Why

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Definition

Two vectors in an inner product space are *orthogonal* if their inner product is zero. An *orthogonal family of vectors* in an inner product space is a family of vectors for which distinct family members are orthogonal.

A vector is *normalized* if its inner product with itself is one.

Examples

Notation

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[1] Future editions will include this section.

Inner Products

Vectors

N-Dimensional Space

Distance

Space Distance

Plane Distance

Interval Length

Intervals

Real Space   Real Plane   Real Line

Direct Products   Real Order   Geometry

Fields   Real Numbers

Families   Groups   Rational Numbers

Integer Additive Inverse   Integer Arithmetic

Inverse Elements   Integer Sums   Natural Additive Identity   Natural Multiplicative Identity

Element Functions   Identity Elements   Arithmetic

Function Inverses   Algebras   Natural Exponents   Integer Products

Function Images   Function Composites   Operations   Natural Products

Functions   Integer Numbers   Natural Sums

Equivalence Relations   Recursion Theorem

Relations   Peano Axioms

Cartesian Products   Natural Induction

Set Powers   Natural Numbers

Partitions   Intersection of Empty Set   Unordered Triples   Successor Sets

Ordered Pairs   Set Intersections   Pair Unions

Set Unions   Set Differences

Unordered Pairs   Empty Set   Pair Intersections

Set Specification

Set Inclusion

Standardized Accounts

Accounts

Deductions

Quantified Statements

Logical Statements

Statements

Identities   Sets

Names

Letters   Objects

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