Result

For a given subspace S, the number of vectors in any basis is the same. We call this number the *dimension* of the subspace of S.

Notation

We denote the dimension of S by $\dim S$

Real Subspace Dimension

Real Vector Bases

Independent Set of Real Vectors — Real Vectors Span

Real Linear Combinations

Real Vectors

N-Dimensional Space — Space Vectors — Plane Vector Sums and Differences

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

Rational Numbers

Lists — Integer Arithmetic

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

Finite Sets — Identity Elements — Arithmetic — Natural Powers

Direct Products — Equivalent Sets — Comparisons — Integer Order — Integer Sums — Natural Products

Family Unions and Intersections — Function Inverses — Operations — Orders — Integer Numbers — Natural Sums

Families — Function Composites — Function Images — Converse Relations — Equivalence Relations — Natural Order — Recursion Theorem

Functions — 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

Deductions

Quantified Statements

Logical Statements

Statements

Sets — Identities

Names

Letters — Objects