Why

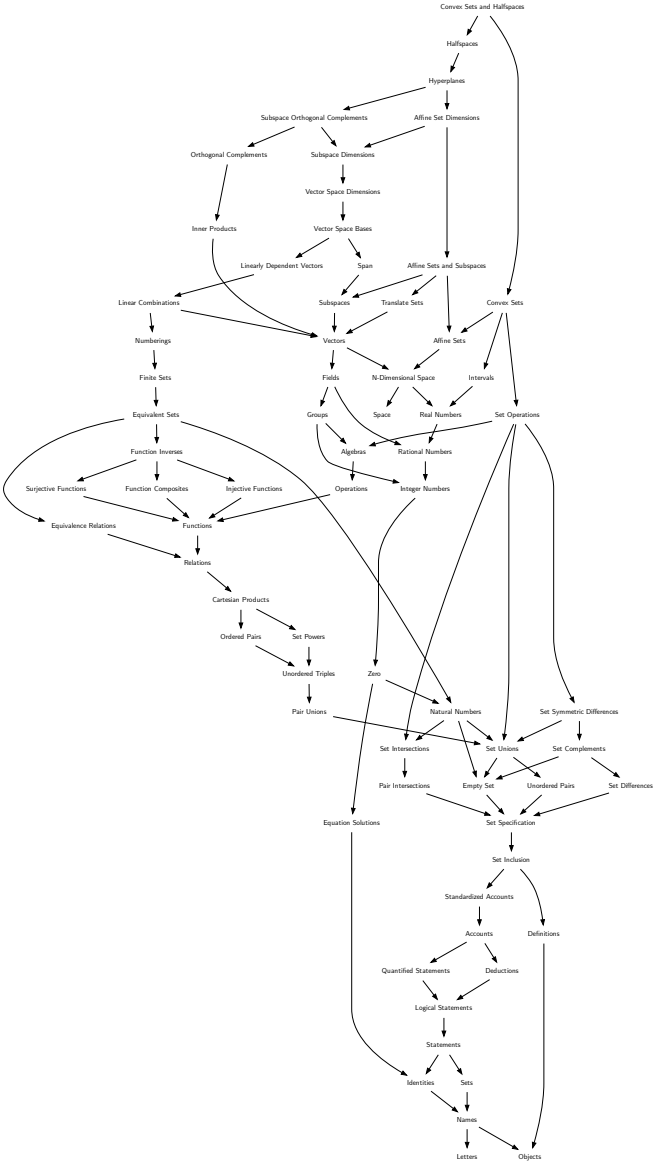
Main Result

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
Numberings
Vectors
Affine Sets
Finite Sets
Fields
N-Dimensional Space
Intervals
Equivalent Sets
Groups
Space
Real Numbers
Set Operations
Function Inverses
Algebras
Rational Numbers
Surjective Functions
Function Composites
Injective Functions
Operations
Integer Numbers
Equivalence Relations
Functions
Relations
Cartesian Products
Ordered Pairs
Set Powers
Unordered Triples
Zero
Natural Numbers
Set Symmetric Differences
Pair Unions
Set Intersections
Set Unions
Set Complements
Pair Intersections
Empty Set
Unordered Pairs
Set Differences
Equation Solutions
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Definitions
Quantified Statements
Deductions
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects