Why

We want to talk about functions from one set with a metric into another set with a metric.

Definition

A *function* from a first metric space to a second metric space is a function from the first set to the second set.

Notation

Suppose (A, d) and (B, d') be metric spaces. We denote that f is a function from the first metric space to the second metric space by 0 $f : (A, d) \to (B, d')$.

Metric Space Functions

Metrics

Distance

Space Distance · Absolute Value

Plane Distance

Interval Length

Real Space · Intervals

Real Plane · Real Line

Real Order · Integral Line

Geometry · Rational Order · Real Numbers

Rational Numbers

Lists · Integer Arithmetic

Set Numbers · Natural Multiplicative Identity · Natural Additive Identity · Integer Products

Finite Sets · Identity Elements · Arithmetic

Direct Products · Equivalent Sets · Natural Powers

Family Unions and Intersections · Function Inverses · Comparisons · Integer Order · Integer Sums · Natural Products

Families · Function Composites · Function Images · Operations · Orders · Integer Numbers · Natural Sums

Functions · Converse Relations · Equivalence Relations · Natural Order · Recursion Theorem

Relations · Peano Axioms

Set Products · Natural Induction

Generalized Set Dualities · Set Powers · Natural Numbers

Set Unions and Intersections · Set Dualities · Unordered Triples · Successor Sets · Intersection of Empty Set · Partitions · Set Symmetric Differences

Ordered Pairs · Pair Unions · Set Intersections · Set Complements

Pair Intersections · Set Unions · Set Differences

Unordered Pairs · Empty Set

Set Specification

Set Equality

Set Inclusion

Standardized Accounts

Accounts

Deductions

Quantified Statements

Logical Statements

Statements

Sets · Identities

Names

Letters · Objects