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eval_factorization_one  THM

⊢  ∀a:{2...}, b:ℤ, f:({a..b^-}→ℕ).
|  Π↑{a..b^-}(f) = 1 ⟺ (∀i:{a..b^-}. f(i) = 0)
| by Def of Π↑{<int>..<int>^-}(<exponents>)
|
⊢  ∀a:{2...}, b:ℤ, f:({a..b^-}→ℕ).
|  (Π i:{a..b^-}. i↑f(i)) = 1 ⟺ (∀i:{a..b^-}. f(i) = 0)
| by Rewrite by
|    Thm*  ∀e:({a..b^-}→ℕ).
|          (Π i:{a..b^-}. e(i)) = 1 ⟺ (∀i:{a..b^-}. e(i) = 1)
|    {iter_nat_prod_one_iff_factors_one} ...wℕ
|
⊢  ∀a:{2...}, b:ℤ, f:({a..b^-}→ℕ).
|  (∀i:{a..b^-}. i↑f(i) = 1) ⟺ (∀i:{a..b^-}. f(i) = 0)
| by Rewrite by
|    Thm*  ∀e:({a..b^-}→ℕ).
|          (Π i:{a..b^-}. e(i)) = 1 ⟺ (∀i:{a..b^-}. e(i) = 1)
|    {iter_nat_prod_one_iff_factors_one} ...wℕ
|
⊢  ∀a:{2...}, b:ℤ, f:({a..b^-}→ℕ).
|  (∀i:{a..b^-}, ∃∈ℕ(f(i)) ⇒ i = 1) ⟺ (∀i:{a..b^-}. f(i) = 0)
| by 5 Times Analyze ...wℕ
|
|\
| 1. a : {2...}
| 2. b : ℤ
| 3. f : {a..b^-}→ℕ
| 4. ∀i:{a..b^-}, ∃∈ℕ(f(i)) ⇒ i = 1
| ⊢  ∀i:{a..b^-}. f(i) = 0  by SimilarTo: Hyp:-1 ...wℕ
| |
| 4. i : {a..b^-}
| 5. ∃∈ℕ(f(i)) ⇒ i = 1
| ⊢  f(i) = 0  by ¬0<f(i)  Asserted ...ℕ THEN Analyze ...wℕ
| |
| 6. 0<f(i)
| ⊢  False  by Witness5: 0 ...ℕ
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. 1. a : {2...}
. 2. b : ℤ
. 3. f : {a..b^-}→ℕ
. 4. ∀i:{a..b^-}. f(i) = 0
. ⊢  ∀i:{a..b^-}, ∃∈ℕ(f(i)) ⇒ i = 1  by SimilarTo: Hyp:-1 ...wℕ
. |
. 4. i : {a..b^-}
. 5. f(i) = 0
. ⊢  ∃∈ℕ(f(i)) ⇒ i = 1  by Autoℕ
END
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