

Inference at \* 1 1  
of proof for Lemma nat\_ind.a:

1.  $P : \mathbb{N} \rightarrow \mathbb{P}\{k\}$
  2.  $P(0)$
  3.  $\forall i:\mathbb{N}^+. P(i - 1) \Rightarrow P(i)$
  4.  $i : \mathbb{Z}$
  5.  $i < 0$
  6.  $((i + 1) \geq 0) \Rightarrow P(i + 1)$
  7.  $i \geq 0$
- $\vdash P(i)$   
by (Auto\_aux (first\_nat 1:n) ((first\_nat 2:n),(first\_nat 3:n)) (first\_tok :t) inil\_term)