

Inference at * 1
of proof for Lemma complete_nat_ind_with_y:

$\vdash (\lambda P, g. Y(\lambda f, x. g(x, f))) \in (\forall P: (\mathbb{N} \rightarrow \mathbb{P}\{k\}). (\forall i: \mathbb{N}. (\forall j: \mathbb{N}i. P(j)) \Rightarrow P(i)) \Rightarrow (\forall i: \mathbb{N}. P(i)))$
by ((MemberEqCD)
CollapseTHEN (IfLab ‘subterm‘
((MemberEqCD)
CollapseTHEN (
IfLab ‘subterm‘ Id (Auto_aux (first_nat 1:n) ((first_nat 1:n), (first_nat 3:n
)) (first_tok :t) inil_term)))
(Auto_aux (first_nat 1:n) ((first_nat 1:n
), (first_nat 3:n)) (first_tok :t) inil_term))))).

1:subterm..... T:t1:n

1. $P : \mathbb{N} \rightarrow \mathbb{P}\{k\}$
 2. $g : \forall i: \mathbb{N}. (\forall j: \mathbb{N}i. P(j)) \Rightarrow P(i)$
- $\vdash Y(\lambda f, x. g(x, f)) \in (\forall i: \mathbb{N}. P(i))$