

Inference at * 2 2 1
of proof for Lemma p-fun-exp-add-sq:

1. $A : \text{Type}$
 2. $f : A \rightarrow (A + \text{Top})$
 3. $x : A$
 4. $m : \mathbb{Z}$
 5. $0 < m$
 6. $\forall n:\mathbb{N}. (\uparrow\text{can-apply}(f^{\wedge} m - 1;x)) \Rightarrow ((f^{\wedge} n+(m - 1)(x)) \sim (f^{\wedge} n(\text{do-apply}(f^{\wedge} m - 1;x))))$
 7. $n : \mathbb{N}$
 8. $\uparrow\text{can-apply}(f^{\wedge} m;x)$
 9. $\neg(n = 0)$
 10. $\neg(n+m = 0)$
 11. $\neg(n = 0)$
 12. $\neg(m = 0)$
- $\vdash (f \circ f^{\wedge}(n+m) - 1 (x)) \sim (f \circ f^{\wedge} n - 1 (\text{do-apply}(f \circ f^{\wedge} m - 1 ;x)))$
by Subst' $(f \circ f^{\wedge}(n+m) - 1 (x)) \sim (f \circ f^{\wedge} n (\text{do-apply}(f^{\wedge} m - 1;x))) (0)$.

1:equality..... NILNIL

$$\vdash (f \circ f^{\wedge}(n+m) - 1 (x)) \sim (f \circ f^{\wedge} n (\text{do-apply}(f^{\wedge} m - 1;x)))$$

2:

$$\vdash (f \circ f^{\wedge} n (\text{do-apply}(f^{\wedge} m - 1;x))) \sim (f \circ f^{\wedge} n - 1 (\text{do-apply}(f \circ f^{\wedge} m - 1 ;x)))$$

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