Functional Analysis

Homework 1

due February 11, 2009

1. Folland, p. 118 no. 4
2. Folland, p. 118 no. 10
3. Folland, p. 123 no. 16
4. Let X be a topological space. Consider the space $B(X)$ of bounded functions $X \to \mathbb{C}$ endowed with the uniform norm

$$\|f\|_u = \sup_{x \in X} |f(x)| .$$

Prove that $B(X)$ is complete with respect to the uniform metric $\rho(f, g) = \|f - g\|_u$.