MA 717
M. Kon

PROBLEM SET 5
Due Thurs. Feb. 22

Note that Tuesday 2/20 is a Monday schedule. However, we will try to have the optional problem session at the usual time in my office, at 3 pm.

Starred problems are optional

Lectures 8, 9

1. Reed and Simon, problem III.1

2. Reed and Simon, problem III.2

3. R-S, problem III.3

4. Completeness of L^p : Prove the Riesz-Fisher theorem for L^p spaces:
Riesz-Fisher Theorem: If $1 \leq p \leq \infty$ and X is a measure space, then $L^p(X)$ is complete.

5. R-S, problem III.5 ($C_\infty(\mathbb{R})$ denotes continuous functions vanishing at ∞. $\kappa(\mathbb{R})$ denotes continuous functions with compact support. Note the norms we are using here are supremum norms for both spaces.)

6*. R-S, problem III.11