Math 502 Problem Set #3 Due week of Sept. 25, 2006, in lab.

Read Artin, Chapter 2, sections 1-4.

From Artin, do these problems:

Section 2.1 (p.69): 10, 11.
Section 2.2 (pp.70-71): 3, 17.
Section 2.3 (pp.71-72): 1, 2, 5, 10.
Section 2.4 (pp.72-73): 1, 4, 7.

Also do the following problem:

Define the *center* of a group G to be $Z = \{g \in G \mid (\forall h \in G)\, gh = hg\}$.
a) Is Z a subgroup? Is it normal?
b) Find the center of $C_n, D_n, S_n, \mathbb{Z}, SL_2$.