Why

We want to order the rationals.

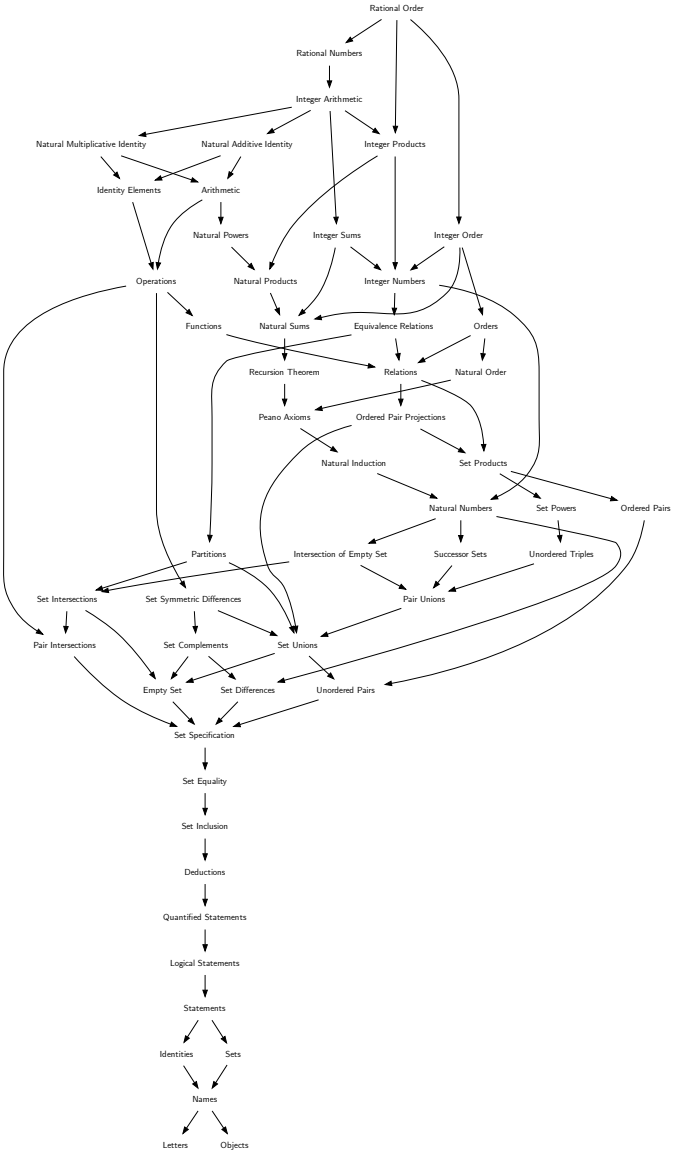
Definition

Consider $[(a,b)], [(b,c)] \in \mathbf{Q}$ with $0_{\mathbf{Z}} < b, d$ If $ad < bc$, then we say that $[(a,b)]$ is *less than* $[(b,c)]$.[1] If $[(a,b)]$ is less than $[(b,c)]$ or equal, then we say that $[(a,b)]$ is *less than or equal to* $[(b,c)]$.

Notation

If $x, y \in \mathbf{Q}$ and x is less than y, then we write $x < y$. If x is less than or equal to y, we write $x \leq y$.

[1] One needs to show that this is well-defined. The account will appear in future editions.


Rational Order
Rational Numbers
Integer Arithmetic
Natural Multiplicative Identity
Natural Additive Identity
Integer Products
Identity Elements
Arithmetic
Natural Powers
Integer Sums
Integer Order
Operations
Natural Products
Integer Numbers
Functions
Natural Sums
Equivalence Relations
Orders
Recursion Theorem
Relations
Natural Order
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
Set Inclusion
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects