Inference at $*$ 1
 of proof for Lemma linorder_lt_neg:

1. T : Type
2. R : $T \to T \to \mathbb{P}$
3. $\forall x, y{:}T.\ \mathrm{Dec}(R(x,y))$
4. $\forall a{:}T.\ R(a,a)$
5. $\forall a, b, c{:}T.\ R(a,b) \Rightarrow R(b,c) \Rightarrow R(a,c)$
6. $\forall x, y{:}T.\ R(x,y) \Rightarrow R(y,x) \Rightarrow (x = y)$
7. $\forall x, y{:}T.\ R(x,y) \vee R(y,x)$
8. a : T
9. b : T

$\vdash$ $(\neg(R(a,b)\ \&\ (\neg R(b,a)))) \iff R(b,a)$
  by ((Unfold ‘decidable‘ 3 THEN InstHyp [b;a] 3
THENM InstHyp [a;b] 7
THENM ProveProp)

  CollapseTHEN ((Auto_aux (first_nat 1:n) ((first_nat 1:n),(first_nat 3:n)) (first_tok
    :t) inil_term)))·

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