Problem Set 7
Due Friday, November 16.

Algebra

Math 110A, Fall Quarter 2012

1. Do problems 4.5.1 (b), 4.5.2, 4.5.5, 4.5.6, 4.5.16 in the textbook.
2. Let $n > 0$ be an integer. Show that the map

$$f \mapsto \overline{f} \colon \mathbb{Z}[X] \to \mathbb{Z}_n[X]$$

given by

$$\overline{f} := \sum_{i=0}^{d} [a_i] X^i \qquad \text{for } f = \sum_{i=0}^{d} a_i X^i \in \mathbb{Z}[X] \ (a_i \in \mathbb{Z})$$

is a homomorphism.