

Inference at \* 2 2 2  
of proof for Lemma member\_nth\_tl:

...falsecase.... NILNIL

1.  $T$  : Type
  2.  $n$  :  $\mathbb{Z}$
  3.  $0 < n$
  4.  $\forall x:T, L:(T \text{ List}). (x \in \text{nth\_tl}(n - 1;L)) \Rightarrow (x \in L)$
  5.  $x : T$
  6.  $T \text{ List}$
  7.  $u : T$
  8.  $v : T \text{ List}$
  9.  $(x \in \text{nth\_tl}(n;v)) \Rightarrow (x \in v)$
  10.  $0 < n$
- $\vdash (x \in \text{nth\_tl}(n - 1;\text{tl}([u / v]))) \Rightarrow (x \in [u / v])$   
by ((Reduce 0)  
CollapseTHEN (Auto·)).

1:

11.  $(x \in \text{nth\_tl}(n - 1;v))$   
 $\vdash (x \in [u / v])$