Why

We partition a real interval into interval pieces.

Definition

An *interval partition* is a finite partition of a closed real interval.

An interval partition is *regular* if all pieces except the largest are closed on the left and open on the right and the largest is closed.

Any regular interval partition with $n-1$ elements can be represented by $n+1$ real numbers: the endpoints of each interval. We call these the *cut points* of the interval partition.

Notation

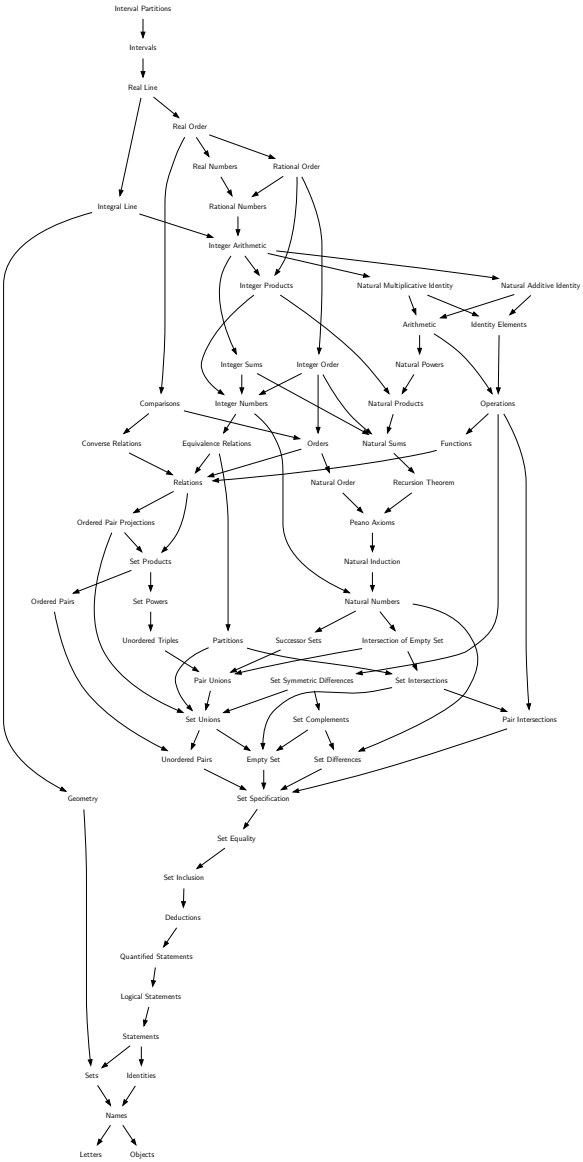
Let $[a, b]$ a closed interval in $\mathbf{R}$ with endpoints $a, b \in \mathbf{R}$.

Consider a regular partition of $[a, b]$ with $n-1$ pieces. We can identify its cut points:

$$a = a_1 < a_2 < \ldots a_{n-1} < a_n = b.$$

The pieces of the partition are:

$$[a_1, a_2), [a_2, a_3), \ldots, [a_{n-2}, a_{n-1}), [a_{n-1}, a_n].$$


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