

Inference at * 2
of proof for Lemma exists_functionality_wrt_iff:

```

1. S : Type
2. T : Type
3. P : S →  $\mathbb{P}$ 
4. Q : S →  $\mathbb{P}$ 
5. S = T
6.  $\forall x:S. P(x) \iff Q(x)$ 
7.  $\exists y:T. Q(y)$ 
 $\vdash \exists x:S. P(x)$ 
  by InteriorProof ((((((D 7)
    CollapseTHEN (With y (D 0))))·)
    CollapseTHENM (
      HypBackchain)))·)
CollapseTHEN ((Auto_aux (first_nat 1:n) ((first_nat
  1:n),(first_nat 3:n)) (first_tok :t) inil_term)))·
.

```