



## SUBSEQUENCES

### Why

We want to select particular terms of sequence.

### Definition

A *subindex* is a monotonically increasing function from and to the natural numbers. Roughly, it selects some ordered infinite subset of natural numbers. A *subsequence* of a first sequence is any second sequence which is the composition of the first sequence with a subindex.

### Notation

Let  $i : \mathbf{N} \rightarrow \mathbf{N}$  such that  $n < m \longrightarrow i(n) < i(m)$ . Then  $i$  is a subindex. Let  $b = a \circ i$ . Then  $b$  is a subsequence of  $a$ . We denote it by  $\{b_{i(n)}\}_n$  and the  $n$ th term by  $b_{i(n)}$ .



