

sequences

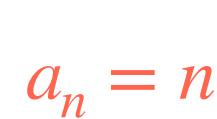


infinite

patterns













sequences

• A sequence is an list of numbers in a certain order

$$\{a_1,a_2,a_3,\ldots\}$$
 a_1 is first term a_2 is first term a_3 is first term etc.

- The sequence may be infinite
- The *n*-th term of the sequence is the *n*-th number on the list and given by $a_n = n$
- Some sequences have patterns, some do not

example

We roll a die repeatedly and generate a sequence of numbers which have no pattern.

example

The following two sequences have patterns:

$$\{1, 2, 3, 4, 5, 6, \ldots\}$$

 $\{-1, 1, -1, 1, -1, \ldots\}$

sequences

 a_1