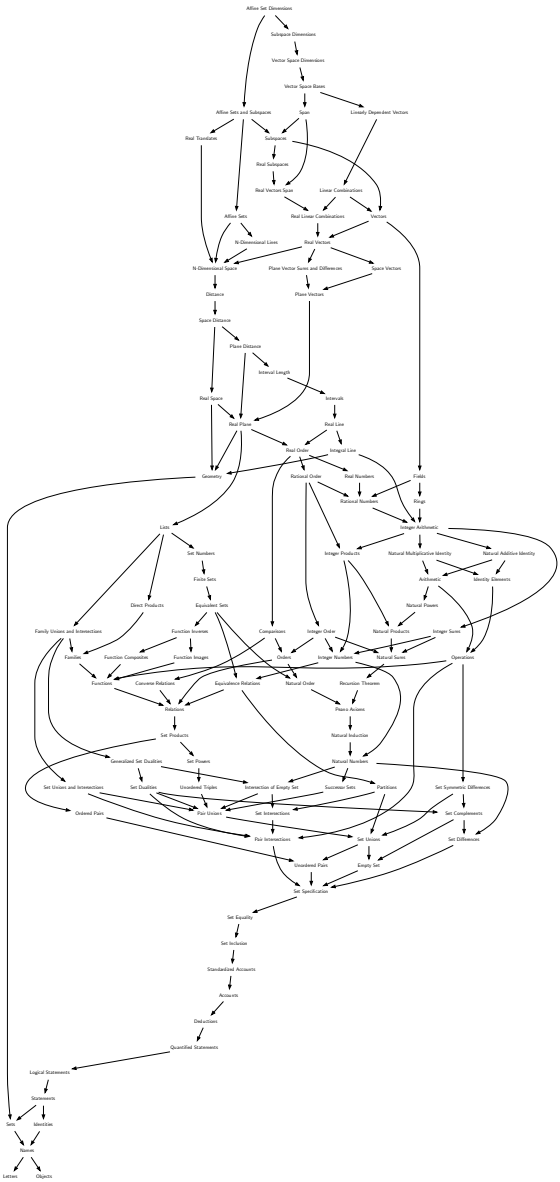
Why

Since every affine set is a translate of some (unique) subspace, it is natural to define the dimension of an affine set as the dimension of this subspace.

Definition

The *dimension* of a nonempty affine set is the dimension of the subspace parallel to it. By convention, $\varnothing$ has dimension -1. Naturally, the *points*, *lines* and *planes* are affine sets of dimension 0, 1, and 2 respectively.


Affine Set Dimension
Subspace Dimension
Vector Space Dimension
Vector Space Basis
Span
Linearly Dependent Vectors
Affine Sets and Subspaces
Real Translation
Subspace
Real Subspace
Real Vector Space
Linear Combinations
Affine Sets
Real Linear Combinations
Vectors
N-Dimensional Lines
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
Integer Arithmetic
Lists
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
Function
Function Composition
Function Images
Orders
Integer Numbers
Natural Sums
Operations
Function
Converse Relations
Equivalence Relations
Natural Order
Recursion Theorem
Relations
Peano Axioms
Set Products
Natural Induction
Generalized Set Duplition
Set Powers
Natural Numbers
Set Unions and Intersections
Set Duplition
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
Basics
Lattices
Objects