

F05 - Set relations exercise

Course in Semantics · Ling 531 / 731

University of Kansas

Key

1. Given the following sets, build the set prompted.

$$\begin{array}{l} A = \{ a, b, c, d, e \} \\ B = \{ a, c, e, g, i \} \\ C = \{ d, e, g \} \\ D = \{ f, g, i \} \end{array}$$

- $A \cap B$ $\{ a, c, e \}$
- $A - (C \cap A)$ $= A - \{ d, e \} = \{ a, b \}$
- $B \cup C$ a, c, d, e, g, i
- $A \cap D$ \emptyset
- $(A \cup B) - (C \cap D)$ $\{ a, b, c, d, e, g, i \} - \{ g \} = \{ a, b, c, d, e, i \}$

2. Express the following formally:

- A is a subset of B $A \subseteq B$
- x is a member of A $x \in A$
- The intersection of A and B is C $A \cap B = C$
- The union of A and B is C $A \cup B = C$
- The complement of A in B is C $B - A = C$
- The intersection of A and the empty set is A $A \cap \emptyset = A$

3. Given the following set relation, answer the questions (note, there are no typos)

- $A \cap B = A$
 - $C \cap \emptyset = A$
 - $D \cup A = E$
 - $F \cap B = \emptyset$
 - $F \cap D = E - C$
 - $D \not\subseteq F$
 - $F \cap E = F$
- $E - C = \underline{D}$
 - $B \subseteq \underline{A}$
 - $F \cup D = E - \underline{B}$