 9, 13, \dots \rightarrow f_{n+1} \rightarrow \text{در شکل ۱۱ ام} = 4(11) + 1 = \boxed{45} \\ \text{مره سفید} &\rightarrow 0, 4, 8, \dots \rightarrow f_{n-4} \rightarrow \text{در شکل ۱۱ ام} = 4(11) - 4 = \boxed{40} \end{aligned} \quad + \quad = 85$$

$$\begin{aligned} \text{کل مره ها} &\rightarrow 5, 13, 21, \dots \rightarrow 8n - 3 \rightarrow \text{در شکل ۱۱ ام} = 8(11) - 3 = \boxed{85} \\ (\text{سفید} + \text{زلی}) & \end{aligned}$$

$$\frac{(-1)^n}{n} \rightarrow a_1 = (-1) \text{ کد چکرین جمله} \quad a_2 = \frac{(-1)^2}{2} = \frac{1}{2} \text{ بزرگترین جمله} \quad \Rightarrow \frac{1}{2} - (-1) = \frac{3}{2} \rightarrow \boxed{1.5}$$

$$b_3 = (-3)^3 - 7(3) = -27 - 21 = (-48) \rightarrow -48 = -5K + 22 \rightarrow -70 = -5K \rightarrow \boxed{K=14}$$

$$a_0 - a_v = a_v + r d - a_v = r d = 1r \rightarrow d = r, a_f - a_1 = a_1 + \omega d - a_1 = \omega d \rightarrow \omega(f) = r$$

$$t_v = v, t_f = 1\omega \leadsto t_f - t_v = t_v + r d - t_v = r d = 1\omega - v = 1 \rightarrow d = f \leadsto t_v = v = f(r) + b \rightarrow b = (-1)$$

$$t_n = f n - 1 \leadsto t_1 = f(1) - 1 = r, t_r = f(r) - 1 = 1 \leadsto \begin{matrix} r, 1, \dots \\ a_1, a_r \end{matrix} \rightarrow \begin{matrix} b_n = \Lambda n - \omega \\ b_n = \Lambda(n-1) + r \end{matrix}$$

$$t_n = \frac{f n - r}{r n + r} \leadsto \frac{f n - r}{r n + r} < \frac{r}{r} \rightarrow \Lambda n - f < r n + 1 \leadsto r n < 1r \rightarrow n < r/\omega \leadsto \text{دالة } f$$

$$\odot, 4, 9, 9, 4, 0, \dots$$

$$\begin{matrix} +r & +0 & -r & -f \\ -r & -r & -r & \end{matrix} \leadsto r a = -r \rightarrow \alpha = \frac{-r}{(A) \quad r}, C=0 \rightarrow A n^r + B n \rightarrow a_1 = \frac{-r}{r} + B = 4 \rightarrow B = \frac{1\omega}{r}$$

$$a_n = \frac{-r}{r} n^r + \frac{1\omega}{r} n \rightarrow r A + \omega B = r(-\frac{r}{r}) + \omega(\frac{1\omega}{r}) = \frac{-r}{r} + \frac{r\omega}{r} = 33$$

$$a_r = r1, a_f = f1 \leadsto a_f = a_r + r d \rightarrow a_f - a_r = a_r + r d - a_r = r d = f1 - r1 = 1\omega \rightarrow r d = 1\omega \rightarrow d = \omega$$

$$a_f = \omega(r) + b = r1 \rightarrow b = r1 \leadsto a_n = \omega n + r1$$

$$t_1 = 1 + b - 4 = -4 \leadsto b = (-1) \leadsto t_n = n^r - n - 4$$

$$n^r - n - 4 = \omega n + r1 \rightarrow n^r - 4n - r1 = 0 \leadsto (n-9)(n+r) = 0 \rightarrow \begin{matrix} n=9\checkmark \\ n=-r \times \text{غير ممكن} \end{matrix} \rightarrow a_9 = t_9 = f\omega + r1 = 44$$

$$\begin{matrix} -4 & -4 & -f & 0 & \dots \\ +0 & +r & +f \\ +r & +r & \end{matrix} \rightarrow a=1, c=-4$$