not_equivalence_implies_not_discrete_eq THM

⊢ ∀eq:{T≡$_2$}, f:{T=$_2$}, x,y:T. ¬eq(x,y) ⇒ ¬f(x,y)
| by Analyze 0 THEN Analyze 0 THEN Equivalence -1 THEN UnivCD
|
1. T : Type
2. eq : {T≡$_2$}
3. eq ∈ T→T→𝔹
4. ∀x:T. eq(x,x)
5. ∀x,y:T. eq(x,y) ⟺ eq(y,x)
6. ∀x,y,z:T. eq(x,y) ⇒ eq(y,z) ⇒ eq(x,z)
7. f : {T=$_2$}
8. x : T
9. y : T
10. ¬eq(x,y)
⊢ ¬f(x,y)
| by Inst
| Thm* ∀eq:{T=$_2$}, f:{T≡$_2$}, x,y:T. eq(x,y) ⇒ f(x,y)
| {equivalence_weakening_lemma}
| [T;f;eq]
|
11. ∀x,y:T. f(x,y) ⇒ eq(x,y)
⊢ ¬f(x,y) by DiscreteEq 7 THEN Analyze 0
|
8. f ∈ T→T→𝔹
9. ∀x,y:T. f(x,y) ⟺ x = y
10. x : T
11. y : T
12. ¬eq(x,y)
13. ∀x,y:T. f(x,y) ⇒ eq(x,y)
14. f(x,y)
⊢ False by FwdThru 13 [14]
|
15. eq(x,y)
⊢ False by UnfoldTopAb 12 THEN FwdThru 12 [-1] THEN Trivial
END