

**Math 128A, problem set 11**  
**Outline due: Wed Dec 02**  
**Due: Mon Dec 07**  
**Last revision due: TBA**

**Problems to be done, but not turned in:** (Ch. 13) 1–69 odd; (Ch. 14) 1–71 odd.

**Problems to be turned in:**

1. (Ch. 14) 10.
2. (Ch. 14) 14.
3. Let  $R = \mathbf{Z} \oplus \mathbf{Z}$ . Find a subring of  $R$  that is not an ideal of  $R$ . Prove your answer, both the subring part and the “not an ideal” part. (Suggestion: For  $(a, b) \in R$ , what is the smallest subring containing  $(a, b)$ , and what is the smallest ideal containing  $(a, b)$ ?)
4. (Ch. 14) 26.