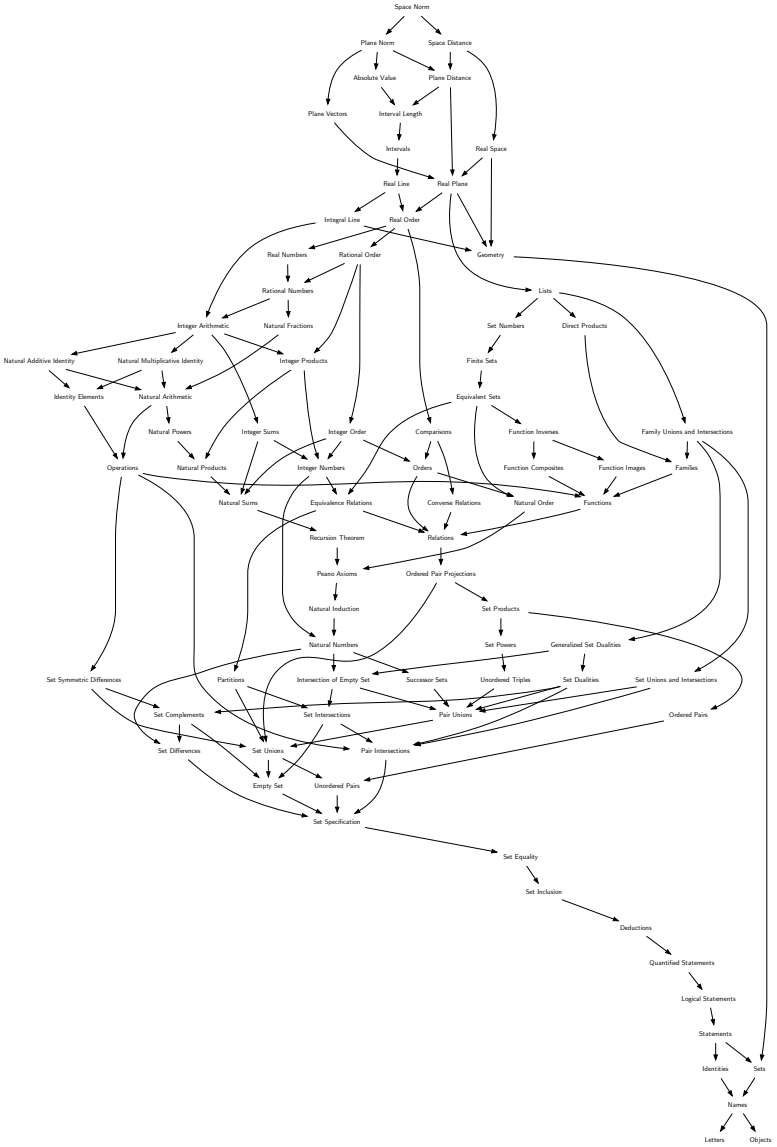
Why

We generalize our notion of norm from the plane, $\mathbf{R}^2$, to the space, $\mathbf{R}^3$.

Definition

The *norm* of a vector $x \in \mathbf{R}^3$ is

$$\|x\| = \sqrt{x_1^2 + x_2^2 + x_3^3}.$$


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