

**MA633 Partial Differential Equations II**

**Spring 2012**

**Problem Set 1**

**January 18, 2012**

**DUE: Monday, 30 January 2012**

- (1) Prove parts (ii) and (iii) of Theorem 1 on page 261 in Evans.
- (2) Problem 4, page 306 of Evans, on  $W^{1,p}((0,1))$ .
- (3) Problems 5-6, page 206 of Evans, on the existence of smooth characteristic functions and partitions of unity.