Homework 9

Due 16 April 2010 in Recitation Hour

Note that 5 of the following questions chosen by me will be graded.

1. Let \( B([0,1]) \) be the set of all bounded functions from the interval \([0, 1]\) to real numbers. Define the following metric on \( B([0,1]) \).

\[
d_{\text{sup}}(f, g) = \sup_{x \in [0,1]} |f(x) - g(x)|
\]

Show that \( d_{\text{sup}} \) is a metric on \( B([0,1]) \).

2. From the book: Page 176 Question 2, 4, 8, 13, 15.

3. From the book: Page 192 Question 2, 3.