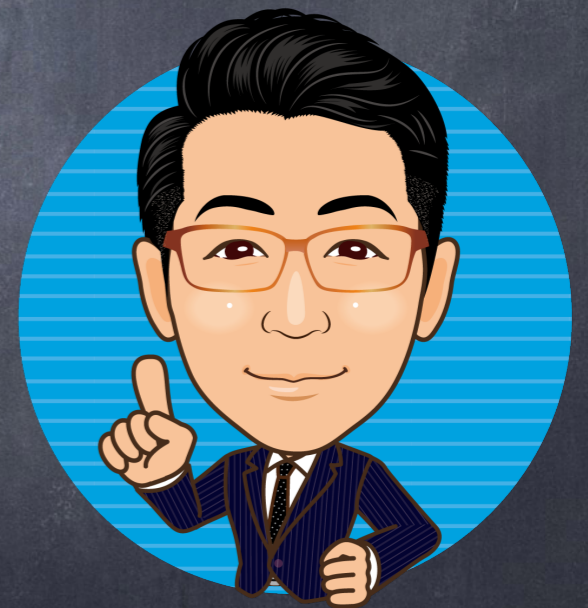


# 漸化式基本

教科書 p.97,98





# 漸化式とは?

⇒ 項と項の間、**関係式**

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

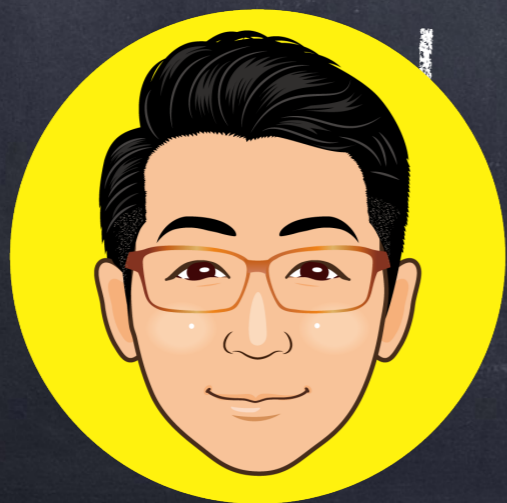
$$\begin{aligned} a_2 &= 2a_1 + 3 \\ &= 2 \cdot 1 + 3 \\ &= 5 \end{aligned}$$

$$a_2 = 5$$

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

$$a_3 = 13$$

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

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

$a_3 = a_2 + 2^2 = 7$      $\checkmark$      $\checkmark$      $\checkmark$

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

⋮

<まとめ>



①  $a_{n+1} = a_n + \underline{d}$   
公差

②  $a_{n+1} = r a_n$   
公比

③  $a_{n+1} = a_n + \ln$

階差数列

等比型

等差型

階差型