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l_member_decidable  THM

⊢  ∀T:Type, x:T, l:T List. (∀y:T. Dec(x = y)) ⇒ Dec((x ∈ l))
| by Auto THEN All (Unfold ‘decidable‘) THEN ListInd (-2)
|
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| 1. T : Type
| 2. x : T
| 3. T List
| 4. ∀y:T. x = y ∨ ¬x = y
| ⊢  (x ∈ nil) ∨ ¬(x ∈ nil)
|   by RWW "nil_member" 0 THENA Auto THEN SimpConcl
|
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. 1. T : Type
. 2. x : T
. 3. T List
. 4. ∀y:T. x = y ∨ ¬x = y
. 5. u : T
. 6. v : T List
. 7. (x ∈ v) ∨ ¬(x ∈ v)
. ⊢  (x ∈ [u / v]) ∨ ¬(x ∈ [u / v])
.   by AllHyps (InstHyp [u]) THENA Auto THEN D (-1)
.
.         THEN RWW "cons_member" 0 THEN Auto THEN SimpConcl
END
```