Why

We generalize the algebraic structure of addition and multiplication over the integers.

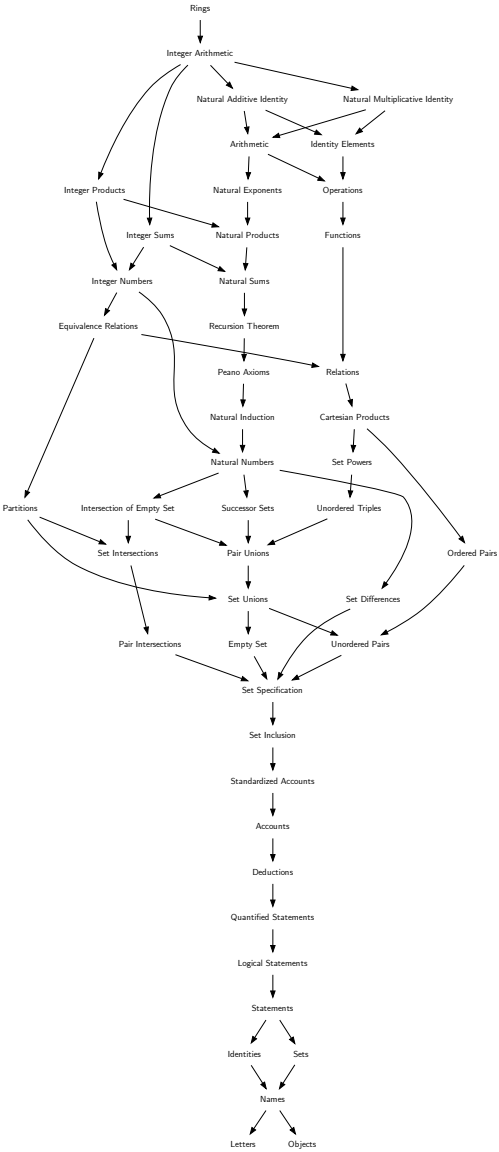
Definition

A *ring* is two algebras over the same ground set with: (1) the first algebra a commutative group (2) an identity element in the second algebra, and (3) the operation of the second algebra distributes over the operation of the first algebra.

We call the operation of the first algebra *ring addition*. We call the operation of the second algebra *ring multiplication*.

Example

Of course, $\mathbf{Z}$ with the usual operations is a ring.


Rings
Integer Arithmetic
Natural Additive Identity
Natural Multiplicative Identity
Arithmetic
Identity Elements
Integer Products
Natural Exponents
Operations
Integer Sums
Natural Products
Functions
Integer Numbers
Natural Sums
Equivalence Relations
Recursion Theorem
Peano Axioms
Relations
Natural Induction
Cartesian Products
Natural Numbers
Set Powers
Partitions
Intersection of Empty Set
Successor Sets
Unordered Triples
Set Intersections
Pair Unions
Ordered Pairs
Set Unions
Set Differences
Pair Intersections
Empty Set
Unordered Pairs
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects