Why

If we have a norm, then we have a metric.

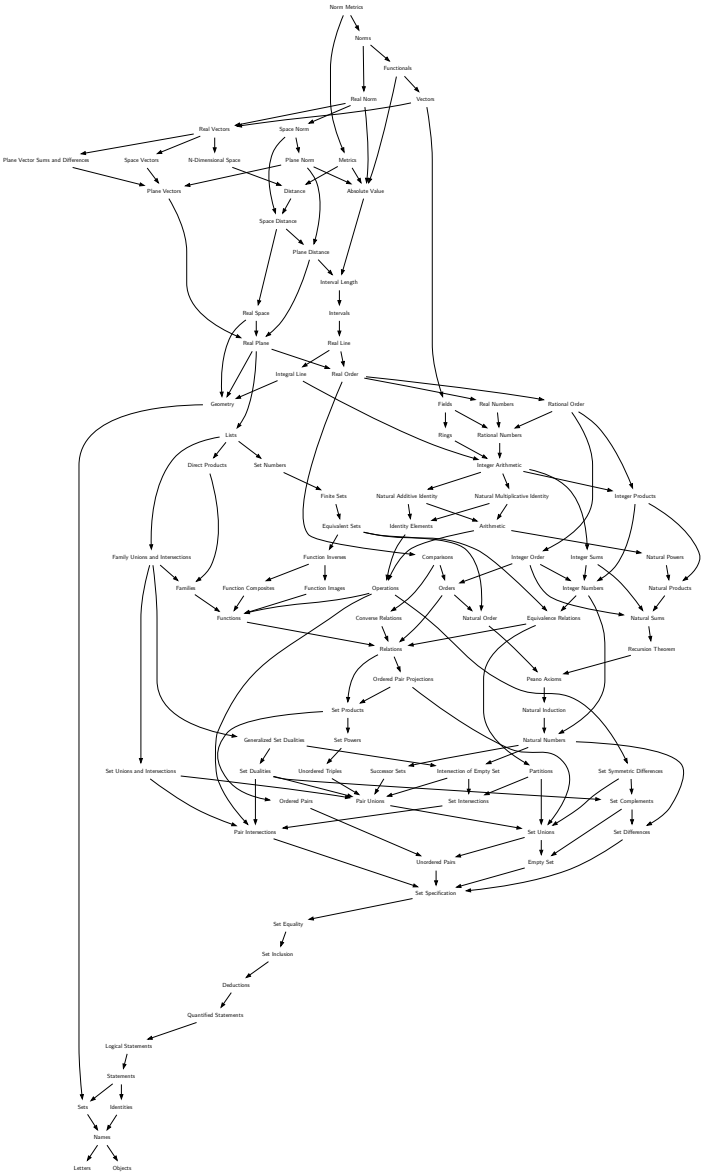
Motivating result

Proposition 1. *Let (V, F) be a vector space. Let $f : V \to \mathbf{R}$ be a norm. Let $g : V \times V \to \mathbf{R}$ such that*

$$g(x, y) = \|x - y\|.$$

Then g is a metric.[1]

[1] Future editions will include an account.


Norm Metrics
Norms
Functionals
Real Norm
Vectors
Real Vectors
Space Norm
Plane Vector Sums and Differences
Space Vectors
N-Dimensional Space
Plane Norm
Metrics
Plane Vectors
Distance
Absolute Value
Space Distance
Plane Distance
Interval Length
Real Space
Intervals
Real Plane
Real Line
Integral Line
Real Order
Geometry
Fields
Real Numbers
Rational Order
Lists
Rings
Rational Numbers
Integer Arithmetic
Direct Products
Set Numbers
Integer Products
Finite Sets
Natural Additive Identity
Natural Multiplicative Identity
Equivalent Sets
Identity Elements
Arithmetic
Family Unions and Intersections
Function Inverses
Comparisons
Integer Order
Integer Sums
Natural Powers
Families
Function Composites
Function Images
Operations
Orders
Integer Numbers
Natural Products
Functions
Converse Relations
Natural Order
Equivalence Relations
Natural Sums
Relations
Recursion Theorem
Ordered Pair Projections
Peano Axioms
Set Products
Natural Induction
Generalized Set Dualities
Set Powers
Natural Numbers
Set Unions and Intersections
Set Dualities
Unordered Triples
Successor Sets
Intersection of Empty Set
Partitions
Set Symmetric Differences
Ordered Pairs
Pair Unions
Set Intersections
Set Complements
Pair Intersections
Set Unions
Set Differences
Unordered Pairs
Empty Set
Set Specification
Set Equality
Set Inclusion
Deductions
Quantified Statements
Logical Statements
Statements
Sets
Identities
Names
Letters
Objects