

## Where does a sequence begin?

The numbering of the terms of a sequence (synonymously: progression) can begin anywhere, of course, but most typically it starts at either 0 or 1. There is an advantage and disadvantage to each approach. Starting from 0 can give a more compact form, but starting from 1 feels more “natural”.

Let us consider the case of arithmetic progressions. If we start at 0, then the  $n$ -th term is given by  $a + nd$ , but if we start at 1 the  $n$ -th term is  $a + (n - 1)d$ . In either case we want to call “ $a$ ” the “first” term of the progression, but if we start counting the terms at 0, then the “first” term actually corresponds to the “zero-eth” term, which of course can be confusing.

(end of document)