Why

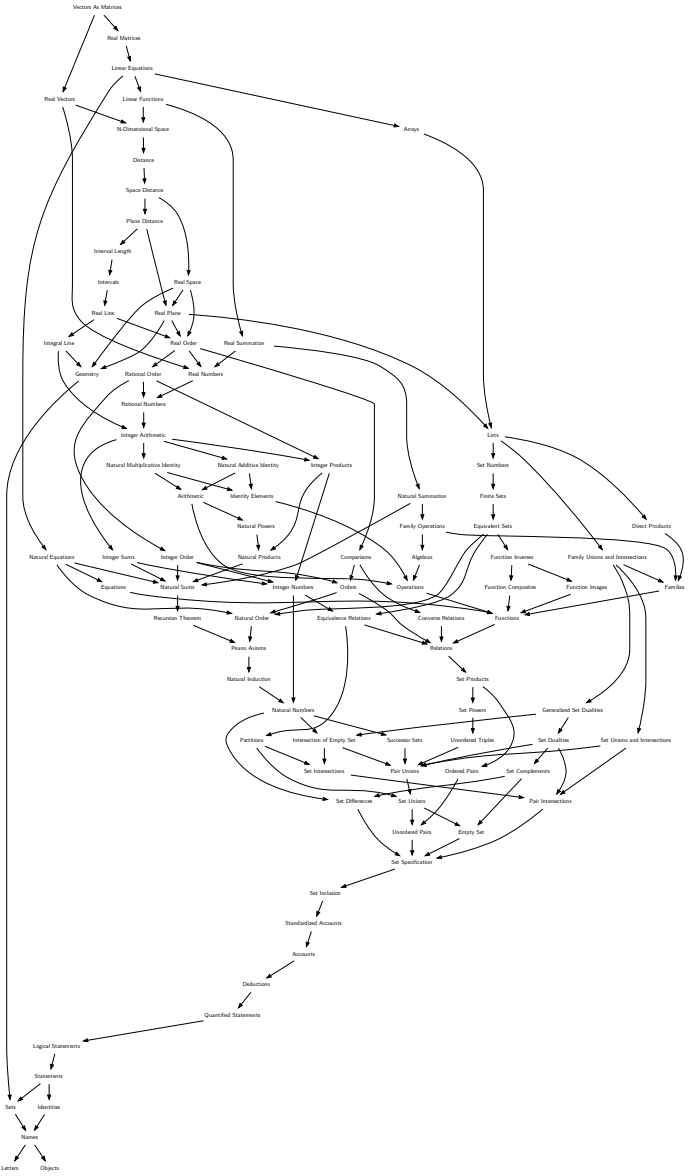
A vector can be viewed as a matrix of height 1 or a matrix of width one.

Canonical Identification

We identify $\mathbf{R}^n$ with $\mathbf{R}^{n\times 1}$ in the obvious way. For this reason, we call $x \in \mathbf{R}^n$ (equivalently $x \in \mathbf{R}^{n\times 1}$) a *column vector*.

We write the vector

We could as easily also identify $\mathbf{R}^n$ with $\mathbf{R}^{1\times n}$. We avoid this convention. However, by analogy with the language "column vector," we refer to the *matrix* $y \in \mathbf{R}^{1\times n}$ as a *row vector*.


Vectors As Matrices
Real Matrices
Linear Equations
Real Vectors
Linear Functions
Arrays
N-Dimensional Space
Distance
Space Distance
Plane Distance
Interval Length
Intervals
Real Space
Real Line
Real Plane
Integral Line
Real Order
Real Summation
Geometry
Rational Order
Real Numbers
Rational Numbers
Integer Arithmetic
Lists
Natural Multiplicative Identity
Natural Additive Identity
Integer Products
Set Numbers
Arithmetic
Identity Elements
Natural Summation
Finite Sets
Natural Powers
Family Operations
Equivalent Sets
Direct Products
Natural Equations
Integer Sums
Integer Order
Natural Products
Comparisons
Algebras
Function Inverses
Family Unions and Intersections
Equations
Natural Sums
Integer Numbers
Orders
Operations
Function Composites
Function Images
Families
Recursion Theorem
Natural Order
Equivalence Relations
Converse Relations
Functions
Peano Axioms
Relations
Natural Induction
Set Products
Natural Numbers
Set Powers
Generalized Set Dualities
Partitions
Intersection of Empty Set
Successor Sets
Unordered Triples
Set Dualities
Set Unions and Intersections
Set Intersections
Pair Unions
Ordered Pairs
Set Complements
Set Differences
Set Unions
Pair Intersections
Unordered Pairs
Empty Set
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Sets
Identities
Names
Letters
Objects