



Why

We want to count the number of elements in a set.

Defining Result

Proposition 1. *A set can be equivalent to at most one natural number.*¹

The *number* of a finite set is the unique natural number equivalent to it. We also call this the *size* of the set.

Notation

We denote the number of a set by $|A|$.

Restriction to a finite set

If we restrict $E \mapsto |E|$ to the domain $\mathcal{P}(X)$ of some set X then $|\cdot| : \mathcal{P}(X) \rightarrow \omega$ is a function.²

Properties

Proposition 2. $A \subset B \longrightarrow |A| \leq |B|$

¹A proof will appear in future editions.

²Future editions will clarify this point.

