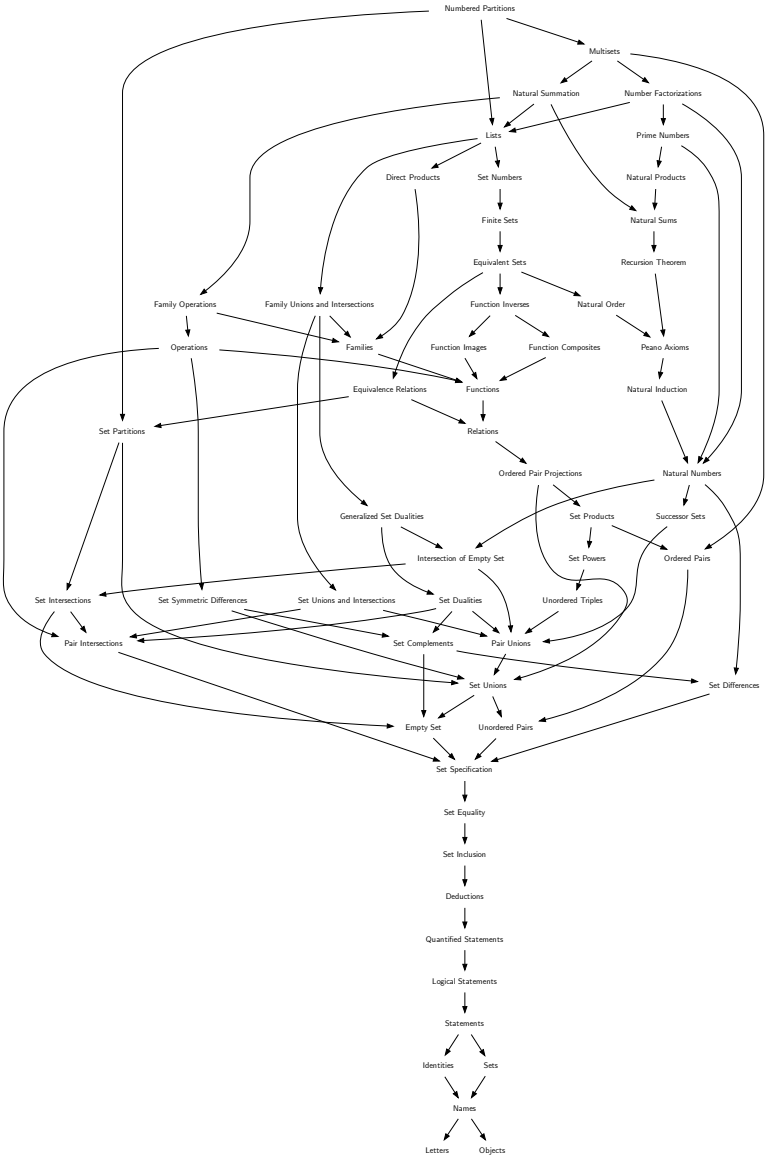
Definition

Given a set S, a *numbered partition* of S (or *labeled partition*) is a numbering of some partition of a S. In other words, a numbered partition $(\pi_1, \ldots, \pi_p)$ of S is such that

$$\{\pi_1, \ldots, \pi_p\} \quad \text{partitions} \quad S$$

As before, π_i is called a *part* of the partition, for $i = 1, \ldots, n$. In this case p is the *size* and $(|\pi_1|, \ldots, |\pi_p|)$ is the *shape* of the numbered partition.

When we speak simultaneously of partitions (as defined in Partitions) and numbered partitions, we sometimes call a *partition* an *unnumbered partition* (or *unlabeled partition*, *allocation*). In this case, the *size* of a partition P of S is the multiset $m : \mathbf{N} \to \mathbf{N}$ defined so that $m(k)$ is the number of parts of size k in P.


Numbered Partitions
Multisets
Natural Summation
Number Factorizations
Lists
Prime Numbers
Direct Products
Set Numbers
Natural Products
Finite Sets
Natural Sums
Equivalent Sets
Recursion Theorem
Family Operations
Family Unions and Intersections
Function Inverses
Natural Order
Operations
Families
Function Images
Function Composites
Peano Axioms
Equivalence Relations
Functions
Natural Induction
Set Partitions
Relations
Ordered Pair Projections
Natural Numbers
Generalized Set Dualities
Set Products
Successor Sets
Intersection of Empty Set
Set Powers
Ordered Pairs
Set Intersections
Set Symmetric Differences
Set Unions and Intersections
Set Dualities
Unordered Triples
Pair Intersections
Set Complements
Pair Unions
Set Unions
Set Differences
Empty Set
Unordered Pairs
Set Specification
Set Equality
Set Inclusion
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects