Why

We look at a particular subset of vertices and the edges involved between them.

Definition

The *subgraph* of an undirected graph (V, E) *induced by* a subset of vertices $W \subset V$ is the undirected graph with vertices W and all edges between vertices in W.

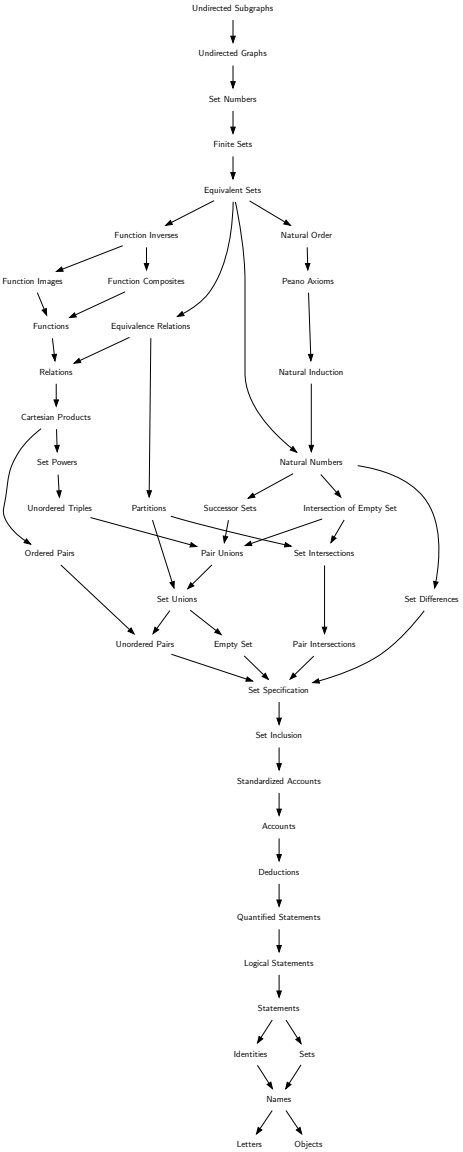
Notation

Let $G = (V, E)$ be an undirected graph. Let $W \subset V$.

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

The subgraph induced by W is the undirected graph (W, F).

Some authors denote the subgraph induced by W by $G(W)$ or $(W, E(W))$. We avoid this notation, as it abuses G, which is no longer an ordered pair, but (in our standard function notation) now indicates a function on subsets of V with a complicated codomain. Other authors occasionally refer to the "subgraph W", instead of "the subgraph $G(W)$". Again, we avoid this practice.


Undirected Subgraphs
Undirected Graphs
Set Numbers
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
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects