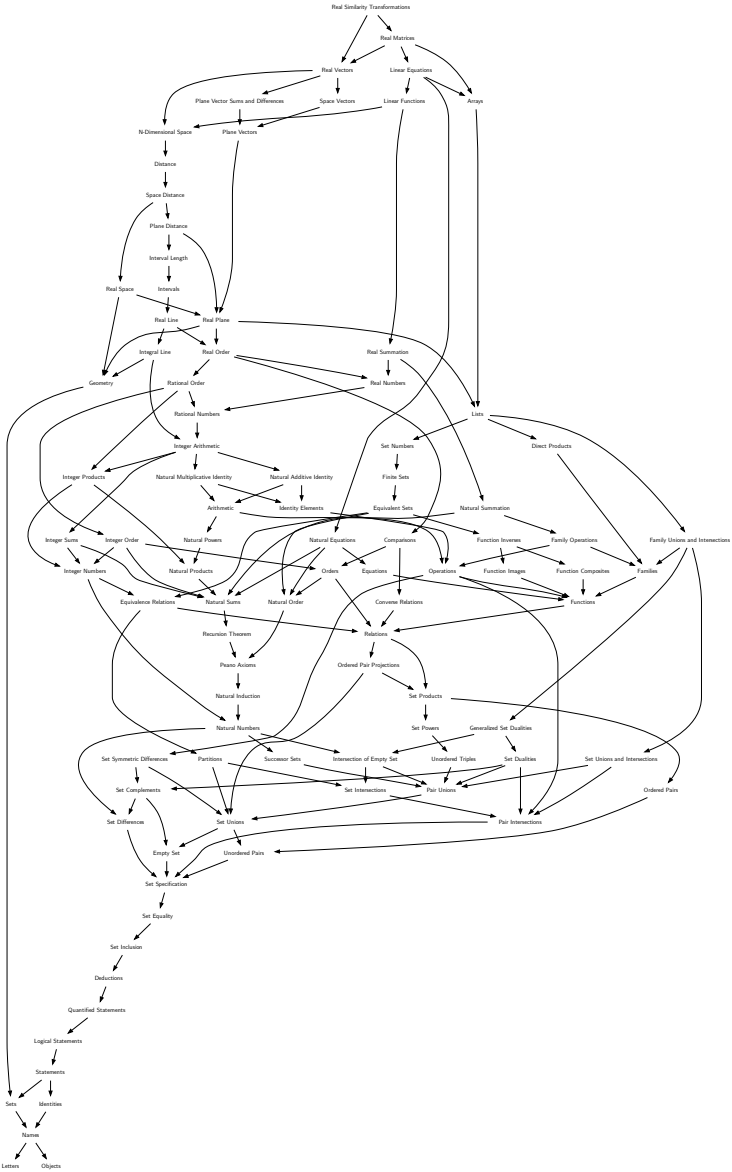
Standard basis vectors

Define $e_i \in \mathbf{R}^n$ by $[e_i]_j = 1$ if $i = j$ and 0 otherwise. Then $e_1, e_2, \ldots, e_n \in \mathbf{R}^n$ are called the *standard basis vectors* (*canonical basis vectors*) for $\mathbf{R}^n$. For example, in $\mathbf{R}^3$,

$$e_1 = \begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix}$$


Real Similarity Transformations
Real Matrices
Real Vectors
Linear Equations
Plane Vector Sums and Differences
Space Vectors
Linear Functions
Arrays
N-Dimensional Space
Plane Vectors
Distance
Space Distance
Plane Distance
Interval Length
Real Space
Intervals
Real Line
Real Plane
Integral Line
Real Order
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Geometry
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Lists
Integer Arithmetic
Set Numbers
Direct Products
Integer Products
Natural Multiplicative Identity
Natural Additive Identity
Finite Sets
Arithmetic
Identity Elements
Equivalent Sets
Natural Summation
Integer Sums
Integer Order
Natural Powers
Natural Equations
Comparisons
Function Inverses
Family Operations
Family Unions and Intersections
Integer Numbers
Natural Products
Orders
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Operations
Function Images
Function Composites
Families
Equivalence Relations
Natural Sums
Natural Order
Converse Relations
Functions
Recursion Theorem
Relations
Peano Axioms
Ordered Pair Projections
Natural Induction
Set Products
Natural Numbers
Set Powers
Generalized Set Dualities
Set Symmetric Differences
Partitions
Successor Sets
Intersection of Empty Set
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
Sets
Identities
Names
Letters
Objects