Result

Proposition 1. *Suppose $C \subset \mathbf{R}^n$ is convex and $T : \mathbf{R}^n \to \mathbf{R}^m$ is an affine transformation. Then $T(C)$ is convex.*

Affine Transformations of Real Convex Sets

Real Convex Sets

Real Halfspaces · Topological Interiors

Real Hyperplanes

Subspace Orthogonal Complements

Subspace Dimension

Vector Space Dimensions

Vector Space Bases · Affine Set Dimensions

Span · Linearly Dependent Vectors · Orthogonal Complements · Affinely Independent Vectors

Vectors as Matrices · Real Subspace Dimension · Real Vector Bases · Real Subspaces · Linear Combinations · Real Inner Products · Real Affine Hulls · Real Affine Sets and Subspaces

Real Matrices · Independent Set of Real Vectors · Real Vector Space · Vectors · Real Inner Product · Real Affine Combinations · Real Affine Sets · Topological Closure · N-Dimensional Line Segments

Real Linear Equations · Real Linear Combinations · Real Basis · Space Inner Product · N-Dimensional Lines · Real Translates · Topological Neighborhoods

Arrays · Linear Functions · Real Vectors · Space Norm · Real Set Closure · N-Dimensional Space · Topologies

Plane Vector Sums and Differences · Space Vectors · Plane Norm · Plane Inner Product · Real Limits · Metrics

Plane Vectors · Absolute Value · Right Triangle Sides Relation · Distance

Space Distance · Real Square

Plane Distance · Real Arithmetic

Interval Length · Real Multiplicative Inverses

Real Products · Intervals · Real Space

Real Addition Inverses · Real Plane · Real Line · Square Numbers

Real Sequences · Real Summation · Real Sums · Rational Multiplicative Inverses · Real Order · Rational Arithmetic · Integral Line · Squares

Sequences · Natural Summation · Real Numbers · Rational Products · Rational Sums · Fields · Rational Order · Geometry

Lists · Set Numbers · Natural Numbers · Rings

Direct Products · Finite Sets · Natural Fractions · Integer Arithmetic · Integer Products

Inverse Elements · Equivalent Sets · Natural Additive Identity · Natural Multiplicative Identity · Identity Elements · Natural Arithmetic

Family Unions and Intersections · Family Operations · Function Inverses · Element Functions · Comparisons · Natural Equations · Integer Order · Integer Sums · Natural Powers

Families · Function Images · Function Composites · Operations · Equations · Orders · Integer Numbers · Natural Products

Functions · Concrete Relations · Equivalence Relations · Natural Order · Natural Sums

Relations · Recursion Theorem

Ordered Pair Projections · Peano Axioms

Set Products · Natural Induction

Generalized Set Dualities · Set Powers · Natural Numbers

Set Dualities · Unordered Triples · Successor Sets · Intersection of Empty Set · Set Partitions · Set Symmetric Differences

Set Unions and Intersections · Pair Unions · Set Intersections · Set Complements

Ordered Pairs · Set Unions · Set Differences

Pair Intersections · Unordered Pairs · Empty Set

Set Specification

Set Equality

Set Inclusion

Deductions

Quantified Statements

Logical Statements

Statements

Identities · Sets

Names

Letters · Objects