Inference at $*$ 1 1
 of proof for Lemma squash_thru_equiv_rel:

1. T : Type
2. E : $T \rightarrow T \rightarrow \mathbb{P}$
3. ($\forall a{:}T.\ E(a,a)$) & ($\forall a,\ b{:}T.\ E(a,b) \Rightarrow E(b,a)$) & ($\forall a,\ b,\ c{:}T.\ E(a,b) \Rightarrow E(b,c) \Rightarrow E(a,c)$)
4. a : T

$\vdash E(a,a)$
 by ((Sel 1 (BackThruHyp 3))
 CollapseTHEN ((Auto_aux (first_nat 1:n) ((first_nat 1:n
 ),(first_nat 4:n)) (first_tok :t) inil_term)))·

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