sequences

example

exercise 1

exercise 2

sequences

- Sometime, we can use an algebraic expression for the *n*-th term of a sequence
- Factorials are commonly used in sequences $n! = n(n-1)(n-2)(n-3)\cdots 1$

example

The *n*-th term of the sequences $\{1,\ 2,\ 3,\ 4,\ 5,\ 6,\ldots\}$ is given by $a_n = n$

The *n*-th term of the sequences $\{-1,\ 1,\ -1,\ 1,\ -1,\ldots\}$ is given by $a_n = (-1)^{n+1}$

exercise 1

Find a formula for the *n*-th term in the following sequence $\left\{\frac{-1}{2}, \frac{1}{3}, \frac{-1}{4}, \frac{1}{5}, \frac{-1}{6}, \ldots\right\}$

exercise 2

Find a formula for the *n*-th term in the following sequence $\left\{\frac{2}{1}, \frac{4}{2}, \frac{8}{6}, \frac{16}{24}, \frac{32}{120}, \ldots\right\}$

sequences

a_1

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

$$a_n = \left\{ \frac{2n^3 - 1)}{n^3} \right\}$$