Why

Definition

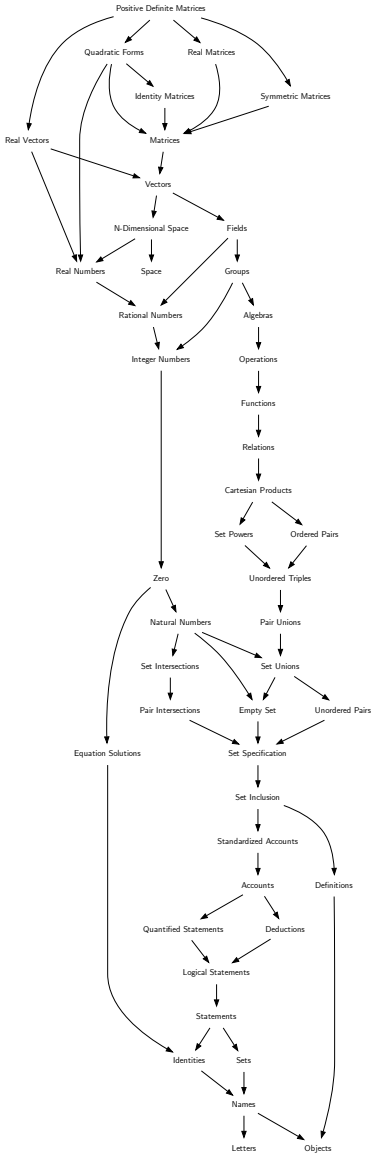
A matrix A is *positive definite* if all its quadratic forms are positive.

Notation

Let $A \in \mathbf{R}^{n \times n}$. A is positive definite if for every $x \in \mathbf{R}^d$,

$$x^T A x > 0.$$

We denote the set of real-valued positive definite d by d matrices by $\mathbf{S}^d_{++}$.


Positive Definite Matrices
Quadratic Forms
Real Matrices
Identity Matrices
Symmetric Matrices
Real Vectors
Matrices
Vectors
N-Dimensional Space
Fields
Real Numbers
Space
Groups
Rational Numbers
Algebras
Integer Numbers
Operations
Functions
Relations
Cartesian Products
Set Powers
Ordered Pairs
Zero
Unordered Triples
Natural Numbers
Pair Unions
Set Intersections
Set Unions
Pair Intersections
Empty Set
Unordered Pairs
Equation Solutions
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Definitions
Quantified Statements
Deductions
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects