

Inference at * 1 1 2 2
of proof for Lemma complete_nat_ind_with_y:

1. $P : \mathbb{N} \rightarrow \mathbb{P}\{k\}$
2. $g : \forall i:\mathbb{N}. (\forall j:\mathbb{N}i. P(j)) \Rightarrow P(i)$
3. $Y(\lambda f,x. g(x,f)) \in !\text{Void}() \rightarrow !\text{Void}()$
4. $\forall n:\mathbb{N}. Y(\lambda f,x. g(x,f)) \in (\forall m:\mathbb{N}n. P(m))$

$\vdash Y(\lambda f,x. g(x,f)) \in (\forall i:\mathbb{N}. P(i))$
by ((ExtWith ['r'] [!Void() → !Void()])
CollapseTHENA ((Auto_aux (first_nat 1:n
) ((first_nat 1:n),(first_nat 3:n)) (first_tok :t) inil_term)))

1:

5. $r : \mathbb{N}$
 $\vdash Y((\lambda f,x. g(x,f)),r) \in P(r)$