```
remove_prime_factor  THM

⊢  ∀a:ℕ, b:ℤ, f:({a..b⁻}→ℕ), p:ℕ.
|  is_prime_factorization(a; b; f)
|  ⇒
|  prime(p)
|  ⇒
|  p | Π↑{a..b⁻}(f)
|  ⇒
|  Π↑{a..b⁻}(f) = p·Π↑{a..b⁻}(reduce_factorization(f; p))
| by SimilarTo:
|     Thm*  ∀a:ℕ, b:ℤ, f:({a..b⁻}→ℕ), p:ℕ.
|           is_prime_factorization(a; b; f)
|           ⇒
|           prime(p) ⇒ p | Π↑{a..b⁻}(f) ⇒ p ∈ {a..b⁻} & 0<f(p)
|     {prime_factorization_includes_prime_divisors}
|     THEN
|     Analyze-1
|
1. a : ℕ
2. b : ℤ
3. f : {a..b⁻}→ℕ
4. p : ℕ
5. is_prime_factorization(a; b; f)
6. prime(p)
7. p | Π↑{a..b⁻}(f)
8. p ∈ {a..b⁻}
9. 0<f(p)
⊢  Π↑{a..b⁻}(f) = p·Π↑{a..b⁻}(reduce_factorization(f; p))
  by FwdThru:
     Thm*  ∀a,b:ℤ, f:({a..b⁻}→ℕ), z:{a..b⁻}.
           0<f(z)
           ⇒
           Π↑{a..b⁻}(f) = z·Π↑{a..b⁻}(reduce_factorization(f; z))
     {eval_factorization_pluck}
     on [ 0<f(p) ]
END
```