Math 248, Methods of Proof, Fall 2013
Homework 14, due Friday, 11/22

1. Do problems: 4.1.6 (except show the three properties I mentioned in class, not the two from the text), 4.1.10.

2. Which of the following are functions? Justify.
   (a) $f : \mathbb{Z}_3 \to \mathbb{Z}_6$ given by $f([x]_3) = [x]_6$.
   (b) $f : \mathbb{Z}_6 \to \mathbb{Z}_6$ given by $f([x]_6) = [x + 1]_6$.
   (c) $f : \mathbb{Z}_3 \to \mathbb{Z}_6$ given by $f([x]_3) = [2x]_6$.
   (d) $f : \mathbb{Z}_4 \to \mathbb{Z}_6$ given by $f([x]_4) = [2x + 1]_6$.
   (e) $f : \mathbb{Z}_3 \to \mathbb{Z}_4$ given by $f([x]_3) = [x]_4$.
   (f) $f : \mathbb{Z}_4 \to \mathbb{Z}_2$ given by $f([x]_4) = [3x]_2$.

3. Do problems: 4.2.4, 4.2.6, 4.2.7, 4.2.10, 4.2.13, 4.2.14.

4. Do problems: 4.2.16

The grader will 4.1.10 and number 2 above, so you should write these up more carefully.