Why

We represent rectangles by functions.

Definition

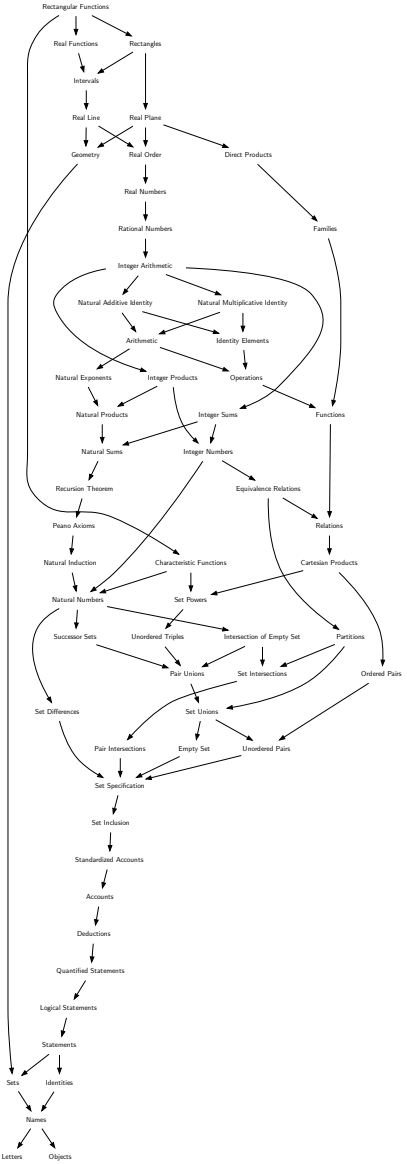
A *rectangular function* corresponds to a characterstic function of an interval. It represents a rectangle whose width is the interval and whose height is one.

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