Proposition 1. $\mathbf{R}^n$ *is a vector space of dimension* n *over* $\mathbf{R}$ *with* $+$ *and* $\cdot$.

Vector Space Examples

Vectors

Real Vectors

N-Dimensional Space   Plane Vector Sums and Differences   Space Vectors

Distance

Plane Vectors

Space Distance

Plane Distance

Interval Length

Real Space   Intervals

Real Plane   Real Line

Real Order   Integral Line

Geometry   Rational Order   Real Numbers   Fields

Rational Numbers   Rings

Lists   Integer Arithmetic

Set Numbers   Integer Products   Natural Multiplicative Identity   Natural Additive Identity

Finite Sets   Arithmetic   Identity Elements

Direct Products   Equivalent Sets   Natural Powers

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

Families   Function Image   Function Composites   Orders   Integer Numbers   Natural Sums   Operations

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   Intersection of Empty Set   Successor Sets   Partitions   Set Symmetric Differences

Pair Unions   Set Intersections   Ordered Pairs   Set Complements

Pair Intersections   Set Unions   Set Differences

Unordered Pairs   Empty Set

Set Specification

Set Inclusion

Standardized Accounts

Accounts

Deductions

Quantified Statements

Logical Statements

Statements

Sets   Identities

Names

Letters   Objects