```
div_elim  THM

⊢  ∀a:ℕ, n:ℕ+. ∃q:ℕ. Div(a;n;q) & (a ÷ n) = q
| by SimilarTo:
|    Thm* ∀a:ℕ, n:ℕ+. Div(a;n;a ÷ n)    div_fun_sat_div_nrel
|
1. a : ℕ
2. n : ℕ+
3. Div(a;n;a ÷ n)
⊢  ∃q:ℕ. Div(a;n;q) & (a ÷ n) = q
| by ElaborateDivision Auto 0 THEN Witness: a ÷ n
|
.....wf .....
4. a = (a ÷ n)·n+(a rem n)
5. (a rem n) ∈ ℕn
⊢  (a ÷ n) ∈ ℕ
  by BackThru:
     Thm* ∀a:ℕ, n:ℕ+. (a ÷ n) ∈ ℕ    {division_typing1a_sfa}
END
```