

F04 Set formalization exercise

Course in Semantics · Ling 531 / 731

University of Kansas

Key

1. Which of the following describes an abstracted set?

- It takes an entity and gives us the abstract versions of them so we can avoid dealing with them directly.
- It expresses a generalization that keeps us from having to list specific examples.
- It removes details or attributes of objects so we can focus on details of greater importance.

2. Find a map of Europe, and fill in the following sets to make them equivalent, given the set E of European countries. There may be multiple answers required.

$$(1) \{ x \in E \mid x \text{ borders Switzerland} \} = \{ \text{France, Germany, Liechtenstein, Austria, Italy} \}$$

$$(2) \{ y \in E \mid \text{The Rhine flows through or along } y \} = \{ \text{Germany, France, Switzerland, the Netherlands} \}$$

$$(3) \{ z \in E \mid z \text{ borders the Baltic Sea} \} =$$

$$\{ \text{Russia, Estonia, Latvia, Lithuania, Sweden, Finland, Denmark, Germany} \}$$

3. Assume for this problem that our domain D consists of the following sounds:

$$\{ e, h, \text{?}, \varepsilon, p, i, y, \text{æ}, t, k^h \}.$$

Given D, write the meaning of *vowel* in the following ways:

1. in denotation brackets $[[\textit{vowel}]]$
2. list the members of the set $\{ e, \varepsilon, i, y, \text{æ} \}$
3. abstracted set $\{ x \mid x \text{ is a vowel} \}$
note: any letter would work here, such as $\{ r \mid r \text{ is a vowel} \}$

4. Now, write the meaning of *consonant* in the same way.

1. in denotation brackets $[[\textit{consonant}]]$
2. list the members of the set $\{ h, \text{?}, p, t, k^h \}$
3. abstracted set $\{ x \mid x \text{ is a consonant} \}$