

$$m \equiv n, p \leq n \rightarrow p \leq m : \forall \{p \ m \ n\} \rightarrow m \equiv n \rightarrow p \leq n \rightarrow p \leq m$$

$$m \equiv n, p \leq n \rightarrow p \leq m \quad m \equiv n \quad p \leq n \quad \text{rewrite sym} \quad m \equiv n = p \leq n$$

$$+ \rightarrow \leq : \forall \{m \ n : \mathbb{N}\} \rightarrow m \leq m + n$$

$$+ \rightarrow \leq \{\text{zero}\} \{n\} = z \leq n$$

$$+ \rightarrow \leq \{\text{suc } m\} \{n\} = s \leq s + \rightarrow \leq$$

$$+ \rightarrow \leq^r : \forall \{m \ n : \mathbb{N}\} \rightarrow m \leq n + m$$

$$+ \rightarrow \leq^r \{m\} \{n\} = m \equiv n, p \leq n \rightarrow p \leq m \ (+\text{-comm } \{n\} \{m\}) \ + \rightarrow \leq$$