Why

For any normed vector space, the vector operations are continuous.

Definition

A *topological vector space* is a vector

Topological Vector Spaces

Norm

Functionals

Vectors · Real Norm

Real Vectors · Space Norm

Plane Vector Sums and Differences · Space Vector · N-Dimensional Space · Plane Norm

Plane Vector · Distance · Absolute Value

Space Distance

Plane Distance

Interval Length

Intervals

Real Space · Real Line

Real Plane

Integral Line · Real Order

Geometry · Fields · Real Numbers · Rational Order

Rings · Rational Numbers

Lists · Integer Arithmetic

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

Identity Elements · Arithmetic · Finite Sets

Direct Products · Equivalent Sets · Natural Powers

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

Families · Function Image · Function Composite · Operations · Orders · Integer Numbers · Natural Sums

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

Relations · Peano Axioms

Set Products · Natural Induction

Generalized Set Dualities · Set Powers · Natural Numbers

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