Why

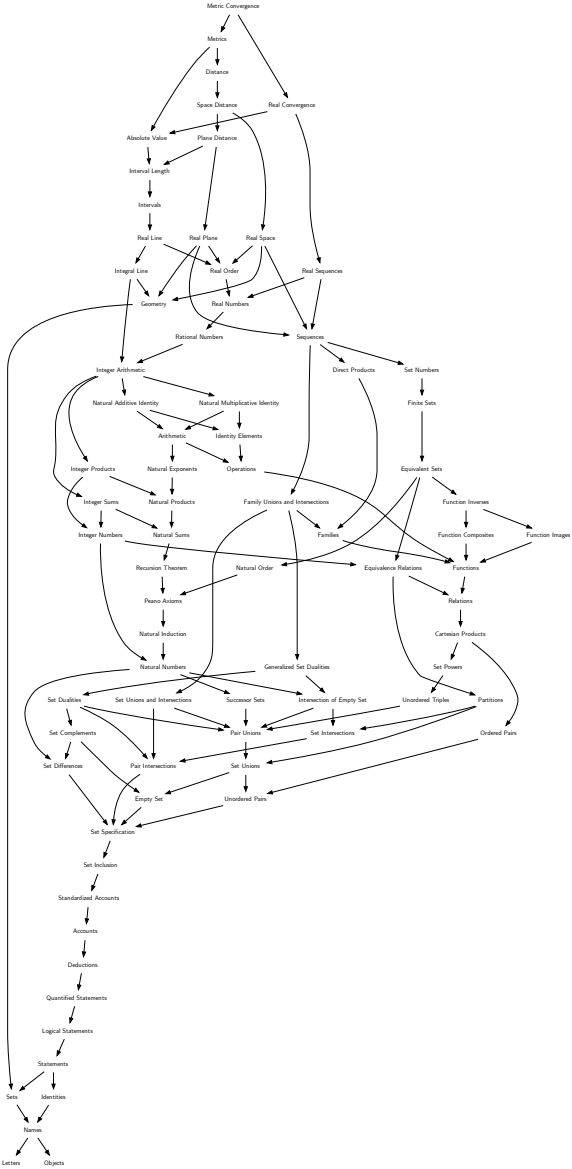
Once we have a notion of distance, we can define a more general notion of convergence.

Definition

A sequence of elements of a metric space *converges* to an fixed element of the space if the sequence of distances between the elements of the fixed element converges to zero.

Notation

Let (A, d) be a metric space. Let $(a_n)_n$ be a sequence in A Then $\{a\}$ converges to a_0 if $d(a_n, a) \to 0$.


Metric Convergence
Metrics
Distance
Space Distance
Real Convergence
Absolute Value
Plane Distance
Interval Length
Intervals
Real Line
Real Plane
Real Space
Integral Line
Real Order
Real Sequences
Geometry
Real Numbers
Rational Numbers
Sequences
Integer Arithmetic
Direct Products
Set Numbers
Natural Additive Identity
Natural Multiplicative Identity
Finite Sets
Arithmetic
Identity Elements
Integer Products
Natural Exponents
Operations
Equivalent Sets
Integer Sums
Natural Products
Family Unions and Intersections
Function Inverses
Integer Numbers
Natural Sums
Families
Function Composites
Function Images
Recursion Theorem
Natural Order
Equivalence Relations
Functions
Peano Axioms
Relations
Natural Induction
Cartesian Products
Natural Numbers
Generalized Set Dualities
Set Powers
Set Dualities
Set Unions and Intersections
Successor Sets
Intersection of Empty Set
Unordered Triples
Partitions
Set Complements
Pair Unions
Set Intersections
Ordered Pairs
Set Differences
Pair Intersections
Set Unions
Empty Set
Unordered Pairs
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Sets
Identities
Names
Letters
Objects