



## NUMBER OF SET PRODUCTS



## Result

**Proposition 1.** *Suppose  $A$  and  $B$  are finite sets. Then  $|A \times B| = |A| \times |B|$ .*

*Proof.* The proof involves induction on the size of one of the sets, and will, I believe, use the result of the number of a disjoint union; thus the dependence on the sheet **Number of Disjoint Unions**.  $\square$

This is often called the *multiplication principle*, *rule of product*, or the *fundamental principle of counting*.



