

Inference at \*  
of proof for Lemma fun\_thru\_ite:

$\vdash \forall S, T: \text{Type}, f: (S \rightarrow T), b: \mathbb{B}, p, q: S.$   
 $f(\text{if } b \text{ then } p \text{ else } q \text{ fi}) = \text{if } b \text{ then } f(p) \text{ else } f(q) \text{ fi}$   
by ((((((RepD  
CollapseTHENM (OnVar 'b' BoolCases)).)  
CollapseTHENM (AbReduce 0)).)  
CollapseTHEN ((Auto\_aux (first\_nat 1:n) ((first\_nat 1:n), (first\_nat 3:n)) (first\_tok  
:t) inil\_term))).