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 $|A|$.

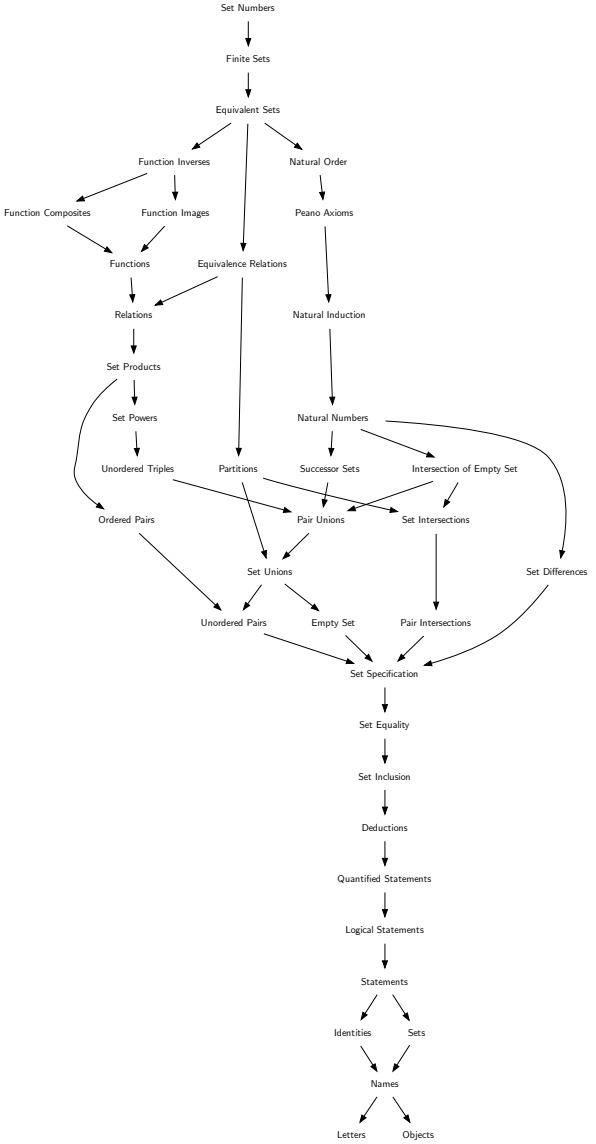
Restriction to a finite set

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

Properties

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

[1] A proof will appear in future editions.
[2] Future editions will clarify this point.


Set Numbers
Finite Sets
Equivalent Sets
Function Inverses
Natural Order
Function Composites
Function Images
Peano Axioms
Functions
Equivalence Relations
Relations
Natural Induction
Set Products
Set Powers
Natural Numbers
Unordered Triples
Partitions
Successor Sets
Intersection of Empty Set
Ordered Pairs
Pair Unions
Set Intersections
Set Unions
Set Differences
Unordered Pairs
Empty Set
Pair Intersections
Set Specification
Set Equality
Set Inclusion
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects