```
sfa_doc_factorial_wf  THM

⊢  ∀x:ℕ. x! ∈ ℕ  by CompNatInd Concl
|
1. x : ℕ
2. ∀x1:ℕ. x1<x ⇒ x1! ∈ ℕ
⊢  x! ∈ ℕ  by Compute ⌈x!⌉ *⇒ if x=₂0→ 1 else x·(x-1)! fi
|
⊢  if x=₂0→ 1 else x·(x-1)! fi ∈ ℕ  by SplitITE Concl
|
|\
| .....truecase .....
| 3. x = 0
| ⊢  1 ∈ ℕ  by Auto
|
.\
. .....falsecase .....
. 3. x ≠ 0
. ⊢  x·(x-1)! ∈ ℕ
. | by BackThru: Thm* ∀i,j:ℕ. i·j ∈ ℕ    {multiply_nat_wf}
. |
. |\
. | .....wf .....
. | ⊢  x ∈ ℕ  by Trivial
. |
. .\
. . .....wf .....
. . ⊢  (x-1)! ∈ ℕ  by BackThru: Hyp:2
END
```