Why

TODO Need for perfect elimination orderings.

definition

An *ordering* of an undirected graph is a numbering of its vertices. An *ordered undirected graph* is a triple: the first two objects as an ordered pair are an undirected graph and the third object is a numbering of this graphs vertices.

Notation

Let $G = (V, E)$ be an undirected graph with $n = |V|$. Let $\sigma : \{1, 2, \ldots, n\} \to V$ be a numbering of V. We denote the ordered graph consisting of G and σ as $G_\sigma = (V, E, \sigma)$.

Array Visualization

We visualize ordered graphs as triangular arrays by

Ordered Undirected Graphs

Undirected Graphs

Finite Sets

Equivalent Sets

Function Inverses

Function Composites   Injective Functions   Surjective Functions

Equivalence Relations   Functions

Relations   Natural Numbers

Ordered Pairs   Set Unions   Set Intersections

Unordered Pairs   Empty Set   Pair Intersections

Set Specification

Set Inclusion

Standardized Accounts

Definitions   Accounts

Deductions   Quantified Statements

Logical Statements

Statements

Identities   Sets

Names

Objects   Letters