Why

Ancestry in a directed acyclic graph gives a partial order over the vertices.

Definition

Suppose (V, E) is a directed acyclic graph. Define the relation $\preceq$ by

$$s \preceq t \text{ if } s \text{ is an ancestor of } t \quad \text{for all } s, t \in V$$

Then $\preceq$ is a partial order. We call it the *ancestry partial order*.

Directed Acyclic Graph Ancestry Partial Order

Directed Acyclic Graphs

Directed Paths

Directed Graphs

Set Numbers

Finite Sets

Equivalent Sets

Natural Order   Function Inverses

Function Composites   Function Images

Equivalence Relations   Functions

Peano Axioms   Relations

Natural Induction   Ordered Pair Projections

Set Products

Natural Numbers   Set Powers

Intersection of Empty Set   Successor Sets   Unordered Triples

Pair Unions   Set Partitions   Ordered Pairs

Set Differences   Set Intersections   Set Unions

Pair Intersections   Empty Set   Unordered Pairs

Set Specification

Set Equality

Set Inclusion

Deductions

Quantified Statements

Logical Statements

Statements

Identities   Sets

Names

Letters   Objects