Homework 2

CS 3233 – Fall 2003 assigned September 4, 2003
Tom Bylander, Instructor due September 11, 2003

1. (25 pts.) Assume that x and y are real numbers. Use a direct proof to prove that $x = 1$ or $y = 1$ implies $x + y > xy$.

2. (25 pts.) Assume that x and y are real numbers. Use an indirect proof or a proof by contradiction to prove that $x + y \geq xy$ implies $x \geq 0$ or $y \geq 0$.

3. (10 pts.) Find the power set of $\{2, 3, 5\}$.

4. (10 pts.) Find the Cartesian product of $\{-1, 1\} \times \{-1, 0, 1\}$.

5. (10 pts.) Show 1.7.14.e using a Venn diagram.

6. (10 pts.) Do Exercise 1.8.12.

7. (10 pts.) Do Exercise 1.8.14.