

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

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1. n : ℤ
2. 0 < n
3. ∀a, b:ℕ.
   {m:ℕ |
    ∀k:ℕ.
    (a = fib(k))
    ⇒ ((k ≤ 0) ⇒ (b = 0))
    ⇒ ((0 < k) ⇒ (b = fib(k - 1)))
    ⇒ (m = fib((n - 1)+k))}
4. a : ℕ
5. b : ℕ
6. ∀b₁:ℕ.
   {m:ℕ |
    ∀k:ℕ.
    (a+b = fib(k))
    ⇒ ((k ≤ 0) ⇒ (b₁ = 0))
    ⇒ ((0 < k) ⇒ (b₁ = fib(k - 1)))
    ⇒ (m = fib((n - 1)+k))}
7. m : ℕ
8. ∀k:ℕ.
   (a+b = fib(k))
   ⇒ ((k ≤ 0) ⇒ (a = 0))
   ⇒ ((0 < k) ⇒ (a = fib(k - 1)))
   ⇒ (m = fib((n - 1)+k))
9. k : ℕ
10. a = fib(k)
11. (k ≤ 0) ⇒ (b = 0)
12. (0 < k) ⇒ (b = fib(k - 1))
13. ¬(k = 0)
14. ¬(k+1 = 0)
15. ¬(k+1 = 1)
⊢ a+b = fib((k+1) - 1)+fib((k+1) - 2)
   by (EqCD)
   CollapseTHEN (Auto·).

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1: .....subterm..... T:t2:n

⊢ b = fib((k+1) - 2)

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[http://www.nuprl.org/FDLcontent/p0\\_963683\\_/p25\\_480536\\_{fast-fib}1\\_2\\_1\\_2\\_1\\_1\\_2\\_1.html](http://www.nuprl.org/FDLcontent/p0_963683_/p25_480536_{fast-fib}1_2_1_2_1_1_2_1.html)