

Inference at * 1 1
of proof for Lemma equiv_rel_self_functionality:

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1. T : Type
2. R : T → T →  $\mathbb{P}$ 
3. EquivRel(T;x,y.R(x,y))
4. a : T
5. a' : T
6. b : T
7. b' : T
8. R(a,b)
9. R(a',b')
10. R(a,a')
 $\vdash R(b,b')$ 
  by ((RepUnfolds "equiv_rel refl sym trans" 3)
  CollapseTHEN ((Auto_aux (first_nat 1:n
    ) ((first_nat 1:n),(first_nat 3:n)) (first_tok :t) inil_term))))·

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1:

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3.  $\forall a:T. R(a,a)$ 
4.  $\forall a, b:T. R(a,b) \Rightarrow R(b,a)$ 
5.  $\forall a, b, c:T. R(a,b) \Rightarrow R(b,c) \Rightarrow R(a,c)$ 
6. a : T
7. a' : T
8. b : T
9. b' : T
10. R(a,b)
11. R(a',b')
12. R(a,a')
 $\vdash R(b,b')$ 
.

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