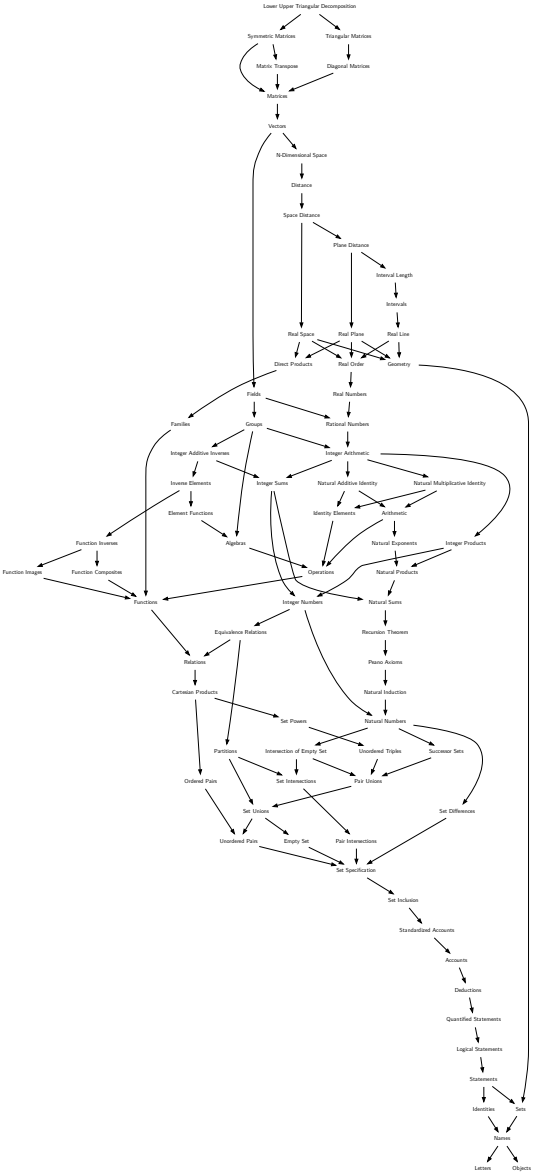
Why

Definition

Let $A \in \mathbf{R}^{n \times n}$ be real symmetric. An *lower upper triangular decomposition* of A is a matrix $L \in \mathbf{R}^{n \times n}$ that is lower triangular and satisfies

$$A = LL^{\top}.$$

This is univerally known as a *Cholesky decomposition*.


Lower Upper Triangular Decomposition
Symmetric Matrices
Triangular Matrices
Matrix Transpose
Diagonal Matrices
Matrices
Vectors
N-Dimensional Space
Distance
Space Distance
Plane Distance
Interval Length
Intervals
Real Space
Real Plane
Real Line
Direct Products
Real Order
Geometry
Fields
Real Numbers
Families
Groups
Rational Numbers
Integer Additive Inverses
Integer Arithmetic
Inverse Elements
Integer Sums
Natural Additive Identity
Natural Multiplicative Identity
Element Functions
Identity Elements
Arithmetic
Function Inverses
Algebras
Natural Exponents
Integer Products
Function Images
Function Composites
Operations
Natural Products
Functions
Integer Numbers
Natural Sums
Equivalence Relations
Recursion Theorem
Relations
Peano Axioms
Cartesian Products
Natural Induction
Set Powers
Natural Numbers
Partitions
Intersection of Empty Set
Unordered Triples
Successor Sets
Ordered Pairs
Set Intersections
Pair Unions
Set Unions
Set Differences
Unordered Pairs
Empty Set
Pair Intersections
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects