Why

We represent rectangles by functions.

Definition

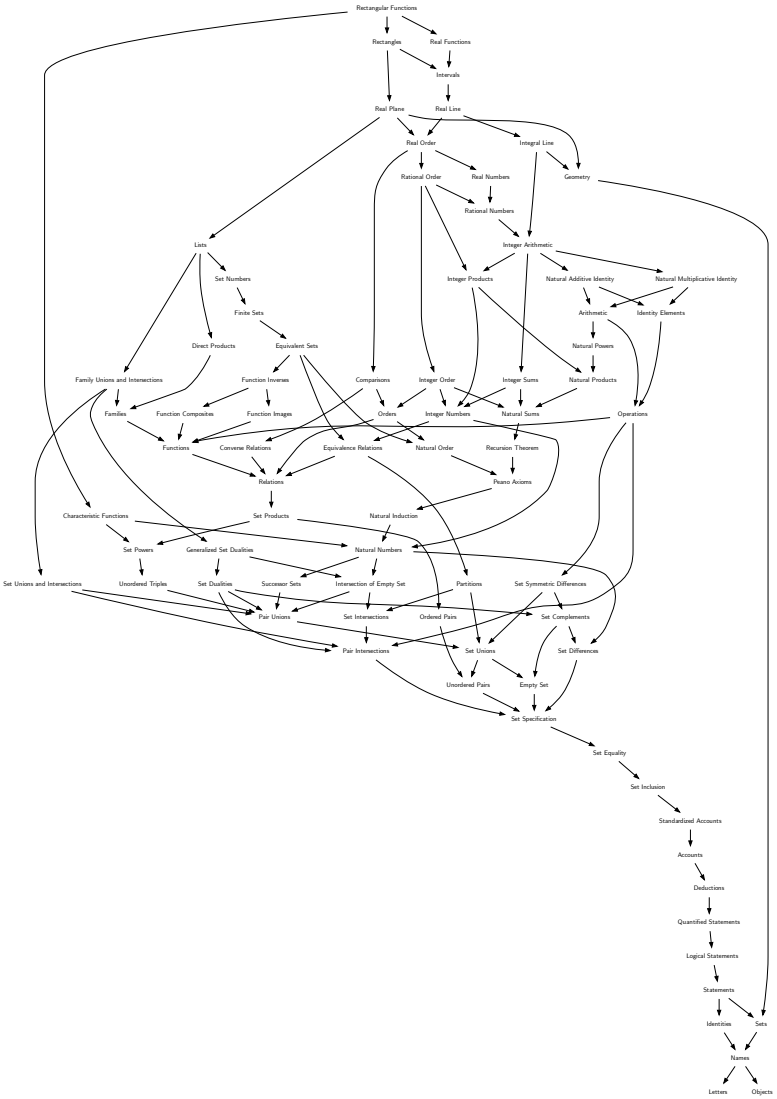
A *rectangular function* corresponds to a characterstic function of an interval. It represents a rectangle whose width is the interval and whose height is one.

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