

Inference at * 2 1 1 1 1 1
of proof for Lemma fast-fib:

1. $f :$
 $\forall n, a, b : \mathbb{N}.$
 $\{m : \mathbb{N} \mid$
 $\forall k : \mathbb{N}.$
 $(a = \text{fib}(k))$
 $\Rightarrow ((k \leq 0) \Rightarrow (b = 0))$
 $\Rightarrow ((0 < k) \Rightarrow (b = \text{fib}(k - 1)))$
 $\Rightarrow (m = \text{fib}(n+k))\}$
2. $n : \mathbb{N}$
3. $v :$
 $\{m : \mathbb{N} \mid$
 $\forall k : \mathbb{N}.$
 $(1 = \text{fib}(k))$
 $\Rightarrow ((k \leq 0) \Rightarrow (0 = 0))$
 $\Rightarrow ((0 < k) \Rightarrow (0 = \text{fib}(k - 1)))$
 $\Rightarrow (m = \text{fib}(n+k))\}$
4. $f(n, 1, 0) = v$
 $\vdash v = \text{fib}(n)$
by D (-2).

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3. $v : \mathbb{N}$
4. $\forall k : \mathbb{N}.$
 $(1 = \text{fib}(k))$
 $\Rightarrow ((k \leq 0) \Rightarrow (0 = 0))$
 $\Rightarrow ((0 < k) \Rightarrow (0 = \text{fib}(k - 1)))$
 $\Rightarrow (v = \text{fib}(n+k))$
5. $f(n, 1, 0) = v$
 $\vdash v = \text{fib}(n)$

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