

Inference at * 2

of proof for Lemma p-fun-exp-compose:

1. $T : \text{Type}$
2. $n : \mathbb{Z}$
3. $0 < n$
4. $\forall h, f : (T \rightarrow (T + \text{Top})). f \wedge^{n-1} \circ h = \text{primrec}(n-1; h; \lambda i, g. f \circ g)$
 $\vdash \forall h, f : (T \rightarrow (T + \text{Top})).$
 $\text{primrec}(n; \text{p-id}(); \lambda i, g. f \circ g) \circ h = \text{primrec}(n; h; \lambda i, g. f \circ g)$
by (Auto THEN Subst' $n = 1 + (n - 1) 0$ THENA Auto')
CollapseTHEN (
RWO "primrec_add" 0 THEN Auto THEN Reduce 0).

1:

5. $h : T \rightarrow (T + \text{Top})$
 6. $f : T \rightarrow (T + \text{Top})$
- $$\vdash \text{primrec}(1 + (n - 1); \text{p-id}(); \lambda i, g. f \circ g) \circ h$$
- $$=$$
- $$f \circ \text{primrec}(n - 1; h; \lambda i, g. f \circ g)$$
- .