Why

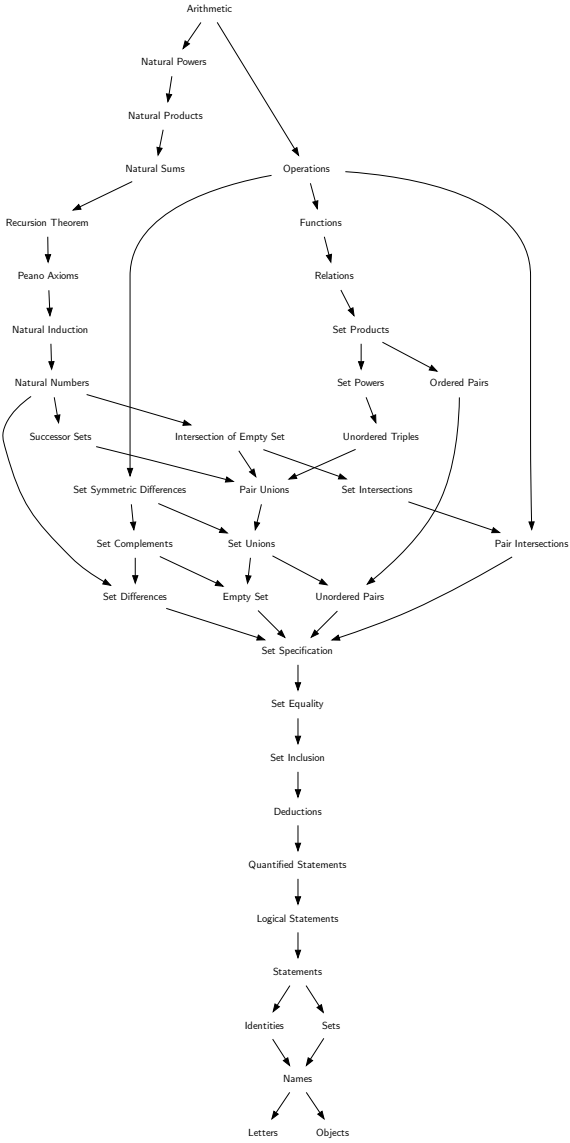
We name the operations which produce natural sums, products and powers.

Definition

Consider the set of natural numbers. The we can define three functions corresponding to sums, products and powers which are operations (see Operations) on this set.

We call *addition* the function $+ : \omega \times \omega \to \omega$, which maps two natural numbers m and n to their sum $m+n$. We call *multiplication* the function $\cdot : \omega \times \omega \to \omega$, which maps two natural numbers m and n to their product $m \cdot n$. We call *exponentiation* the function $(m, n) \mapsto m^n$.

In other words, we can think of sums, products, and powers as obtainable by applying a function to pairs of natural numbers. This function gives another natural numbers We call these three operations the operations of *arithmetic*.


Arithmetic
Natural Powers
Natural Products
Natural Sums
Operations
Recursion Theorem
Functions
Peano Axioms
Relations
Natural Induction
Set Products
Natural Numbers
Set Powers
Ordered Pairs
Successor Sets
Intersection of Empty Set
Unordered Triples
Set Symmetric Differences
Pair Unions
Set Intersections
Set Complements
Set Unions
Pair Intersections
Set Differences
Empty Set
Unordered Pairs
Set Specification
Set Equality
Set Inclusion
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects