Why

We want to consider the elements of one set which are not contained in another set. Does such a set exist?

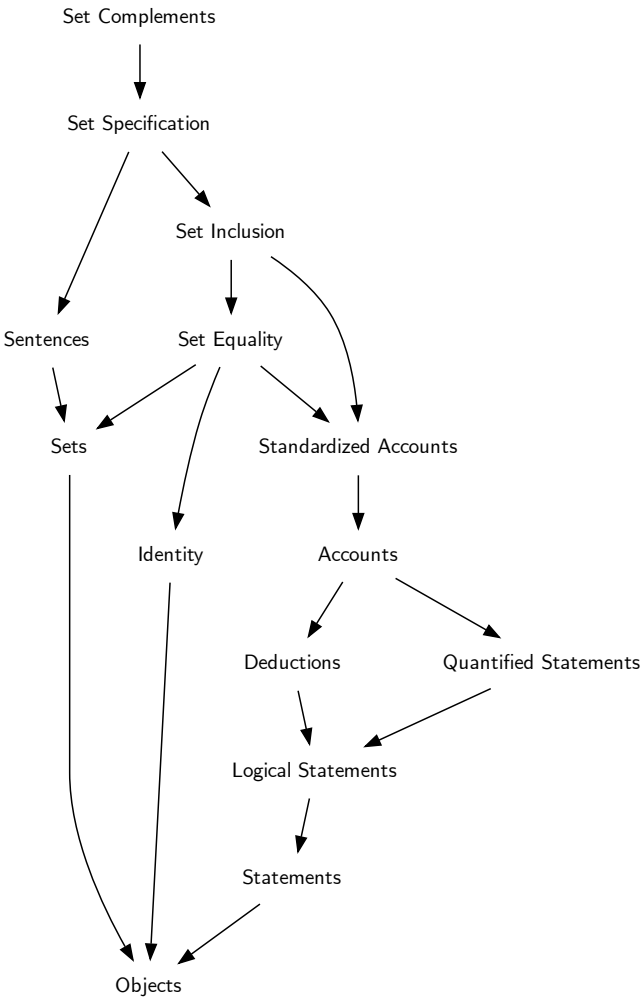
Definition

Yes: use the axiom of specification on the first set with the condition that the element not be in the second set. The axiom of extension guarantees uniqueness. And so we call this set the *relative complement* of the latter set in the first set. We also call it the *difference* between the former and the latter.

Notation

Let A and B be sets. We denote the difference of A with B by $A - B$. We express $A - B$ as

$$\{a \in A \mid x \notin B\}.$$


Set Complements
Set Specification
Set Inclusion
Sentences
Set Equality
Sets
Standardized Accounts
Identity
Accounts
Deductions
Quantified Statements
Logical Statements
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