Why

[1]

Defining Result

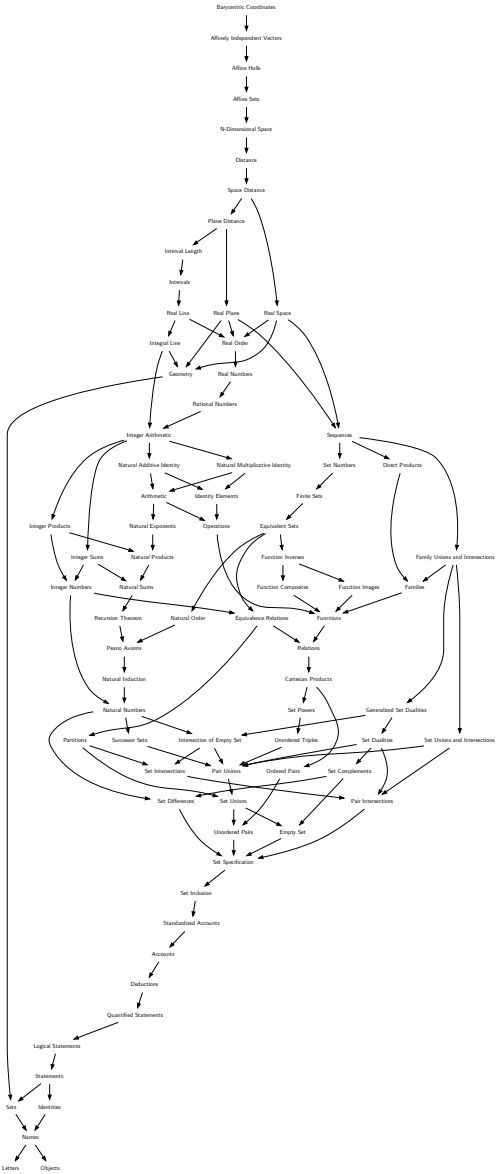
Prop. 1. *If* $M = \mathbf{aff}\{b_0, b_1, \ldots, b_m\}$ *then for each* $x \in M$ *there exists* (λ_i) *such that*

$$x = \lambda_0 b_0 + \lambda_1 b_1 + \cdots + \lambda_m b_m$$

with $\sum_i \lambda_i = 1$. *The* (λ_i) *are unique if the set of vectors is affinely independent.*

The *barycentric coordinates* for a vector x in the affine hull of a set of affinely independent vectors is the sequence of unique coefficients expressing the vector as an affine combination of the set of vectors.

[1] Future editions will include.


Barycentric Coordinates
Affinely Independent Vectors
Affine Hulls
Affine Sets
N-Dimensional Space
Distance
Space Distance
Plane Distance
Interval Length
Intervals
Real Line
Real Plane
Real Space
Integral Line
Real Order
Geometry
Real Numbers
Rational Numbers
Integer Arithmetic
Sequences
Natural Additive Identity
Natural Multiplicative Identity
Set Numbers
Direct Products
Arithmetic
Identity Elements
Finite Sets
Integer Products
Natural Exponents
Operations
Equivalent Sets
Integer Sums
Natural Products
Function Inverses
Family Unions and Intersections
Integer Numbers
Natural Sums
Function Composites
Function Images
Families
Recursion Theorem
Natural Order
Equivalence Relations
Functions
Peano Axioms
Relations
Natural Induction
Cartesian Products
Natural Numbers
Set Powers
Generalized Set Dualities
Partitions
Successor Sets
Intersection of Empty Set
Unordered Triples
Set Dualities
Set Unions and Intersections
Set Intersections
Pair Unions
Ordered Pairs
Set Complements
Set Differences
Set Unions
Pair Intersections
Unordered Pairs
Empty Set
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Sets
Identities
Names
Letters
Objects