1 Why

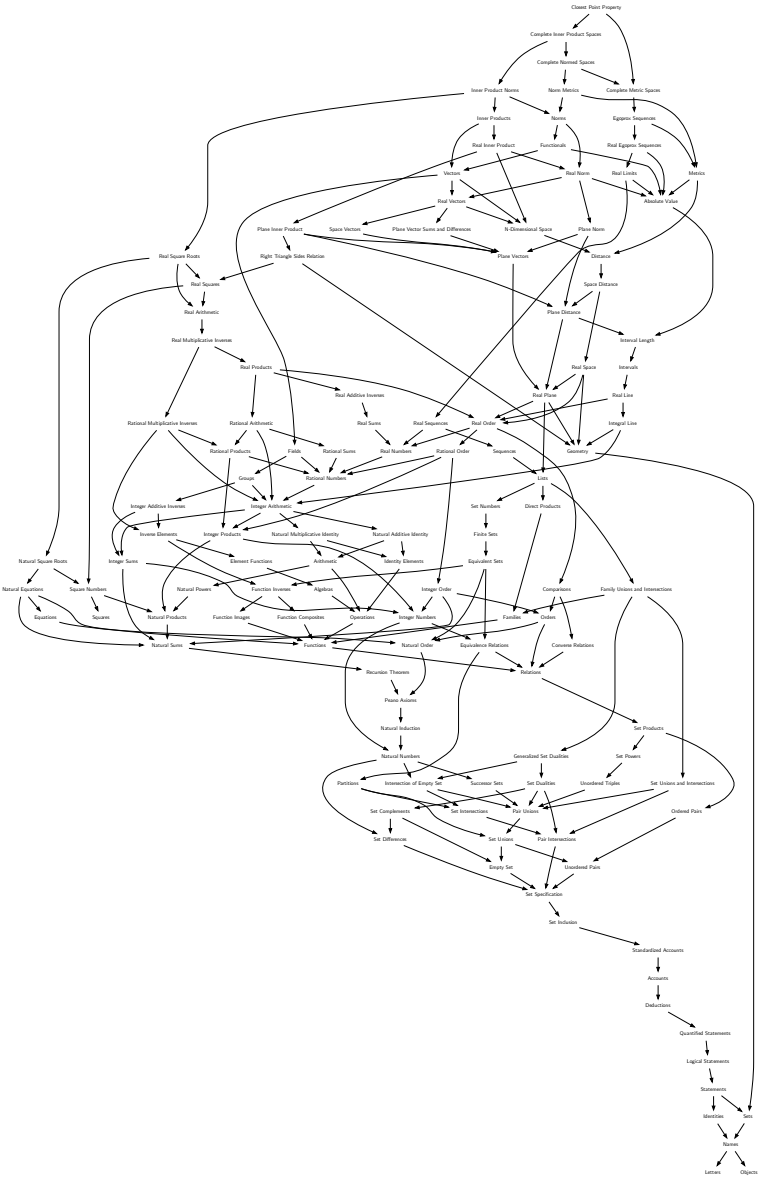
[1]

2 Result

Proposition 1. *Suppose X is a complete inner product space, $A \subset X$ closed and convex, and $x \in X$. There exists a unique $z \in X$ satisfying*

$$d(z, x) = \inf_{y \in A} d(y, x).$$

[1] Future editions will include.


Closest Point Property
Complete Inner Product Spaces
Complete Normed Spaces
Inner Product Norms
Norm Metrics
Complete Metric Spaces
Inner Products
Norms
Egoross Sequences
Real Inner Product
Functionals
Real Egoross Sequences
Vectors
Real Norm
Real Limits
Metrics
Absolute Value
Real Vectors
Plane Inner Product
Space Vectors
Plane Vector Sums and Differences
N-Dimensional Space
Plane Norm
Plane Vectors
Distance
Real Square Roots
Right Triangle Sides Relation
Real Squares
Space Distance
Real Arithmetic
Plane Distance
Interval Length
Real Multiplicative Inverses
Real Products
Real Space
Intervals
Real Additive Inverses
Real Plane
Real Line
Rational Multiplicative Inverses
Rational Arithmetic
Real Sums
Real Sequences
Real Order
Integral Line
Rational Products
Fields
Rational Sums
Real Numbers
Rational Order
Sequences
Geometry
Groups
Rational Numbers
Lists
Integer Additive Inverses
Integer Arithmetic
Set Numbers
Direct Products
Inverse Elements
Integer Products
Natural Multiplicative Identity
Natural Additive Identity
Finite Sets
Natural Square Roots
Integer Sums
Element Functions
Arithmetic
Identity Elements
Equivalent Sets
Natural Equations
Square Numbers
Natural Powers
Function Inverses
Algebras
Integer Order
Comparisons
Family Unions and Intersections
Equations
Squares
Natural Products
Function Image
Function Composites
Operations
Integer Numbers
Families
Orders
Natural Sums
Functions
Natural Order
Equivalence Relations
Converse Relations
Recursion Theorem
Relations
Peano Axioms
Natural Induction
Set Products
Natural Numbers
Generalized Set Dualities
Set Powers
Partitions
Intersection of Empty Set
Successor Sets
Set Dualities
Unordered Triples
Set Unions and Intersections
Set Complements
Set Intersections
Pair Unions
Ordered Pairs
Set Difference
Set Unions
Pair Intersections
Empty Set
Unordered Pairs
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects