

Inference at \* 1 2  
of proof for Lemma l.before\_transitivity:

1.  $T : \text{Type}$
2.  $l : T \text{ List}$
3.  $x : T$
4.  $y : T$
5.  $z : T$
6.  $\text{no\_repeats}(T;l)$
7.  $[x; y] \subseteq l$
8.  $[y; z] \subseteq l$

$\vdash [x; y; z] \subseteq l$   
by ((((((InstLemma 'append\_overlapping\_sublists' [T;[x];[z];l;y])  
CollapseTHEN (  
  (Auto\_aux (first\_nat 1:n) ((first\_nat 1:n),(first\_nat 3:n)) (first\_tok :t) inil\_term)))  
  )  
CollapseTHEN (All Reduce)).)  
CollapseTHEN ((Auto\_aux (first\_nat 1:n) ((first\_nat  
  1:n),(first\_nat 4:n)) (first\_tok :t) inil\_term))))).