Homework 9

Due Wednesday, July 22

1. Let $G = \mathbb{Z}_{15}$ and $H = \mathbb{Z}_5$. If we write $f : G \to H$ as a matrix, as in class/textbook examples, find $K = \ker(f)$, write the elements of G/K, and conclude that $H \cong G/K$.
2. Chapter 16, Exercise A3 (p. 160) (Already shown that f is a homomorphism)
3. Chapter 16, Exercise A4 (p. 161) (Write the elements of G/K, no need to construct the table, and assume that f is a homomorphism; see May 28 notes for P_D group)
4. Chapter 16, Exercise A5 (p. 161) (No need to show that f is a homomorphism)
5. Chapter 16, Exercise B (p. 161)
6. Chapter 16, Exercise C1 (p. 161) (Parts C2 and C3 follow immediately)
7. Chapter 16, Exercise F (p. 162)
8. Chapter 16, Exercise I (p. 163)