# MODERN ALGEBRA 1: HOMEWORK 4

(1) Chapter 2: 5.1

(2) Chapter 2: 6.2

(3) Chapter 2: 6.7

(4) Chapter 2: 9.7

(5) Consider the function $\phi\colon G \to G$ defined by $\phi(g) = g^{-1}$. Show that $\phi$ is a homomorphism if and only if $G$ is abelian.