Why

We often start with an undirected graph and want to talk about the graphs we obtain by only keeping the edges incident to particular vertices.

Definition

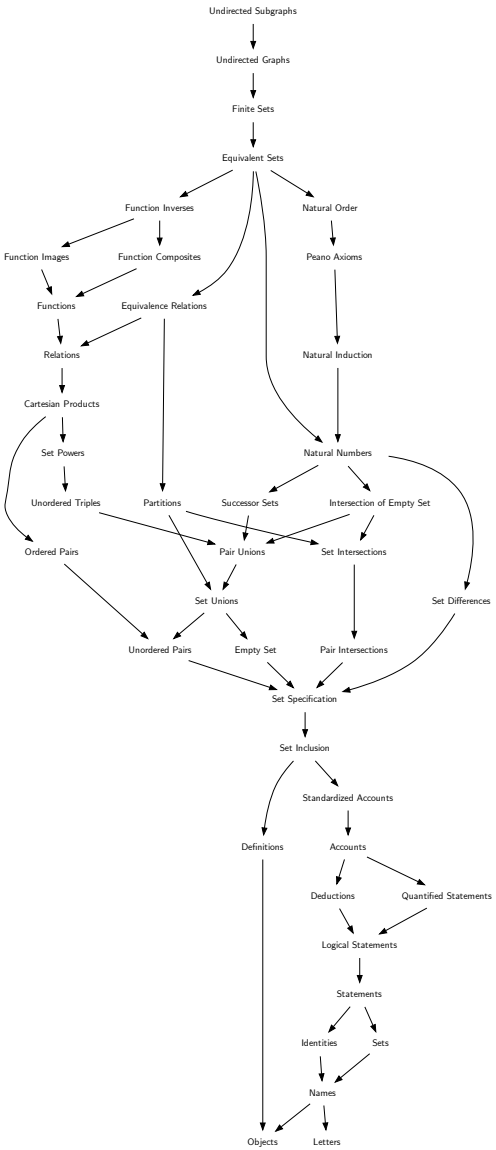
The *subgraph* of a graph corresponding to a subset of vertices is the undirected graph with those vertices and all edges between those vertices.

Notation

Let $G = (V, E)$ be an undirected graph. Let $W \subset V$. The subgraph corresponding to W is the undirected graph (W, F) where

$$F = \{\{v, w\} \in E \mid v, w \in W\}.$$

TODO: maybe delete; this abuses G, which is no longer an ordered pair, but becomes a function on subsets of V with a complicated codomain. We denote the subgraph of G corresponding to W by $G(W) = (W, E(W))$.


Undirected Subgraphs
Undirected Graphs
Finite Sets
Equivalent Sets
Function Inverses
Natural Order
Function Images
Function Composites
Peano Axioms
Functions
Equivalence Relations
Relations
Natural Induction
Cartesian Products
Set Powers
Natural Numbers
Unordered Triples
Partitions
Successor Sets
Intersection of Empty Set
Ordered Pairs
Pair Unions
Set Intersections
Set Unions
Set Differences
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