Exercises on sets and adjectives

*Linguist 130A/230A Section*

January 13, 2015

1 Sets

Describe the following sets in English:

1. \( \{ x : x \text{ is an integer and } x > 3 \text{ and } x < 6 \text{ and } \frac{x}{2} \text{ is an integer} \} \)

2. \( \{ x : x \text{ is an integer} \} \cap \{ x : x > 3 \} \cap \{ x : x < 6 \} \cap \{ x : \frac{x}{2} \text{ is an integer} \} \)

3. \( \{ y : y \text{ is the first name of a 21st century US president} \} \)

4. \( \{ z : z > 0 \text{ and } z < 10 \text{ and } z^2 \text{ is a prime number} \} \)

5. \( \{ v : v \text{ is a real number and Barack Obama is the president of the US} \} \).

6. \( \emptyset \left( \{ \ldots \} \right) \)
True or False?

1. \( \{ x : x \text{ is a student in Ling130a} \} \cap \{ w : w \text{ watched the Golden Globes} \} \neq \emptyset \)

2. \( \{ x : x \text{ is a student or instructor in Ling130a}\} \cap \{ v : v \text{ speaks 2 languages fluently} \} = \emptyset \)

3. For any set \( S, \emptyset \subseteq S \). Explain your answer.

Let \( A \) and \( B \) be sets:

1. Which of the following tells us more about the relationship between \( A \) and \( B \)? Explain.
   (a) \( A \subset B \)
   (b) \( A \subseteq B \)

2. Suppose \( A - B = \emptyset \). What can you say about the following? Explain.
   (a) \( A \cup B \)
   (b) \( A \cap B \)
   (c) \( (A \cup B) \cap (A \cap B) \)
   (d) \( B - A \)
2 Adjectives

1. True or False? All intersective adjectives are also subsective adjectives. Explain.

2. True or False? All privative adjectives are non-subsective adjectives. Explain.

3. Classify the adjective *tall* as intersective, subsective, non-subsective, privative, or some combination.