Why

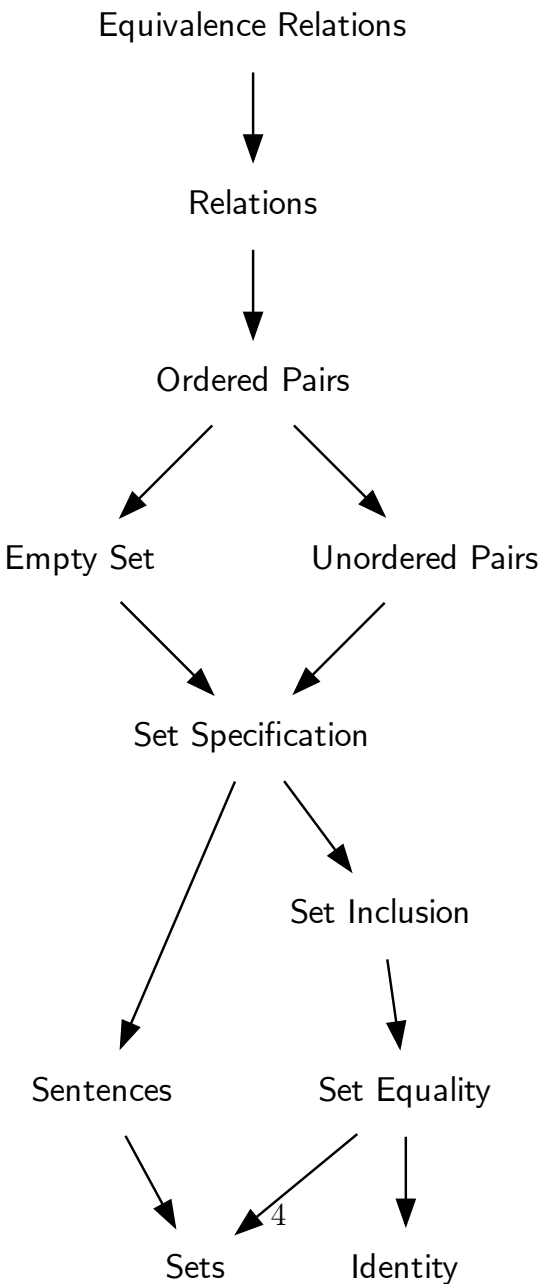
We want to handle at once all the objects of a set which are indistinguishable or equivalent in some aspect. We want to generalize the key properties of identity.

Definition

An *equivalence relation* is a reflexive, symmetric, and transitive relation.

Notation

If R is an equivalence relation on a set A, we use the symbol $\sim$. When alone, $\sim$ is read aloud as "sim," but we still read $a \sim b$ aloud as "a equivalent to b."


Equivalence Relations
Relations
Ordered Pairs
Empty Set
Unordered Pairs
Set Specification
Set Inclusion
Sentences
Set Equality
Sets
Identity