Inference at $*$ 1 1 2
 of proof for Lemma bool_sq:

1. x : ?Unit
2. y : ?Unit
3. $x = y$
4. case x of inl(x) => x | inr(x) => x = case y of inl(x) => x | inr(x) => x
5. case x of inl(x) => True | inr(x) => False = case y of inl(x) => True | inr(x) => False
6. ¬(True = False)

$\vdash x \sim y$

```
  by ((((((((((D 1)
  CollapseTHEN (D 2))·)
  CollapseTHEN (AbReduce 4))·)

     CollapseTHEN (AbReduce 5))·)
  CollapseTHEN (Try ((D 6)
  CollapseTHEN (Eq))·))·)

     CollapseTHEN ((Auto_aux (first_nat 1:n) ((first_nat 1:n),(first_nat 3:n)) (first_tok :t
    ) inil_term)))·

    .
```