

Induction

Induction is a very general principle within proof that uses characteristics of a problem whereby it is easier to reason about how the former case varies from the next than each individual case. One often first sees induction as defined in terms of the natural numbers, although this isn't the general case.

Natural Induction

Given the family of propositions P_n for some $n \in \mathbb{N}$, if P_0 is true and for any $k \in \mathbb{N}$ we have P_k implies P_{k+1} , then for all $n \in \mathbb{N}$ we have P_n true.