```
formula_and_left_sound  THM

⊢  ∀concl,M,N:Formula List, q,r:Formula.
|  |= <[q; r/ M @ N],concl>  ⇒ |= <M @ (q⌜∧⌝r.N),concl>   by UnivCD
|
1. concl : Formula List
2. M : Formula List
3. N : Formula List
4. q : Formula
5. r : Formula
6. |= <[q; r/ M @ N],concl>
⊢  |= <M @ (q⌜∧⌝r.N),concl>
| by OnHyps [-1;0] UnfoldTopAb THEN Analyze 0
|
6. ∀a:Full(<[q; r/ M @ N],concl>). a |= <[q; r/ M @ N],concl>
7. a : Full(<M @ (q⌜∧⌝r.N),concl>)
⊢  a |= <M @ (q⌜∧⌝r.N),concl>  by With a (Analyze -2)
|
|\
| .....wf .....
| 6. a : Full(<M @ (q⌜∧⌝r.N),concl>)
| ⊢  a ∈ Full(<[q; r/ M @ N],concl>)
| | by Unfold ‘full_sequent_assignment‘ 0
| |
| ⊢  a
| |  ∈ {a:Assignment
| |     | a |= <[q; r/ M @ N],concl> ∨ a |≠ <[q; r/ M @ N],concl> }
| | by AbSetMemEqTypeCD
| |
| |\
| | ⊢  a ∈ Assignment  by Auto
| |
| .\
| . .....set predicate .....
| . ⊢  a |= <[q; r/ M @ N],concl> ∨ a |≠ <[q; r/ M @ N],concl>
| . | by Analyze -1 THEN Analyze -1
| . |
| . |\
| . | 6. a : Assignment
| . | 7. a |= <M @ (q⌜∧⌝r.N),concl>
| . | ⊢   by Choose [1]
| . | |
| . | ⊢  a |= <[q; r/ M @ N],concl>
| . | | by FwdThru
| . | |    Thm* ∀concl,M,N:Formula List, q,r:Formula, a:Assignment.
| . | |         a |= <[q; r/ M @ N],concl>
| . | |         ⟺
| . | |         a |= <M @ (q⌜∧⌝r.N),concl>
| . | |    {formula_and_left_sat}
| . | |    [-1]
| . | |
| . | 8. a |= <[q; r/ M @ N],concl>
| . | ⊢   by Trivial
| . |
| . .\
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| . . 6. a : Assignment
| . . 7. a |≠ <M @ (q⌈∧⌉r.N),concl>
| . . ⊢
| . . | by FwdThru
| . . |    Thm* ∀concl,M,N:Formula List, q,r:Formula, a:Assignment.
| . . |         a |≠ <[q; r/ M @ N],concl>
| . . |         ⟺
| . . |         a |≠ <M @ (q⌈∧⌉r.N),concl>
| . . |    {formula_and_left_falsifiable}
| . . |    [-1]
| . . |
| . . 8. a |≠ <[q; r/ M @ N],concl>
| . . ⊢   by Choose [2] THEN Trivial
|
.\
. 6. a : Full(<M @ (q⌈∧⌉r.N),concl>)
. 7. a |= <[q; r/ M @ N],concl>
. ⊢
. | by BackThru
. |    Thm* ∀concl,M,N:Formula List, q,r:Formula, a:Assignment.
. |         a |= <[q; r/ M @ N],concl> ⟺ a |= <M @ (q⌈∧⌉r.N),concl>
. |    {formula_and_left_sat}
. |
. ⊢  a |= <[q; r/ M @ N],concl>  by Trivial
END
```