Name: _____
MATH55 Section ___
Homework 7
Due Tue. 2/19

**20.7** Prove by contradiction: If the sum of two primes is prime, then one of the primes must be 2. You may assume that every integer is either even or odd, but never both.

**20.13** Let $A$ and $B$ be sets. Prove by contradiction that $(A - B) \cap (B - A) = \emptyset$.

**21.3** Prove by the techniques of this section that $n < 2^n$ for all $n \in N$.

**21.4** Prove by the techniques of this section that $n! \leq n^n$ for all positive integers $n$.