Partial Differential Equations

Homework 1

due February 19, 2014

1. Write out a complete, self-contained proof of the weak Leibniz formula. (The proof is basically given in Evans, but some details regarding the indexing of the sums and the addition theorem for the binomial coefficients for multi-indices are missing.)

2. Evans, p. 290, Problem 2

3. Evans, p. 290, Problem 7

4. *Optional problem, will require subtle details from Real Analysis:*
   Evans, p. 290, Problem 5