Homework Due February 1

Chapter 3, page 67: Problems 1, 4 (Hint: Use the B) below), 8, 10.

A) Show that if \( p \) is a prime number, then the order of any non-zero element of the additive group \( \mathbb{Z}_p \) is \( p \).

B) Show by induction on \( n \): If \( G \) is a group and \( g \in G \), then \( (g^n)^{-1} = (g^{-1})^n \).

Hand in solutions to problems A, B and 4.