Theorem: $P(n)$ for every positive integer n.

Proof by induction: Let n be an arbitrary positive integer.

Assume that $P(k)$ is true for every positive integer $k < n$.

There are several cases to consider:

- Suppose n is *... blah blah blah ...*
  Then $P(n)$ is true.
- Suppose n is *... blah blah blah ...*

  The inductive hypothesis implies that *... blah blah blah ...*
  Thus, $P(n)$ is true.

In each case, we conclude that $P(n)$ is true. □

Or more generally:

Bellman's Theorem: Every snark is a boojum.

Proof by induction: Let X be an arbitrary snark.

Assume that for every snark younger than X is a boojum.

There are three cases to consider:

- Suppose X is the youngest snark.

  Then *... blah blah blah ...*
- Suppose X is the second-youngest snark.

  Then *... blah blah blah ...*
- Suppose X is older than the second-youngest snark.

  Then the inductive hypothesis implies *... blah blah blah ...* and therefore *... blah blah blah ...*

An all cases, we conclude that X is a boojum. □