



# Sentences

## 1 Why

We want to say things about objects and sets of objects.

## 2 Discussion

An *assertion* is a sequence of symbols which is assumed to be true.

Let  $a$  be an object. Let  $A$  be a set. A *membership assertion* is  $a \in A$ . Notice that  $\in$  is not symmetric.  $a \in A$  does not assert the same meaning as  $A \in a$ .

Let  $b$  be an object. An *identity assertion* is  $a = b$ . Notice that  $a = b$  asserts the same as  $b = a$ .

A *primitive sentence* is a belonging assertion or an equality assertion. The symbolism used includes three pieces: the names of the two objects and the symbols  $\in$  or  $=$ .

A *logical form* is one of several structures:

1. and
2. or (in the sense of “— or — or both”)

3. not
4. implies (in the sense of “if —, then —”)
5. if and only if
6. for some
7. for all

This list is redundant.

A *sentence* primitive sentence or a logical form with a primitive sentence or a logical form with sentences.