Problem Set 7 Foundations Due 4/10/2006

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.

1. If R and S are both transitive relations on a set A, then $R \cap S$ is also a transitive relation on A.

2. If R is an asymmetric relation on a set A, then it is also an antisymmetric relation on A.

3. If R is an antisymmetric relation on a set A, then it is also an asymmetric relation on A.

4. Let A be the power set of $\{a, b, c\}$. Sketch the directed graph representing the relation $\subseteq$ on A.