Why

Definition

A *convex combination* is a linear combination whose sequence of scalars is nonnegative and sums to one.

Characterization

PROPOSITION **1.** *A subset of $\mathbf{R}^n$ is convex if and only if it contains all the convex combinations of its elements.*

Convex Combinations

Convex Sets → Linear Combinations

Affine Sets

Vectors

Numberings

Intervals

N-Dimensional Space

Fields

Finite Sets

Real Numbers

Space

Groups

Set Operations

Equivalent Sets

Rational Numbers

Algebras

Function Inverses

Integer Numbers

Operations

Function Composites

Injective Functions

Surjective Functions

Zero

Functions

Equivalence Relations

Equation Solutions

Natural Numbers

Set Symmetric Differences

Relations

Set Intersections

Set Unions

Ordered Pairs

Equations

Set Complements

Unordered Pairs

Set Specification

Set Inclusion

Empty Set

Set Equality

Identity

Standardized Accounts

Accounts

Deductions

Quantified Statements

Logical Statements

Statements

Sets

Identities

Objects