Proposition 4.a.2. *[1XC]* *Let $A \supseteq \mathbb{N}$ and $P(n)$ be a logical proposition that can be evaluated for $n \in A$. Suppose the following two assumptions are satisfied:*

- *$P(n)$ is true for $n = 0$ and*

- *$\forall n \in \mathbb{N}, P(n) \Rightarrow P(S(n))$;*

then P is true for every $n \in \mathbb{N}$.

Proof. Let $U = \{n \in \mathbb{N} : P(n)\}$, we know that $0 \in U$ and that $\forall x, x \in U \Rightarrow S(x) \in U$, then from (N5) we conclude that $U = \mathbb{N}$. $\square$