MA676
MWF 1-1:50pm
CB 345
Spring 2011

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Exercises

1. Is the argument given in Example 2, page 11, correct?
2. Can you write $\mathbf{R} = \cup_{\alpha \in A} E_\alpha$ with $m_*(E_\alpha) = 0$ for all α?
3. If F is a compact set, is $m_*(F) < \infty$?

Problems

Due Monday, 31 January 2011

1. Let $\delta_r(x) = rx$ for $r > 0$. Give a careful proof that for a set $E \subset \mathbf{R}^d$, $m_*(\delta_r(E)) = r^d m_*(E)$.

   Show that a set E is measurable if and only if $\delta_r(E)$ is measurable.

2. Exercises 6, page 39 of Stein.

January 20, 2011