Subspace Orthogonal Complements

Why

Main Result

PROPOSITION **1.** *The orthogonal complement of a subspace is a subspace.*

PROPOSITION **2.** *Let $L \subset \mathbf{R}^n$ be a subspace. Then*

$$\dim L + \dim L^{\perp} = n.$$

PROPOSITION **3.** *Let $b_1, \ldots, b_m$ be a basis for a subspace $L \subset \mathbf{R}^n$. Then $x \perp L$ if and only if $x \perp b_i$ for $i = \{1, 2, \ldots, m\}$.*

Subspace Orthogonal Complements

Subspace Dimensions

Orthogonal Complements

Vector Space Dimensions

Vector Space Bases

Inner Products

Linearly Dependent Vectors

Span

Linear Combinations

Subspaces

Numberings

Vectors

Finite Sets

Fields

N-Dimensional Space

Equivalent Sets

Groups

Real Numbers

Space

Function Inverses

Algebras

Rational Numbers

Injective Functions

Surjective Functions

Function Composites

Operations

Integer Numbers

Functions

Equivalence Relations

Relations

Zero

Ordered Pairs

Natural Numbers

Equation Solutions

Unordered Pairs

Set Unions

Set Intersections

Set Specification

Equations

Set Inclusion

Empty Set

Set Equality

Standardized Accounts

Identity

Accounts

Deductions

Quantified Statements

Logical Statements

Statements

Sets

Identities

Objects