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

1. A : Type
2. B : Type
3. f : $A \rightarrow B$
4. g : $B \rightarrow A$
5. $(g \circ f) = \mathrm{Id}\{A\}$
6. $(f \circ g) = \mathrm{Id}\{B\}$
7. a_1 : A
8. a_2 : A
9. $f(a_1) = f(a_2)$
10. $g(f(a_1)) = g(f(a_2))$

$\vdash a_1 = a_2$
by ((((NotThinning (With a_1 (EqHD 5)))
CollapseTHENM (With a_2 (EqHD 5)))·)

CollapseTHENA ((Auto_aux (first_nat 1:n) ((first_nat 1:n),(first_nat 4:n)) (first_tok :t) inil_term)))·

1:

5. $(f \circ g) = \mathrm{Id}\{B\}$
6. a_1 : A
7. a_2 : A
8. $f(a_1) = f(a_2)$
9. $g(f(a_1)) = g(f(a_2))$
10. $(g \circ f)(a_1) = \mathrm{Id}\{A\}(a_1)$
11. $(g \circ f)(a_2) = \mathrm{Id}\{A\}(a_2)$

$\vdash a_1 = a_2$
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