

**MA 717**  
**M. Kon**

**PROBLEM SET 13**  
**Due Thursday April 26**

**Lectures 22, 23**

1. Reed and Simon, Problem 18 in Chapter VI.
2. Write out the proof of Theorem VI.9 so that the steps are clear.
3. Write out the proof of Theorem VII.1 so the steps are clear. Note that the definition of a homomorphism  $\phi$  should include linearity. Part (e) follows from the result of VII.8 , which you can assume (this problem is assigned later).
4. Show that Theorem VII.2 follows from Theorem VII.1.
5. Problem VII.8 in Reed and Simon. Note that  $\text{Ran}(f) = f(\sigma(A))$ . In the statement of (b)  $\text{Ran} f(A)$  should be  $\text{Ran } f$ .