Problem Set 8 Foundations Due 4/2/2012

Four of these problems will be graded, with each problem 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. Submissions must be on clean paper with no ragged edges.

1. If A and B are disjoint denumerable sets, then $A \cup B$ is denumerable.

2. If A is a countable set, and $a \in A$, then $A - \{a\}$ is countable.

3. The union of a finite collection of finite sets is finite.

4. The union of any collection of finite sets is finite.

5. The union of a finite collection of countable sets is countable.

6. The union of a countable collection of countable sets is countable.

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