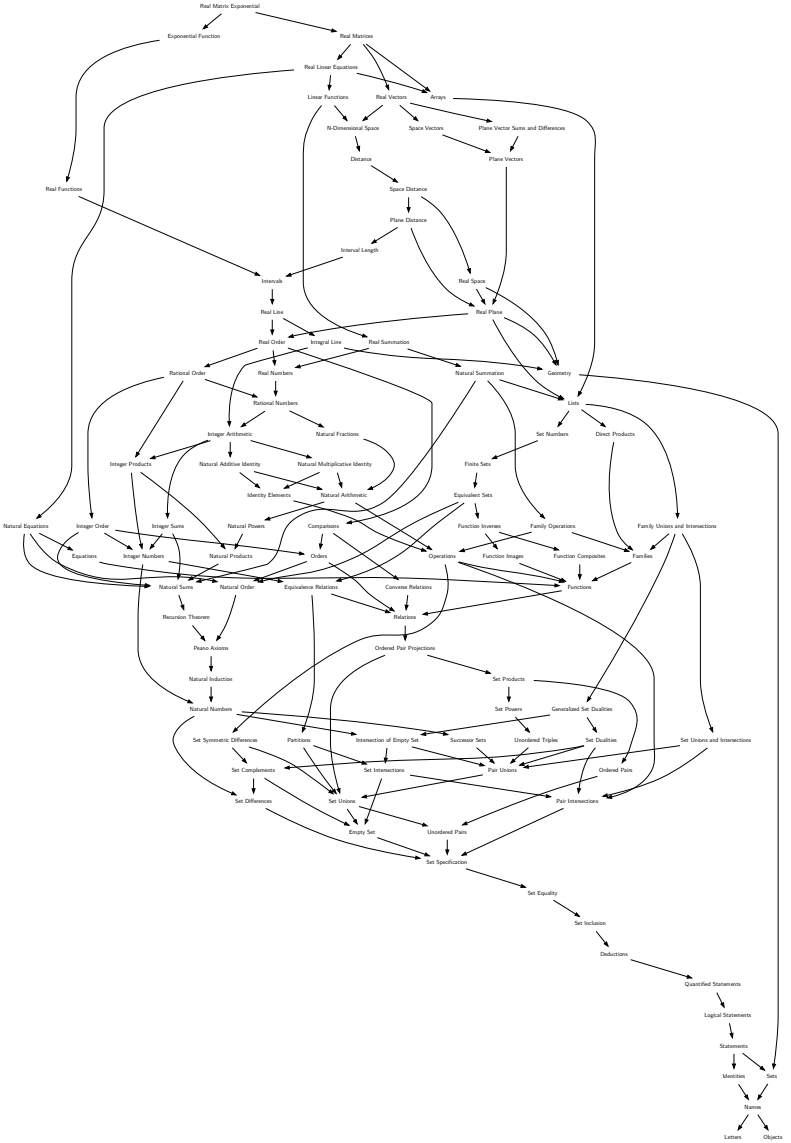
Definition

The *matrix exponential* of a real matrix $M \in \mathbf{R}^{n\times n}$ is the matrix

$$I + M + \frac{M^2}{2!} + \frac{M^3}{3!} + \cdots .$$

It is a (nontrivial) fact that this (matrix) power series converges for all $M \in \mathbf{R}^{n\times n}$.


Real Matrix Exponential
Exponential Function
Real Matrices
Real Linear Equations
Linear Functions
Real Vectors
Arrays
N-Dimensional Space
Space Vectors
Plane Vector Sums and Differences
Distance
Plane Vectors
Real Functions
Space Distance
Plane Distance
Interval Length
Intervals
Real Space
Real Line
Real Plane
Real Order
Integral Line
Real Summation
Rational Order
Real Numbers
Natural Summation
Geometry
Rational Numbers
Lists
Integer Arithmetic
Natural Fractions
Set Numbers
Direct Products
Integer Products
Natural Additive Identity
Natural Multiplicative Identity
Finite Sets
Identity Elements
Natural Arithmetic
Equivalent Sets
Natural Equations
Integer Order
Integer Sums
Natural Powers
Comparisons
Function Inverses
Family Operations
Family Unions and Intersections
Equations
Integer Numbers
Natural Products
Orders
Operations
Function Images
Function Composites
Families
Natural Sums
Natural Order
Equivalence Relations
Convene 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
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