```
assert-deq-member  THM

⊢  ∀A:Type, eq:EqDecider(A), L:A List, x:A.
|  deq-member(eq;x;L) ⟺ (x ∈ L)
| by InductionOnList THEN Try (Reduce 0)
|
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| 1. A : Type
| 2. EqDecider(A)
| 3. A List
| ⊢  ∀x:A. false₂ ⟺ (x ∈ nil)  by Obvious
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. 1. A : Type
. 2. eq : EqDecider(A)
. 3. A List
. 4. u : A
. 5. v : A List
. 6. ∀x:A. deq-member(eq;x;v) ⟺ (x ∈ v)
. ⊢  ∀x:A. (eqof(eq)(u,x) ∨₂ deq-member(eq;x;v)) ⟺ (x ∈ [u / v])
.   by ((ParallelOp -1 THEN RW assert_pushdownC 0)
.       THEN
.       (RWO
.        Thm* ∀l:T List, a,x:T. (x ∈ [a / l]) ⟺ x = a ∨ (x ∈ l)
.        {cons_member}
.        0)
.       THEN
.       (RWO "deq_property<" 0))
.      THEN
.      ParallelOp -1
.      THEN
.      ThinTrivial
.      THEN
.      Trivial
END
```