

# **MAT 1060: Partial Differential Equations I**

## **Assignment 5, November 4 2009**

Read Section 3.4 and Sections 5.1-5.3. Please hand in to Ehsan on Wednesday, November 18:

- Chapter 3 (p. 162): Problems 7, 10, 13, 14.
- Chapter 5 (p. 289): Problem 6.
- Additional problem: Consider the function  $f(x) = |x|^{-\alpha}$  on the unit ball  $B(0, 1) \subset \mathbb{R}^n$ . For what values of  $\alpha$ ,  $n$ , and  $p$  is  $f \in W^{1,p}$ ?