Why

We want to add real numbers.[1]

Definition

The *real sum* of two real numbers R and S is the set

$$\{t \in \mathbf{Q} \mid \exists r \in R, s \in S \text{ with } t = r + s\}.$$

Notation

We denote the sum of two real numbers x and y by $x + y$.

Properties

We can show the following.[2]

Proposition 1 (Associative)**.** $x + (y + z) = (x + y) + z$

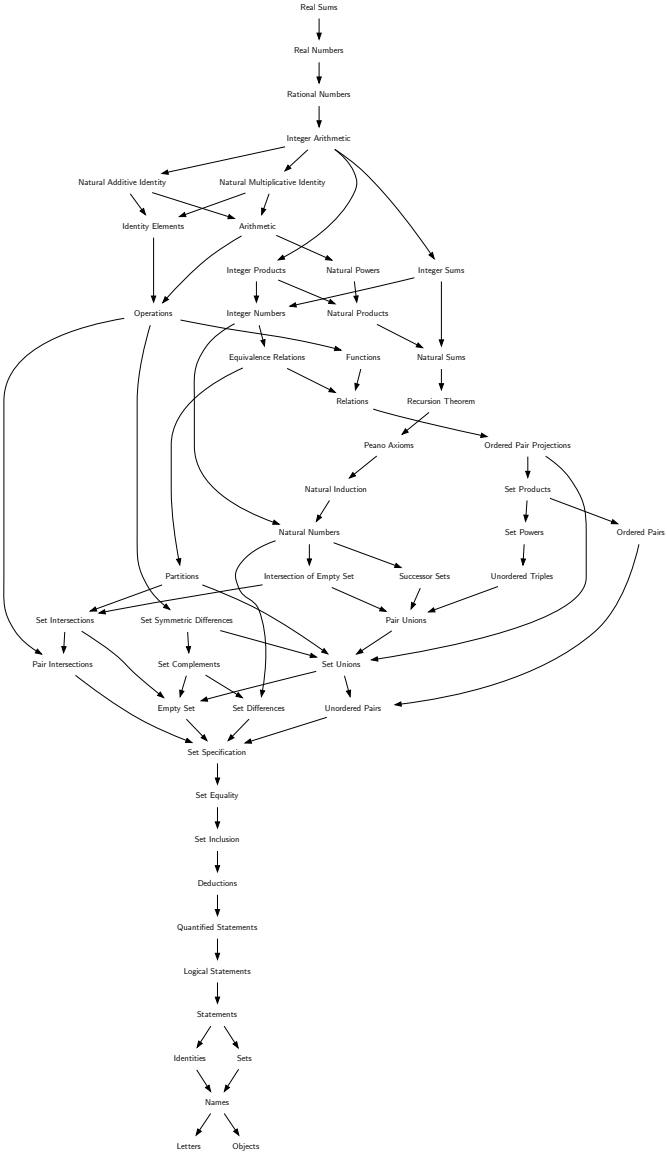
Proposition 2 (Commutative)**.** $x + y = y + x$

Proposition 3 (Identity)**.** *The set of negative rational numbers is the additive identity.*

We denote the additive identity of $\mathbf{R}$ under $+$ by $0_{\mathbf{R}}$. When it is clear from context, we call $0_{\mathbf{R}}$ "zero".

[1] Future editions will expand.

[2] Accounts will appear in future editions.


Real Sums
Real Numbers
Rational Numbers
Integer Arithmetic
Natural Additive Identity
Natural Multiplicative Identity
Identity Elements
Arithmetic
Integer Products
Natural Powers
Integer Sums
Operations
Integer Numbers
Natural Products
Equivalence Relations
Functions
Natural Sums
Relations
Recursion Theorem
Peano Axioms
Ordered Pair Projections
Natural Induction
Set Products
Natural Numbers
Set Powers
Ordered Pairs
Partitions
Intersection of Empty Set
Successor Sets
Unordered Triples
Set Intersections
Set Symmetric Differences
Pair Unions
Pair Intersections
Set Complements
Set Unions
Empty Set
Set Differences
Unordered Pairs
Set Specification
Set Equality
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Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
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Objects