

Inference at \*  
of proof for Lemma not\_over\_exists:

$\vdash \forall T:\text{Type}, Q:(T \rightarrow \mathbb{P}). (\neg(\exists x:T. Q(x))) \iff (\forall x:T. \neg Q(x))$   
by ((GenRepD)  
CollapseTHENA ((Auto\_aux (first\_nat 1:n) ((first\_nat 1:n),(first\_nat 3:n  
)) (first\_tok :t) inil\_term)))

1:

1.  $T : \text{Type}$
  2.  $Q : T \rightarrow \mathbb{P}$
  3.  $\neg(\exists x:T. Q(x))$
  4.  $x : T$
- $\vdash \neg Q(x)$

2:

1.  $T : \text{Type}$
  2.  $Q : T \rightarrow \mathbb{P}$
  3.  $\forall x:T. \neg Q(x)$
- $\vdash \neg(\exists x:T. Q(x))$