**HW4, due Friday October 14**
**Math 403, Fall 2011**
**Patrick Brosnan, Instructor**

**Reading Assignment**

Please read Chapter 2 of Herstein's book through section 2.11.

**Writing Assignement** (20 points each)

**Problem 1.** Herstein page 35, problem 11.

**Problem 2.** Suppose $G$ is a finite abelian group and $d$ is a positive integer dividing $o(G)$. Show that $G$ has a subgroup of order $d$.

**Problem 3.** Let $n$ be a positive integer. Show that the order of $[m]$ in the group $\mathbf{Z}/n$ is $n/(m, n)$.

**Problem 4.** Herstin page 65, problem 4.

**Problem 5.** Herstein page 65, problem 5.