Why

We represent rectangles by functions.

Definition

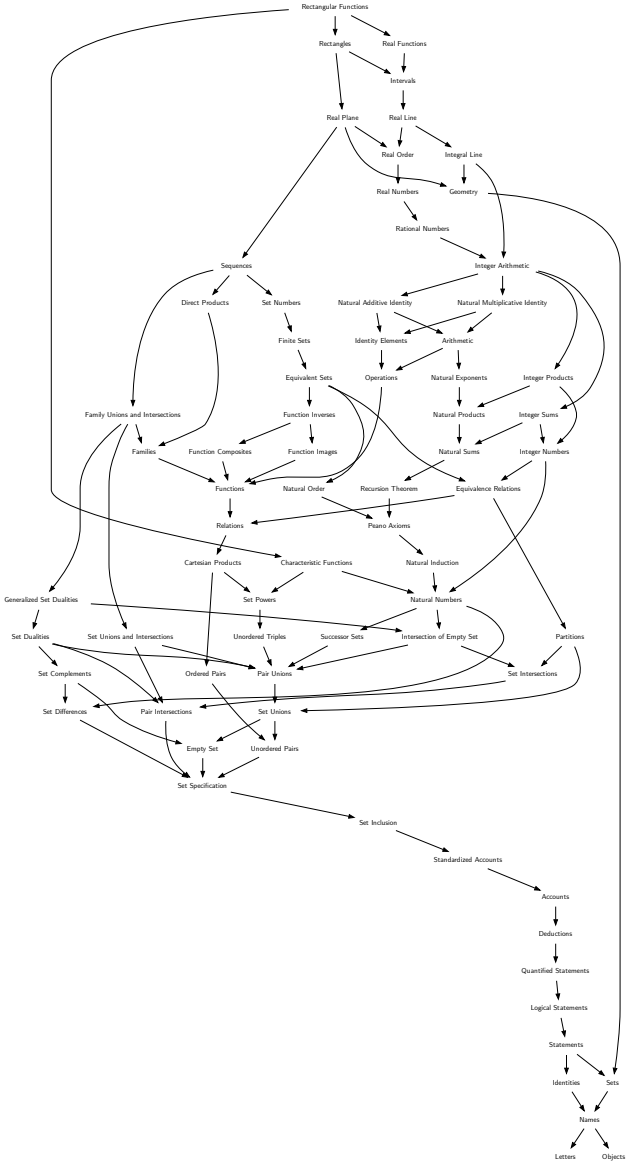
A *rectangular function* corresponds to a characterstic function of an interval. It represents a rectangle whose width is the interval and whose height is one.

Notation

Let A be a non-empty set and $B \subset A$. Recall that we denote the characteristic function of B by χ_B.

Now suppose that $A \subset \mathbf{R}$. If we embed $\{0, 1\} = 2 \in \mathbf{N}$ in $\mathbf{R}$ by associating 0 to $0_{\mathbf{R}}$ and 1 to $1_{\mathbf{R}}$ then every characteristic function is identifiable with a function from $\mathbf{R}$ to $\mathbf{R}$.

In particular, notice that if B is an interval and α is a real number then $\alpha\chi_B$ is a rectangle with height α.


Rectangular Functions
Rectangles
Real Functions
Intervals
Real Plane
Real Line
Real Order
Integral Line
Real Numbers
Geometry
Rational Numbers
Integer Arithmetic
Sequences
Direct Products
Set Numbers
Natural Additive Identity
Natural Multiplicative Identity
Finite Sets
Identity Elements
Arithmetic
Equivalent Sets
Operations
Natural Exponents
Integer Products
Family Unions and Intersections
Function Inverses
Natural Products
Integer Sums
Families
Function Composites
Function Images
Natural Sums
Integer Numbers
Functions
Natural Order
Recursion Theorem
Equivalence Relations
Relations
Peano Axioms
Cartesian Products
Characteristic Functions
Natural Induction
Generalized Set Dualities
Set Powers
Natural Numbers
Set Dualities
Set Unions and Intersections
Unordered Triples
Successor Sets
Intersection of Empty Set
Partitions
Set Complements
Ordered Pairs
Pair Unions
Set Intersections
Set Differences
Pair Intersections
Set Unions
Empty Set
Unordered Pairs
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects