

Problem Set 3 Foundations Due 2/8/2005

Each problem is worth 5 points. Clear and complete justification is required for full credit. You are welcome to discuss these problems with anyone and everyone, but must write up your own final submission without reference to any sources other than the textbook and instructor.

Prove or give counterexamples for the following propositions, where A, B, and C represent arbitrary sets.

1. If $A \subseteq B$ then $C \setminus B \subseteq C \setminus A$.

2. $A \setminus (B \setminus C) = (A \setminus B) \setminus C$.

3. $A \subseteq B \Rightarrow A - B = \emptyset$.

4. $A \setminus B = \emptyset \Rightarrow A \cup B = B$.