



NUMBER OF ELEMENTS

Why

We want to count the number of elements in a set.¹

Defining Result

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

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 the function $E \mapsto |E|$ to the domain X^* of some set X then $|\cdot| : X^* \rightarrow \omega$ is a function.

Properties

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

¹In future editions, this sheet will likely be called “Set numbers”.

