

Inference at * 1 2 1 2 1 1 1
of proof for Lemma 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. $\forall b_1 : \mathbb{N}.$
 $\{m : \mathbb{N} \mid$
 $\forall k : \mathbb{N}.$
 $(a + b = \text{fib}(k))$
 $\Rightarrow ((k \leq 0) \Rightarrow (b_1 = 0))$
 $\Rightarrow ((0 < k) \Rightarrow (b_1 = \text{fib}(k - 1)))$
 $\Rightarrow (m = \text{fib}((n - 1) + k))\}$
 7. $m : \mathbb{N}$
 8. $\forall k : \mathbb{N}.$
 $(a + b = \text{fib}(k))$
 $\Rightarrow ((k \leq 0) \Rightarrow (a = 0))$
 $\Rightarrow ((0 < k) \Rightarrow (a = \text{fib}(k - 1)))$
 $\Rightarrow (m = \text{fib}((n - 1) + k))$
 9. $k : \mathbb{N}$
 10. $a = \text{fib}(k)$
 11. $(k \leq 0) \Rightarrow (b = 0)$
 12. $(0 < k) \Rightarrow (b = \text{fib}(k - 1))$
 13. $k = 0$
- $\vdash a + b = \text{fib}(0 + 1)$
by ((D (11)).)
CollapseTHEN (Auto.).)
CollapseTHEN (((if (first_bool T:b
) then HypSubst' else RevHypSubst') (-1)(0)).).
- 1:
11. $(0 < k) \Rightarrow (b = \text{fib}(k - 1))$
 12. $k = 0$
 13. $b = 0$
- $\vdash a + 0 = \text{fib}(0 + 1)$

