Math 413 Fall 2005
Due on 10/25
Unless otherwise stated all assignments are from Strichartz’s book (The Way of Analysis)

Assignment 7
1. Page 138–139, Problems 1, 4, 7, 11, 12, 15.

2. Let $f$ be a non zero function defined on continuous from $\mathbb{R}$ into itself and such that

$$f(x + y) = f(x) + f(y)$$

for all rational numbers $x$ and $y$. Show that $f(x) = ax$ for all $x \in \mathbb{R}$, and some constant $a$ to be specified. (Hint: What is $f(p/q)$ for $p$ and $q$ are integers with $q \neq 0$).