Inference at $*$ 1 2 0
of proof for Lemma l_before_antisymmetry:

1. T : Type
2. l : T List
3. x : T
4. y : T
5. no_repeats(T;l)
6. $[x; y] \subseteq l$
7. $[y; x] \subseteq l$
8. $[x; x] \subseteq l$

$\vdash$ False
by PERMUTE{1:n, 1:n, 2:n, 3:n}

1: .....wf..... NILNIL

5. $\forall x, y{:}T.\ [x; y] \subseteq l \Rightarrow (\neg(x = y))$
6. $[x; y] \subseteq l$
7. $[y; x] \subseteq l$
8. $[x; x] \subseteq l$

$\vdash x \in T$

2: .....antecedent..... NILNIL

5. $\forall x, y{:}T.\ [x; y] \subseteq l \Rightarrow (\neg(x = y))$
6. $[x; y] \subseteq l$
7. $[y; x] \subseteq l$
8. $[x; x] \subseteq l$

$\vdash [x; x] \subseteq l$

3:

5. $\forall x, y{:}T.\ [x; y] \subseteq l \Rightarrow (\neg(x = y))$
6. $[x; y] \subseteq l$
7. $[y; x] \subseteq l$
8. $[x; x] \subseteq l$
9. $\neg(x = x)$

$\vdash$ False

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