## Strong Induction

## Points:

- ▶ Helpful to always state what you want to prove as a boolean statement, P(n), that depends on a parameter n
- Explicitly check the base cases
- Explicitly write down your Inductive Hypothesis: For example, "Our Inductive Hypothesis is that  $P(1) \land P(2) \ldots \land P(N)$  is true for some arbitrary  $N \ge n_1$ " (where  $n_1$  is the largest base case you checked)
- Make sure your proof uses the information in your problem (e.g., if you are given a recursively defined function, use the its recursive definition)
- Make sure you show how you use the Inductive Hypothesis
- ► Make sure you justify every step (unless it is only arithmetic)