McGill University
Math 370A: Algebra III
Assignment 4: due Friday, October 31 , 1997

1. Show that $\mathrm{Aut}(C_2 \times C_4) \cong D_4$.
2. Show that the groups $G_i =< x, y : x^8, y^2, yxy^{-1}x^{-i} >$ with $i = 1, 3, 5, 7$ are non-isomorphic groups of order 16.
3. Text: p. 70, #2
4. Text: p. 78, #2.
5. Text: p. 78, #4.
6. Text: p. 78, #5.
7. Text: p. 78, #6.
8. Text: p. 82, #2.
9. Find, up to isomorphism, all groups of order 18.
10. If G is the group of symmetries of a cube, show that $G/C(G) \cong S_4$.