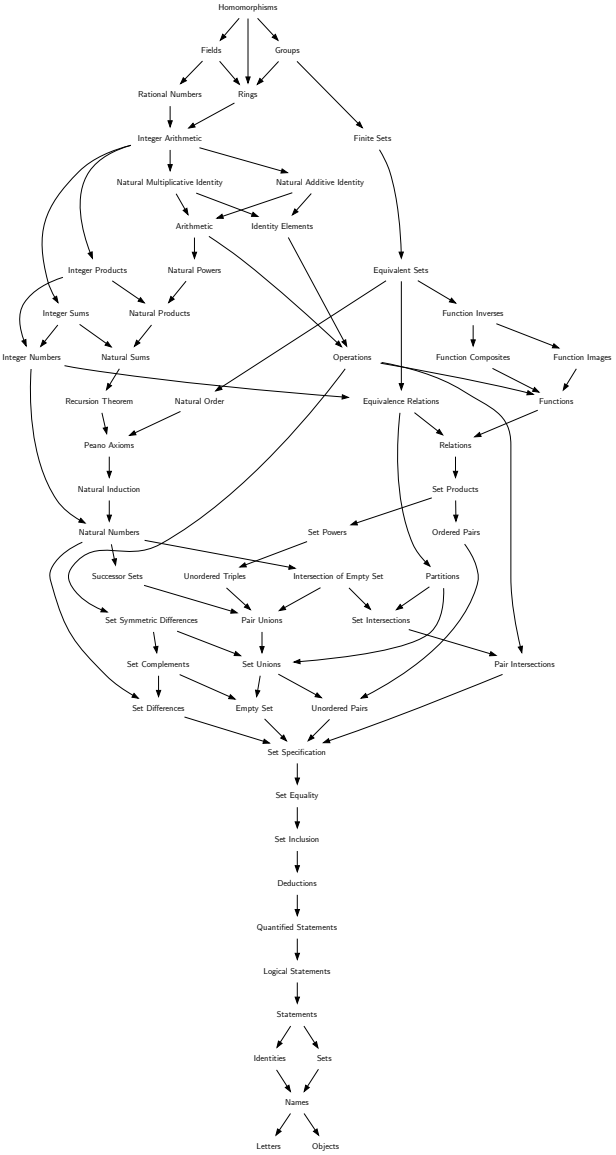
Why

We name a function which preserves algebraic structure.

Definition

A *group homomorphism* between two groups $(A, +)$ and $(B, \tilde{+})$ is a bijection $f : A \to B$ such that $f(1_A) = 1_B$ for $1_A \in A$ and $1_B \in B$ and $f(a + a') = f(a) \tilde{+} f(a')$ for all $a, a' \in A$. We define a *ring homomorphism* and *field homomorphism* similarly.


Homomorphisms
Fields
Groups
Rational Numbers
Rings
Integer Arithmetic
Finite Sets
Natural Multiplicative Identity
Natural Additive Identity
Arithmetic
Identity Elements
Integer Products
Natural Powers
Equivalent Sets
Integer Sums
Natural Products
Function Inverses
Integer Numbers
Natural Sums
Operations
Function Composites
Function Images
Recursion Theorem
Natural Order
Equivalence Relations
Functions
Peano Axioms
Relations
Natural Induction
Set Products
Natural Numbers
Set Powers
Ordered Pairs
Successor Sets
Unordered Triples
Intersection of Empty Set
Partitions
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