```
length_of_not_nil  THM

⊢  ∀as:A List. ¬as = nil ⟺ ||as||≥1
| by RepD THEN (OnVar ‘as’ Analyze) THEN (Reduce 0)
|
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| 1. A : Type
| 2. A List
| 3. ¬nil = nil
| ⊢  0≥1  by Analyze 3
|
|\
| 1. A : Type
| 2. A List
| 3. u : A
| 4. v : A List
| 5. ¬u.v = nil
| ⊢  ||v||+1≥1  by Auto
|
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. 1. A : Type
. 2. A List
. 3. u : A
. 4. v : A List
. 5. ||v||+1≥1
. ⊢  ¬u.v = nil  by Auto
. |
. ⊢  ¬u.v = nil  by BackThru ‘cons_neq_nil‘
END
```