Definition

The *dimension* of a subspace is the number of vectors in a spanning basis.

Notation

We denote the dimension of the subspace $L \subset \mathbf{R}^n$ by $\dim L$.

Subspace Dimensions

Vector Space Dimensions

Vector Space Bases

Linearly Dependent Vectors · Span

Subspaces

Real Subspaces

Linear Combinations · Real Vector Span

Vectors · Real Linear Combinations

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 Line · Real Plane

Real Order · Integral Line

Rational Order · Fields · Real Numbers · Geometry

Rational Numbers · Rings · Lists

Integer Arithmetic · Set Numbers · Direct Products

Integer Products · Natural Multiplication Identity · Natural Additive Identity · Finite Sets

Arithmetic · Identity Elements · Equivalent Sets

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

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

Natural Sums · Equivalence Relations · Natural Order · Converse Relations · Functions

Recursion Theorem · Relations

Peano Axioms · Ordered Pair Projections

Natural Induction · Set Products

Natural Numbers · Generalized Set Dualities · Set Powers

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

Set Complements · Set Intersections · Pair Unions · Ordered Pairs

Set Differences · Set Unions · Pair Intersections

Empty Set · Unordered Pairs

Set Specification

Set Equality

Set Inclusion

Deductions

Quantified Statements

Logical Statements

Statements

Identities · Sets

Names

Letters · Objects