```
factorial_ratio2  THM

⊢  ∀m,k:ℕ. m≤k ⇒ k!m = ((k!) ÷ ((k-m)!))
| by SimilarTo:
|    Thm*  ∀m,k:ℕ. m≤k ⇒ k! = (k-m)!·k!m    {factorial_ratio}
|
1. m : ℕ
2. k : ℕ
3. m≤k
4. k! = (k-m)!·k!m
⊢  k!m = ((k!) ÷ ((k-m)!))  by ElaborateDivision AutoℕConcl
|
5. k! = ((k!) ÷ ((k-m)!))·(k-m)!+((k!) rem (k-m)!)
6. ((k!) rem (k-m)!) ∈ ℕ((k-m)!)
⊢  k!m = ((k!) ÷ ((k-m)!))
  by Inst:
     Thm*  ∀k:ℕ⁺, q1,q2:ℤ, r1,r2:ℕk.
           q1·k+r1 = q2·k+r2 ⇒ q1 = q2 & r1 = r2
     {division1_sfa}
     Using:[(k-m)! | k!m | (k!) ÷ ((k-m)!) | 0 | (k!) rem (k-m)!]
END
```