Homework 5

due Wednesday February 15 in class

This is a short homework! The midterm will be held February 15 in class. I posted a practice midterm exam; the solution will be discussed in the discussion session on February 14.

1. Biggs 20.7 # 3 page 272
Show that if H and K are subgroups of G then so is $H \cap K$.

2. Biggs 20.10 # 13 page 280
Let H and K be subgroups of a finite group G such that $\gcd(|H|, |K|) = 1$. Show that $|H \cap K| = 1$.

3. Biggs 20.10 # 5 page 280
Show that if H is a subgroup of index 2 in a group G then the left coset gH is the same as the right coset Hg for all $g \in G$.