Inference at $*$ 1 2 1 2
 of proof for Lemma adjacent-append:

1. T : Type
2. x : T
3. y : T
4. L_1 : T List
5. L_2 : T List
6. i : $\{0..(\|L_1 \mathbin{@} L_2\| - 1)^-\}$
7. $x = (L_1 \mathbin{@} L_2)[i]$
8. $y = (L_1 \mathbin{@} L_2)[(i+1)]$
9. $\neg(i < \|L_1\|)$

$\vdash y = L_2[((i - \|L_1\|)+1)]$
 by ((RWO "length-append" (-4))
 CollapseTHENA (Auto·))·

1:

6. i : $\{0..((\|L_1\|+\|L_2\|) - 1)^-\}$
7. $x = (L_1 \mathbin{@} L_2)[i]$
8. $y = (L_1 \mathbin{@} L_2)[(i+1)]$
9. $\neg(i < \|L_1\|)$

$\vdash y = L_2[((i - \|L_1\|)+1)]$

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