

CSE 321: Discrete Structures  
Assignment #2  
October 10, 2001  
Due: Wednesday, October 17

**Reading Assignment:** Read Sections 2.3 - 2.5, 3.1, and 3.2.

**Problems:**

1. Section 1.3, exercise 12, parts a, c, d, h.
2. Section 1.3, exercise 24, a, b, d.
3. Which of the following statements are true?
  - $\{x\} \subseteq \{x\}$
  - $\{x\} \in \{x, \{x\}\}$
  - $\{x\} \in \{x\}$
  - $\{x, \{x\}\} \subseteq \mathcal{P}(\{x\})$
4. Prove the following statements:
  - $(A \cup B = B) \rightarrow (A \subseteq B)$
  - $(A \subseteq B) \leftrightarrow (\bar{B} \subseteq \bar{A})$
5. Suppose  $A$ ,  $B$ , and  $C$  are subsets of some universal set  $U$ . Find a way to describe the set  $\overline{A \cap (B - C)} \cap A$  without using the set complement.
6. Section 1.6, exercise 6, parts a, f, g and h.
7. Section 1.6, exercise 12.
8. **Extra Credit:** Fuzzy logic and fuzzy sets.
  - Section 1.1, exercise 32
  - Section 1.5, exercise 50