Why

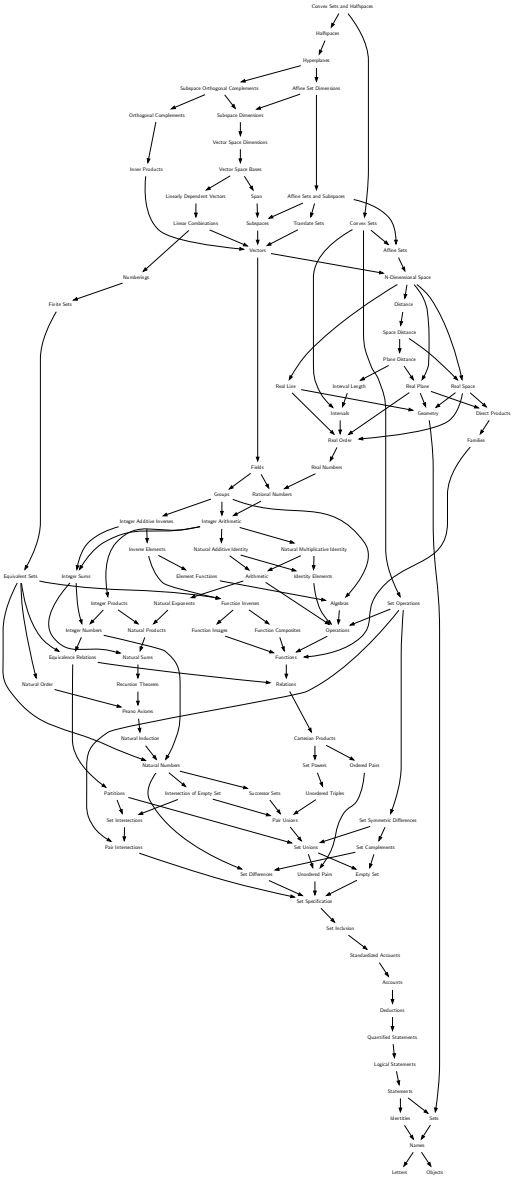
Main Result

Corollary 1. *Let* $(b_i)_{i\in I}$ *be a family in* $\mathbf{R}^n$ *and* $(\beta_i)_{i\in I}$ *be a family in* $\mathbf{R}$*. The set*

$$\{x \in \mathbf{R}^n \mid \langle x, b_i\rangle \leq \beta_i \text{ for all } i \in I\}$$

is convex.

A *polyhedral* convex set is one which can be expressed as the intersection of a finite family of closed halfspaces.


Convex Sets and Halfspaces
Halfspaces
Hyperplanes
Subspace Orthogonal Complements
Affine Set Dimensions
Orthogonal Complements
Subspace Dimensions
Vector Space Dimensions
Inner Products
Vector Space Bases
Linearly Dependent Vectors
Span
Affine Sets and Subspaces
Linear Combinations
Subspaces
Translate Sets
Convex Sets
Affine Sets
Vectors
Numberings
n-Dimensional Space
Finite Sets
Distance
Space Distance
Plane Distance
Real Line
Interval Length
Real Plane
Real Space
Intervals
Geometry
Direct Products
Families
Real Order
Fields
Real Numbers
Groups
Rational Numbers
Integer Additive Inverses
Integer Arithmetic
Inverse Elements
Natural Additive Identity
Natural Multiplicative Identity
Equivalent Sets
Integer Sums
Element Functions
Arithmetic
Identity Elements
Integer Products
Natural Exponents
Function Inverses
Algebras
Set Operations
Integer Numbers
Natural Products
Function Images
Function Composites
Operations
Equivalence Relations
Natural Sums
Functions
Natural Order
Recursion Theorem
Relations
Peano Axioms
Natural Induction
Cartesian Products
Natural Numbers
Set Powers
Ordered Pairs
Partitions
Intersection of Empty Set
Successor Sets
Unordered Triples
Set Intersections
Pair Unions
Set Symmetric Differences
Pair Intersections
Set Unions
Set Complements
Set Differences
Unordered Pairs
Empty Set
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects