

طبق شکل

$$a_n = n^2 + \frac{n(n-1)}{2} \Rightarrow 10^2 + \frac{10 \times 9}{2} = 145 = a_{10}$$

مربعی + یک مربع

مربعی یکی قبل n

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

$$\frac{n(n-1)}{2} = 55 \Rightarrow n=11$$

مربعی یکی قبل n

مهره های رنگی

$$a_n = 4n + 1$$

$$a_{11} = 4 \times 11 + 1 = 45$$

مهره های سفید

$$a_n = 4n - 4$$

$$a_{11} = 4 \times 11 - 4 = 40$$

کل مهره ها

$$a_n = 8n - 3$$

$$a_{11} = 8 \times 11 - 3 = 85$$

بزرگترین و مثبت باشد

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

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

کوچکترین و منفی باشد

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

$$a_1 = \frac{(-1)^1}{1} = -1 \Rightarrow n=1$$

$$b_n = (-1)^n - V_n \Rightarrow b_{11} = (-1)^{11} - 11 = -12$$

$$a_n = -5n + 11$$

$$-5n + 11 = -12 \Rightarrow n=14$$

$$a_{10} - a_V = w_d = 1^N \Rightarrow d = r$$

$$a_4 - a_1 = \Delta d = \Delta \times r = 1^0$$

$$a_p = V \quad a_f = 1A \quad a_f - a_p = r_d = 1A - V = 1 \Rightarrow d = r$$

$$a_p = a_1 + d \quad a_1 = V - r = w \quad a_p = a_1 + r_d = w + 1 = 11$$

$$b_1 = w \quad b_p = 11 \quad b_p - b_1 = d = 11 - w = 1$$

$$b_n = 11n - d$$

b_1	b_p	b_p	r
w	11	19	
b_f	$\dots$	b_n	
1^V		$11n - d$	

$$t_n = \frac{1}{d}, \frac{1}{V}, \frac{1}{q}, \frac{1}{11}$$

$$\Rightarrow t_n = \frac{r_n - r}{r_n + w - n - 41A}$$

$$\frac{r_n - r}{r_n + w} < \frac{w}{r - r} \quad \frac{r_n - r}{r_n + w} - \frac{w}{r} < 0 \quad \frac{r_n - r_n - r - r1A}{r_n + w} < 0$$

$$t_n = An^N + Bn$$

$$NA = -w \Rightarrow A = -\frac{w}{r}$$

$$an^r + bn + c$$

$$c = 0$$

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

$$(-\frac{w}{r}) \times w + A(\frac{1A}{r}) = \frac{4r}{r} = 4$$

$$t_1 = A + B$$

$$\Rightarrow 4 = -\frac{w}{r} + B$$

$$B = \frac{1A}{r}$$

$$a_p = 1^1$$

$$a_f - a_p = r_d = 1 - 1^1 = 0$$

$$t_n = -4, -r, 0, 0, \dots$$

$$a_f = 1^1 \Rightarrow d = 0$$

$$t_n = an^N + bn + c$$

$$\Rightarrow 1^0 = 1$$

$$a_p = a_1 + d$$

$$t_0 = c \Rightarrow c = -4$$

$$a = 1$$

$$1^1 \Rightarrow a_1 = 1^1$$

$$t_1 = a + b + c$$

$$\Rightarrow 1 - 4 + b = -4$$

$$\Rightarrow a_n = \Delta n + 1$$

$$t_n = +n^N - n - 4$$

$$\Rightarrow 1 - 4 + b = -4$$

$$a_n = t_n = n^N - n - 4 = \Delta n + 1$$

$$b = -1$$

$$a_q = t_q = \Delta \times q + 1 = 44$$

$$\Rightarrow n^N - 4n + -1^V = 0$$

$$(n - 4)(n + w) = 0$$

$$\Rightarrow n = -w \quad n = 4 \checkmark$$