

Inference at \* 1  
of proof for Lemma all\_quot\_elim:

$\vdash \forall T:\text{Type}, E:(T \rightarrow T \rightarrow \mathbb{P}).$   
 $\text{EquivRel}(T; x, y. E(x, y))$   
 $\Rightarrow (\forall F:((x, y:T // (E(x, y))) \rightarrow \mathbb{P}).$   
 $(\forall w:(x, y:T // (E(x, y))). \text{SqStable}(F(w)))$   
 $\Rightarrow ((\forall z:(x, y:T // (E(x, y))). F(z)) \iff (\forall z:T. F(z)))$   
by ((GenUnivCD)  
CollapseTHEN (Auto\_aux (first\_nat 1:n) ((first\_nat 1:n), (first\_nat  
3:n)) (first\_tok :t) inil\_term))).

1:

1.  $T : \text{Type}$
2.  $E : T \rightarrow T \rightarrow \mathbb{P}$
3.  $\text{EquivRel}(T; x, y. E(x, y))$
4.  $F : (x, y:T // (E(x, y))) \rightarrow \mathbb{P}$
5.  $\forall w:(x, y:T // (E(x, y))). \text{SqStable}(F(w))$
6.  $\forall z:(x, y:T // (E(x, y))). F(z)$
7.  $z : T$
- $\vdash F(z)$

2:

1.  $T : \text{Type}$
2.  $E : T \rightarrow T \rightarrow \mathbb{P}$
3.  $\text{EquivRel}(T; x, y. E(x, y))$
4.  $F : (x, y:T // (E(x, y))) \rightarrow \mathbb{P}$
5.  $\forall w:(x, y:T // (E(x, y))). \text{SqStable}(F(w))$
6.  $\forall z:T. F(z)$
7.  $z : x, y:T // (E(x, y))$
- $\vdash F(z)$

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