

漸化式基本

教科書 p.97,98



漸化式とは?

⇒ 項と項の間、**関係式**

(ex) $a_1 = 1, a_{n+1} = 2a_n + 3$ ($n = 1, 2, 3, \dots$)

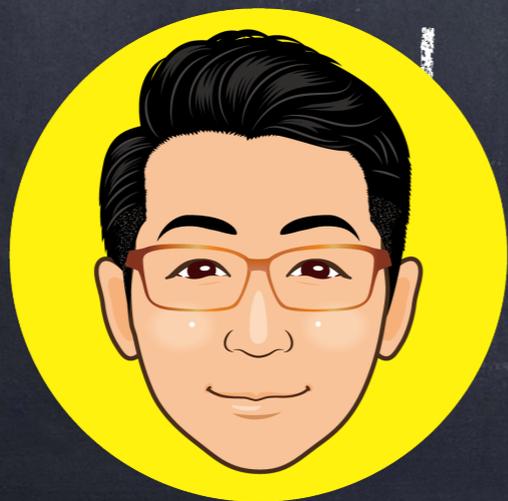
$$\begin{aligned} a_2 &= 2a_1 + 3 \\ &= 2 \cdot 1 + 3 \\ &= 5 \end{aligned}$$

$$a_2 = 5$$

$$\begin{aligned} a_3 &= 2a_2 + 3 \\ &= 2 \cdot 5 + 3 \\ &= 10 + 3 \end{aligned}$$

$$a_3 = 13$$

順番に
求めていく
ことが
できる!!



一般項はどのようになる?!

☆ 漸化式の型を判断する! (重要!!)

① $a_1 = 2, a_{n+1} = a_n + 3$

$$a_2 = a_1 + 3 = 5$$

$$a_3 = a_2 + 3 = 8$$

⋮

等差数列



② $a_1 = 1, a_{n+1} = 2a_n$

$$a_2 = 2 \cdot a_1 = 2$$

$$a_3 = 2 \cdot a_2 = 4$$

⋮

等比数列

③ $a_1 = 1, a_{n+1} = a_n + \underline{2^n} \Rightarrow a_n !!$

$a_2 = a_1 + 2 = 3$ 1, 3, 7, 15, ...

$a_3 = a_2 + 2^2 = 7$ ✓ ✓ ✓

$a_4 = a_3 + 2^3 = 15$ 2 4 8

⋮

階差数列

< まとめ >



① $a_{n+1} = a_n + \underline{d}$
公差

② $a_{n+1} = r a_n$
公比

等比型

等差型

③ $a_{n+1} = a_n + b_n$

階差型