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

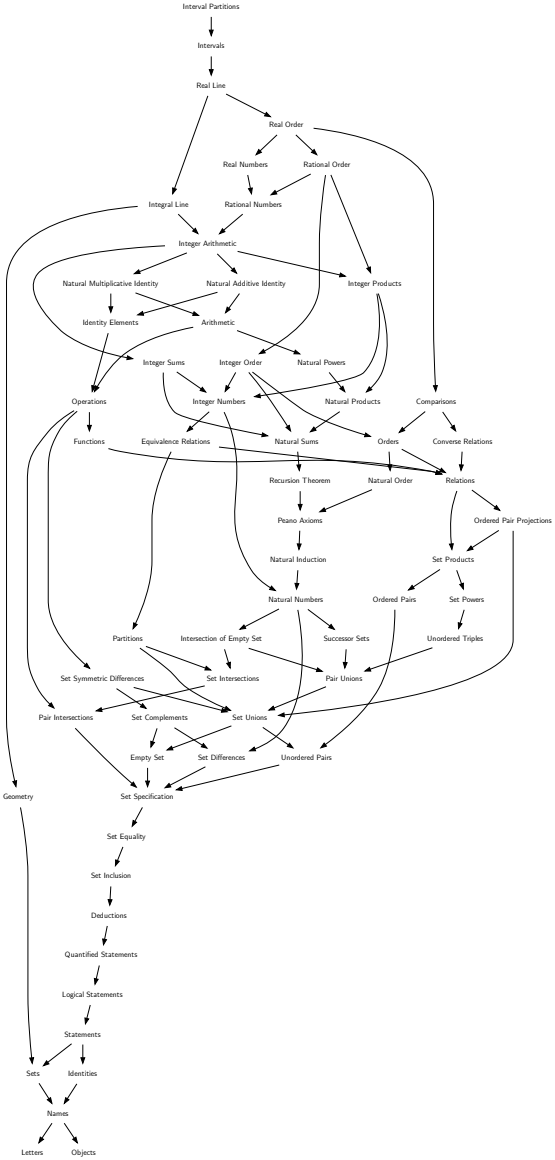
Let $[a, b]$ a closed interval in $\mathbf{R}$ with endpoints $a, b \in \mathbf{R}$.

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