

- 1 → 1
2 → 2
3 → 12
4 → 20
5 → 30

مشتق (n-1) درج

$$a_n = n^r + \frac{n(n-1)}{2} \rightarrow \frac{n^r + 2n^r - n}{2} = \frac{3n^r - n}{2}$$

$$t_{10} = \frac{300 - 10}{2} = \frac{290}{2} = 145$$



19, 20 آفرین

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10

- 1 → 0
2 → 1
3 → 3
4 → 6

→ 0+0+1, 0+1+2, ..., 0+1+2+...+n-1

$$\rightarrow 0+1+2+\dots+n-1 \rightarrow a_n = \frac{(n-1)(n-1+1)}{2} a_{00} = \frac{00(00)}{2} = 1410$$

$$\frac{n(n-1)}{2} = 00 \rightarrow n^2 - n - 110 = 0 \rightarrow (n-11)(n+10) = 0$$

$$1 = 2a \rightarrow a = \frac{1}{2}$$

n > 0 → n = 11

$$a_n = an^r + bn + c \rightarrow \frac{n^r}{2} + bn + c \rightarrow \frac{n^r}{2} - \frac{n}{2} + c \rightarrow \frac{n(n-1)}{2}$$

$$\begin{cases} 1 = \frac{a}{2} + 3b + c \\ 1 = 2 + 2b + c \end{cases} \rightarrow 2 = b + 2c \rightarrow b = \frac{1}{2}$$

$$\begin{cases} 1 = 2 + 2b + c \\ 0 = \frac{1}{2} + b + c \end{cases} \rightarrow 1 = \frac{3}{2} + b \rightarrow b = -\frac{1}{2} \Rightarrow c = \frac{a}{2} - \frac{1}{2} + c \rightarrow c = 0$$

- 1 → 0 → 0
2 → 4 → 12
3 → 12 → 24
4 → 16 → 24

$$\begin{aligned} a_{11} &= 44 + 1 = 45 \\ b_{11} &= 11 - 1 = 10 \end{aligned}$$

$$a_n = 0 + fn - f \rightarrow fn + 1$$

$$b_n = 0 + 1n - 1 \rightarrow 1n - 1$$

$$a_n = \frac{(-1)^n}{n} \rightarrow -1, \frac{1}{2}, -\frac{1}{3}, \frac{1}{4}, \dots$$

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

3/2 ارفاق

$$b_n = (-2)^n - 2n \rightarrow b_4 = (-2)^4 - 2 \cdot 1 \rightarrow 16 - 2 = 14$$

$$a_n = -2n + 22 \rightarrow a_k = -2k + 22$$

$$L \rightarrow 22 - 2k = 14 \rightarrow -2k = 14 - 22 \rightarrow -2k = -8 \rightarrow 2k = 8 \rightarrow k = 4$$

$$a_{10} - a_v = 1r$$

$$a_v + r d - a_v = 1r \rightarrow d = r$$

$$a_u - a_1 \rightarrow a_1 + \omega d - a_1 \rightarrow \omega d$$

$$\hookrightarrow \omega d = 1r \quad \checkmark$$

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$$a_r = v \quad (1r = 1\omega)$$

$$\begin{cases} 1\omega = a_1 + r d \\ v = a_1 + d \end{cases} \rightarrow r d = 1 \rightarrow d = r \quad a_n = v + r n - r \rightarrow r n - 1$$

1, \Delta

$$b_n = v + (n-1)d$$

$$\begin{cases} b_1 = v \\ b_r = b_1 + r d - v + r d = 1\omega \rightarrow r d = 1 \quad d = r \end{cases} \quad a_n = r n - 1 \rightarrow a_1 = r > a_r = 11$$

$$b_n = C n + d \rightarrow \begin{cases} b_1 = C + d = r \\ b_r = r C + d = 11 \end{cases} \rightarrow C = 1, D = -1 \rightarrow b_n = n - 1$$

$$b_n = v + r n - r \rightarrow r n + r$$

$$t_n = \frac{v}{a}, \frac{a}{v}, \frac{1}{q}, \frac{1}{11}, \dots \rightarrow$$

$$\hookrightarrow t_n = \frac{r + (n-1)r}{\omega + (n-1)r} \rightarrow \frac{r n - r}{r n + r}$$

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$$\frac{r n - r}{r n + r} = \frac{r}{r} \rightarrow a_n + q = 1n - r \rightarrow 1r = r n \rightarrow n = 1, \omega$$

$$n \leq 4$$

$$t_n = 4, 9, 9, 4, 0, \dots \rightarrow r d = -r \rightarrow a = -\frac{r}{r}$$

$$r(-\frac{r}{r}) + \omega(\frac{1\omega}{r}) \Rightarrow -\frac{r}{r} + \frac{v\omega}{r} = \frac{44}{r} \Rightarrow 44$$

$$a_n^r + b n + c \rightarrow -\frac{r}{r} + b n + c$$

$$\begin{cases} 4 = -a + r b + c \\ 4 = -\frac{r}{r} + b + c \end{cases} \rightarrow 4 = -r, \omega + b \rightarrow b = \frac{v\omega}{r}$$

$$\hookrightarrow c + 4 = -\frac{r}{r} + \frac{1\omega}{r} + c$$

$$\hookrightarrow c = 0$$

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

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

$$a_n = n^r + b n + c \rightarrow n^r - n - 4$$

$$\begin{cases} -4 = 1 + b + c \\ -4 = r + r b + c \end{cases} \rightarrow r = r + b \rightarrow b = -1$$

$$c = -4$$

$$b_r = r 1$$

$$b_r = r 1$$

$$\begin{cases} r 1 = b_1 + r d \\ r 1 = b_1 + d \end{cases} \rightarrow 1\omega = r d \rightarrow d = \omega$$

$$\hookrightarrow r 1 = b_1 + \omega \rightarrow b_1 = r 4$$

$$b_n = r r + (n-1)\omega$$

$$\hookrightarrow \omega n + r 1$$

$$r 4, r 1, r 4, r 1, \dots$$

$$n^r - n - 4 = \omega n + r 1$$

$$n^r - a_n = r v$$

$$n(n-4) \rightarrow n = r$$

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