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hrep_sum_inj  THM

⊢  ∀'a,'b:S, u,v:'a+'b. rep_sum(u) = rep_sum(v) ⇒ u = v
| by Id THEN StrongAuto
|
1. 'a : S
2. 'b : S
3. u : 'a+'b
4. v : 'a+'b
5. rep_sum(u) = rep_sum(v)
⊢  u = v
| by Inst Thm: hsum_iso_def ['a;'b] THEN Simpset [`hol_to_nuprl`]
|    THEN
|    Simp
|    THEN
|    StrongAuto
|
1. 'a : S
2. 'b : S
3. u : 'a+'b
4. v : 'a+'b
5. rep_sum(u) = rep_sum(v)
6. ∀a:hsum('a; 'b). abs_sum(rep_sum(a)) = a
7. ∀r:(hbool → 'a → 'b → hbool).
|  is_sum_rep(r) = ((rep_sum(abs_sum(r))) =_b r)
⊢  u = v
| by With u (ID 6) THEN StrongAuto THEN With v (ID 6) THEN StrongAuto
|
1. 'a : S
2. 'b : S
3. u : 'a+'b
4. v : 'a+'b
5. rep_sum(u) = rep_sum(v)
6. ∀a:hsum('a; 'b). abs_sum(rep_sum(a)) = a
7. ∀r:(hbool → 'a → 'b → hbool).
|  is_sum_rep(r) = ((rep_sum(abs_sum(r))) =_b r)
8. abs_sum(rep_sum(u)) = u
9. abs_sum(rep_sum(v)) = v
⊢  u = v
| by ApplyFunToHypEquands (λz:𝔹→'a→'b→𝔹. abs_sum(z)) 5
|    THEN
|    All Reduce
|    THEN
|    StrongAuto
|
1. 'a : S
2. 'b : S
3. u : 'a+'b
4. v : 'a+'b
5. rep_sum(u) = rep_sum(v)
6. ∀a:hsum('a; 'b). abs_sum(rep_sum(a)) = a
7. ∀r:(hbool → 'a → 'b → hbool).
   is_sum_rep(r) = ((rep_sum(abs_sum(r))) =_b r)
8. abs_sum(rep_sum(u)) = u
9. abs_sum(rep_sum(v)) = v
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10. abs_sum(rep_sum(u)) = abs_sum(rep_sum(v))
⊢  u = v  by Unab [‘hsum‘] THEN StrongAuto
END
```