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not_sequent_satisfiable_and_falsifiable  THM

⊢  ∀S:Sequent, a:Assignment. ¬(a |= S & a |≠ S)  by UnivCD
|
1. S : Sequent
2. a : Assignment
⊢  ¬(a |= S & a |≠ S)  by Analyze 0 THEN Analyze -1
|
3. a |= S
4. a |≠ S
⊢  False
| by Analyze 1 THEN OnHyps [-2;-1] (λi.UnfoldTopAb i THEN AbReduce i)
|
1. S1 : Formula List
2. S2 : Formula List
3. a : Assignment
4. ∃F∈S1.a |≠ F ∨ ∃F∈S2.a |= F
5. ∀F∈S1.a |= F  & ∀F∈S2.a |≠ F
⊢
| by MkDiscreteEq ‘Formula‘ THEN MoveToHyp 1 -1
|    THEN
|    RenameVar ‘eqF’ 1
|
1. {Formula=₂}
2. S1 : Formula List
3. S2 : Formula List
4. a : Assignment
5. ∃F∈S1.a |≠ F ∨ ∃F∈S2.a |= F
6. ∀F∈S1.a |= F  & ∀F∈S2.a |≠ F
⊢   by Analyze -1 THEN Analyze -3
|
|\
| 5. ∃F∈S1.a |≠ F
| 6. ∀F∈S1.a |= F
| 7. ∀F∈S2.a |≠ F
| ⊢   by Thin -1
| |
| 6. ∀F∈S1.a |= F
| ⊢
| | by Using [‘eq’,eqF]
| |    (FwdThru
| |     Thm* ∀eq:{T=₂}, P:(T→Prop), L:T List.
| |           (∃x:T. x(∈eq) L & P(x)) ⟺ ∃y∈L.P(y)
| |     {list_exists_is_member_lemma}
| |     [-2])
| |    THEN
| |    Analyze -1
| |    THEN
| |    Analyze -1
| |
| 7. x : Formula
| 8. x(∈eqF) S1
| 9. a |≠ x
| ⊢
| | by Inst
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| |     Thm* ∀eq:{T=2}, P:(T→Prop), L:T List.
| |          ∀x∈L.P(x) ⟺ (∀z:T. z(∈eq) L ⇒ P(z))
| |     {list_all_is_member_lemma}
| |     [Formula;eqF;λ2f. a |= f ;S1]
| |     THEN
| |     Analyze -1
| |     THEN
| |     Thin -1
| |     THEN
| |     RenameVar ‘h’ -5
| |     THEN
| |     With h (Analyze -1)
| |     THEN
| |     Thin -5
| |
| 6. x : Formula
| 7. x(∈eqF) S1
| 8. a |≠ x
| 9. ∀z:Formula. z(∈eqF) S1 ⇒ a |= z
| ⊢   by FwdThru -1 [-3]
| |
| 10. a |= x
| ⊢
| | by FwdThru
| |     Thm* ∀a:Assignment, F:Formula. a |≠ F ⇒ ¬a |= F
| |     {formula_falsifiable_lemma1}
| |     [-3]
| |
| 11. ¬a |= x
| ⊢   by Analyze -1
|
.\
. 5. ∃F∈S2.a |= F
. 6. ∀F∈S1.a |= F
. 7. ∀F∈S2.a |≠ F
. ⊢   by Thin -2
. |
. 6. ∀F∈S2.a |≠ F
. ⊢
. | by Using [‘eq’,eqF]
. |     (FwdThru
. |      Thm* ∀eq:{T=2}, P:(T→Prop), L:T List.
. |           (∃x:T. x(∈eq) L & P(x)) ⟺ ∃y∈L.P(y)
. |      {list_exists_is_member_lemma}
. |      [-2])
. |     THEN
. |     Analyze -1
. |     THEN
. |     Analyze -1
. |
. 7. x : Formula
. 8. x(∈eqF) S2
. 9. a |= x
. ⊢
. | by Inst
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. |     Thm* ∀eq:{T=₂}, P:(T→Prop), L:T List.
. |          ∀x∈L.P(x) ⟺ (∀z:T. z(∈eq) L ⇒ P(z))
. |     {list_all_is_member_lemma}
. |     [Formula;eqF;λ₂f. a |≠ f;S2]
. |     THEN
. |     Analyze -1
. |     THEN
. |     Thin -1
. |     THEN
. |     RenameVar 'h' -5
. |     THEN
. |     With h (Analyze -1)
. |     THEN
. |     Thin -5
. |
. 6. x : Formula
. 7. x(∈eqF) S2
. 8. a |= x
. 9. ∀z:Formula. z(∈eqF) S2 ⇒ a |≠ z
. ⊢   by FwdThru -1 [-3]
. |
. 10. a |≠ x
. ⊢
. | by FwdThru
. |     Thm* ∀a:Assignment, F:Formula. a |≠ F ⇒ ¬a |= F
. |     {formula_falsifiable_lemma1}
. |     [-1]
. |
. 11. ¬a |= x
. ⊢   by Analyze -1
END
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