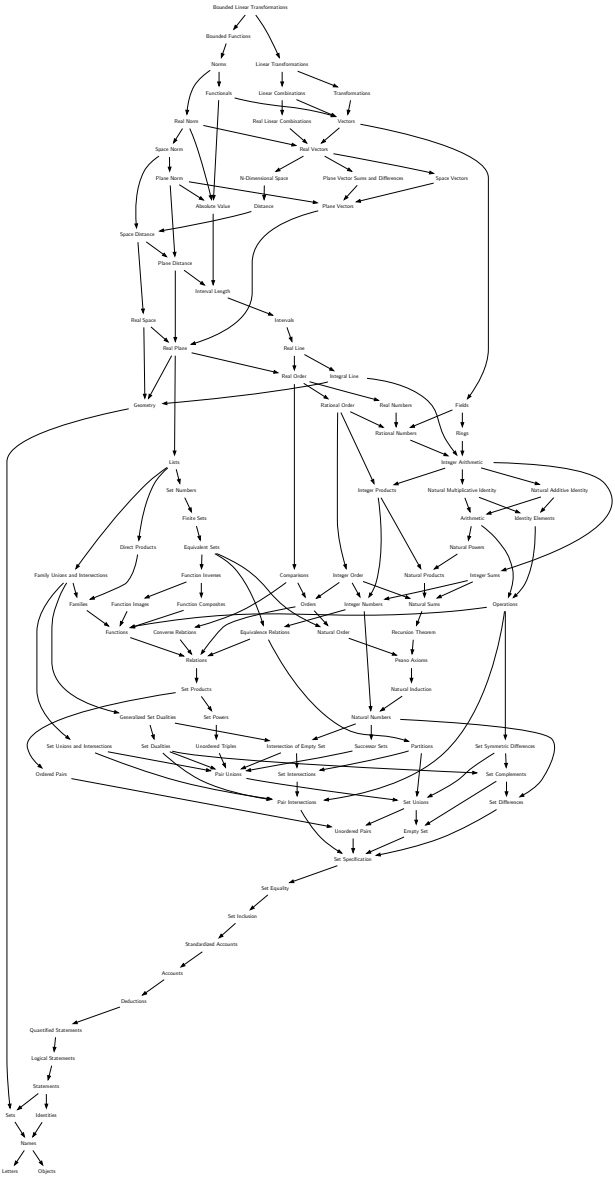
Why

Many things in real life are bounded and linear.[1] More importantly, a bounded linear function between two norm spaces is continuous. We will show this later.

Definition

A *bounded linear transformation* between two norm spaces is a linear function which is bounded. As with linear transformations, we sometimes call bounded linear transformations *bounded linear functions*. Bounded linear functions are sometimes called *bounded operators*, since linear functions are sometimes called operators.

[1] Future editions will expand on this weak explanation.


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