Inference at $*$ 1 1 2 1 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. $x = L_1[i]$
8. $y = L_2[((i+1) - \|L_1\|)]$
9. $i < \|L_1\|$
10. $\neg(i < (\|L_1\| - 1))$

$\vdash$ $y = \mathrm{hd}(L_2)$
by Subst $((i+1) - \|L_1\|) \sim 0$ (-3)

1: .....equality..... NILNIL

$\vdash$ $((i+1) - \|L_1\|) \sim 0$

2:

8. $y = L_2[0]$
9. $i < \|L_1\|$
10. $\neg(i < (\|L_1\| - 1))$

$\vdash$ $y = \mathrm{hd}(L_2)$

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