Chapter 7 outline:

- Recursively-defined sets (last week Monday)
- Structural induction (last week Wednesday)
- Mathematical induction (Monday)
- Non-recursive programs—loops (**Today**)
- Loop invariant proofs (Friday)
- Recursively-defined sets application: The Huffman encoding (next week Monday)
- Leftover topic: Arrays, vectors, and intervals (next week Wednesday)

Last time we saw self-referential proofs for propositions quantified over the natural numbers and whole numbers (**mathematical induction**).

This time we see imperative-style programs.

Next time we see how mathematical induction can be used to prove propositions about the correctness of imperative-style programs.

Uses of **variables** (in math):

- A variable can be a convenient substitute for a specific value.
- A variable can refer to a specific, though unknown, value.
- A variable can be a place-holder for a value to be supplied by context.
- A variable can range over a set.

For next time:

Read 7.5

(No exercises or quiz)