```
append_associative  THM

⊢  ∀L1,L2,L3:T List. (L1 @ (L2 @ L3)) = ((L1 @ L2) @ L3)  by UnivCD
|
1. T : Type
2. L1 : T List
3. L2 : T List
4. L3 : T List
⊢  (L1 @ L2 @ L3) = ((L1 @ L2) @ L3)  by ListInd 2
|
|\
| ⊢  (nil @ L2 @ L3) = ((nil @ L2) @ L3)  by Reduce 0
|
.\
. 5. u : T
. 6. v : T List
. 7. (v @ L2 @ L3) = ((v @ L2) @ L3)
. ⊢  ((u.v) @ L2 @ L3) = (((u.v) @ L2) @ L3)  by Reduce 0
. |
. ⊢  u.(v @ L2 @ L3) = u.((v @ L2) @ L3)  by MemberEqCD
END
```