

**Real Analysis II, Prof. Gutiérrez,  $L^p$ -spaces**  
**Week of February 19, 2009**

References are from Wheeden and Zygmund's book.

1. Let  $c < a < b < d$ . Show that if  $f$  is  $C^1[a, b]$  with  $f(a) = f(b) = 0$  and we define  $g(x) = f(x)$  for  $x \in [a, b]$  and  $g(x) = 0$  for  $x \in [c, d] \setminus [a, b]$ , then  $g$  is absolutely continuous in  $[c, d]$ .
2. Problems 5 and 8, p. 143.
3. Problems 11, 12, 13, and 16, p. 144.