```
factorial_ratio  THM

⊢  ∀m,k:ℕ. m≤k ⇒ k! = (k-m)!·k!m  by Def of <nat>!
|
1. m : ℕ
2. k : ℕ
3. m≤k
⊢  k!k = (k-m)!(k-m)·k!m
| by Inst:
|    Thm*  ∀n,m,k:ℕ. n≤k-m ⇒ m≤k ⇒ k!(n+m) = (k-m)!n·k!m
|    {factorial_tail_split_mid}
|    Using:[k-m | m | k]
|
4. k!(k-m+m) = (k-m)!(k-m)·k!m
⊢  k!k = (k-m)!(k-m)·k!m  by Auto
END
```