Homework 6
due November 13, 2001

(1) Dummit, Foote Section 5.2 Exercise 7 (page 168)
(2) Dummit, Foote Section 5.4 Exercise 11 (page 176)
(3) Dummit, Foote Section 5.4 Exercise 15 (page 176)
(4) If a group $G$ is the direct product of its subgroups $H, K$, then $H \cong G/K$ and $K \cong G/H$.
(5) Every group of order 12,28,56, and 200 must contain a normal subgroup and hence is not simple.
(6) Let $G$ be a group of odd order and $H$ a normal subgroup of $G$ with 3 elements. Show that $H$ is central.
   For which primes other than 3 does your argument work?