```
geom_unique  THM

⊢  ∀q:ℕ+, n1,n2:ℕ, r1:ℕ(q↑n1), r2:ℕ(q↑n2).
|  Σ(q↑n1⁻)+r1 = Σ(q↑n2⁻)+r2 ⇒ n1 = n2 & r1 = r2 ∈ ℕ  by UnivCD
|
1. q : ℕ+
2. n1 : ℕ
3. n2 : ℕ
4. r1 : ℕ(q↑n1)
5. r2 : ℕ(q↑n2)
6. Σ(q↑n1⁻)+r1 = Σ(q↑n2⁻)+r2
⊢  n1 = n2 & r1 = r2  by Assert (n1 = n2)
|
|\
| .....assertion .....
| ⊢  n1 = n2  by Decide (n1<n2)
| |
| |\
| | 7. n1<n2
| | ⊢
| |   by Inst
| |      Thm* ∀q:ℕ+, n:ℕ, i:ℕ+, r1:ℕ(q↑n), r2:ℕ(q↑n+i).
| |           Σ(q↑n⁻)+r1 = Σ(q↑n+i⁻)+r2 ⇒ False
| |      {geom_n_unique}
| |      [q;n1;n2-n1;r1;r2]
| |
| .\
| . 7. ¬n1<n2
| . ⊢   by Decide (n1>n2)
| . |
| . |\
| . | 8. n1>n2
| . | ⊢
| . |   by Inst
| . |      Thm* ∀q:ℕ+, n:ℕ, i:ℕ+, r1:ℕ(q↑n), r2:ℕ(q↑n+i).
| . |           Σ(q↑n⁻)+r1 = Σ(q↑n+i⁻)+r2 ⇒ False
| . |      {geom_n_unique}
| . |      [q;n2;n1-n2;r2;r1]
| . |
| . .\
| . . 8. ¬n1>n2
| . . ⊢   by Auto
|
.\
. 7. n1 = n2
. ⊢  r1 = r2  by RWH (HypC 7) 6
END
```