Leads-To Induction

$$WellFounded(N, \_ \succ \_) \triangleq \neg\exists\, ch \in [Nat \to N] : \forall\, i \in Nat : ch[i+1] \succ ch[i]$$

$$IsMinimum(N, \_ \succ \_, z) \triangleq \begin{array}{l} \wedge \forall\, n \in N : \neg(z \succ n) \\ \wedge \forall\, m \in N \setminus \{z\} : \exists\, n \in N : m \succ n \end{array}$$

$$LTSet(N, \_ \succ \_, n) \triangleq \{m \in N : n \succ m\}$$

$$\begin{array}{l} LeadsToInduction(F(\_),\ N,\ \_ \succ \_,\ z) \triangleq \\ \quad \wedge\ WellFounded(N,\ \succ\ ) \\ \quad \wedge\ IsMinimum(N,\ \succ\ ,\ z) \\ \quad \wedge \forall\, n \in N \setminus \{z\} : F(n) \rightsquigarrow (\exists\, m \in LTSet(N,\ \succ\ ,\ n) : F(m)) \\ \quad \Rightarrow ((\exists\, n \in N : F(n)) \rightsquigarrow F(z)) \end{array}$$

CLOSE