

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

1. $n : \mathbb{Z}$
 2. $0 < n$
 3. $\forall a, b : \mathbb{N}.$
 $\{m : \mathbb{N} \mid$
 $\forall k : \mathbb{N}.$
 $(a = \text{fib}(k))$
 $\Rightarrow ((k \leq 0) \Rightarrow (b = 0))$
 $\Rightarrow ((0 < k) \Rightarrow (b = \text{fib}(k - 1)))$
 $\Rightarrow (m = \text{fib}((n - 1) + k))\}$
 4. $a : \mathbb{N}$
 5. $b : \mathbb{N}$
 6. $\forall b@_0 : \mathbb{N}.$
 $\{m : \mathbb{N} \mid$
 $\forall k : \mathbb{N}.$
 $(a + b = \text{fib}(k))$
 $\Rightarrow ((k \leq 0) \Rightarrow (b@_0 = 0))$
 $\Rightarrow ((0 < k) \Rightarrow (b@_0 = \text{fib}(k - 1)))$
 $\Rightarrow (m = \text{fib}((n - 1) + k))\}$
 7. $\{m : \mathbb{N} \mid$
 $\forall k : \mathbb{N}.$
 $(a + b = \text{fib}(k))$
 $\Rightarrow ((k \leq 0) \Rightarrow (a = 0))$
 $\Rightarrow ((0 < k) \Rightarrow (a = \text{fib}(k - 1)))$
 $\Rightarrow (m = \text{fib}((n - 1) + k))\}$
- $\vdash \{m : \mathbb{N} \mid$
 $\forall k : \mathbb{N}.$
 $(a = \text{fib}(k))$
 $\Rightarrow ((k \leq 0) \Rightarrow (b = 0))$
 $\Rightarrow ((0 < k) \Rightarrow (b = \text{fib}(k - 1)))$
 $\Rightarrow (m = \text{fib}(n + k))\}$
by (D (-1))
CollapseTHEN ((InstConcl [m])
CollapseTHEN ((Auto·)
CollapseTHEN (
Auto')·).·).
- 1:
7. $m : \mathbb{N}$
 8. $\forall k : \mathbb{N}.$
 $(a + b = \text{fib}(k))$

$$\begin{aligned}
&\Rightarrow ((k \leq 0) \Rightarrow (a = 0)) \\
&\Rightarrow ((0 < k) \Rightarrow (a = \text{fib}(k - 1))) \\
&\Rightarrow (m = \text{fib}((n - 1) + k)) \\
9. &k : \mathbb{N} \\
10. &a = \text{fib}(k) \\
11. &(k \leq 0) \Rightarrow (b = 0) \\
12. &(0 < k) \Rightarrow (b = \text{fib}(k - 1)) \\
&\vdash m = \text{fib}(n + k)
\end{aligned}$$

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