```
is_list_mem_wf  THM

⊢  ∀A:Type, a:A, xs:A List. (a ∈ xs) ∈ Prop  by UnivCD
|
1. A : Type
2. a : A
3. xs : A List
⊢  (a ∈ xs) ∈ Prop  by ListInd Hyp:-1
|
|\
| ⊢  (a ∈ nil) ∈ Prop  by Compute (⌜a ∈ nil⌝ *⇒ False) ∈ Prop
|
.\
. 4. u : A
. 5. v : A List
. 6. (a ∈ v) ∈ Prop
. ⊢  (a ∈ u.v) ∈ Prop
. | by Compute (⌜a ∈ u.v⌝ *⇒ u = a ∈ A ∨ (a ∈ v)) ∈ Prop
. |
. ⊢  (a = u ∨ (a ∈ v)) ∈ Prop  by Analyze
. |
. |\
. | ⊢  (a = u) ∈ Prop  by Auto
. |
. .\
. . ⊢  (a ∈ v) ∈ Prop  by Hypothesis
END
```