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decidable__l_exists  THM

⊢  ∀A:Type, F:(A→Prop), L:A List.
|  (∀k:A. Dec(F(k))) ⇒ Dec((∃k∈L.F(k)))  by Auto THEN ListInd (-2)
|
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| 1. A : Type
| 2. F : A→Prop
| 3. A List
| 4. ∀k:A. Dec(F(k))
| ⊢  Dec((∃k∈nil.F(k)))
|   by RWO "l_exists_nil" 0 THENM ProveDecidable THENA Auto
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. 1. A : Type
. 2. F : A→Prop
. 3. A List
. 4. ∀k:A. Dec(F(k))
. 5. u : A
. 6. v : A List
. 7. Dec((∃k∈v.F(k)))
. ⊢  Dec((∃k∈[u / v].F(k)))  by RWO "l_exists_cons" 0 THENA Auto
. |
. 1. A : Type
. 2. F : A→Prop
. 3. A List
. 4. ∀k:A. Dec(F(k))
. 5. u : A
. 6. v : A List
. 7. Dec((∃k∈v.F(k)))
. ⊢  Dec(F(u) ∨ (∃k∈v.F(k)))
.   by AllHyps (InstHyp [u]) THENA Auto THEN ProveDecidable THEN Auto
END
```