**Math 525a - Fall 17 - Homework 7**

1. Problem 9 in section 3.1

2. Suppose that $\rho > 0$ and $f$ is Riemann integrable on $[a, b]$ with $f(x) \geq \rho$ for all $x \in [a, b]$. Prove that $1/f$ is Riemann integrable on $[a, b]$.

3. Problem 6 in section 3.3.

4. If $|f|$ is Riemann integrable on $[a, b]$, does it follow that $f$ is Riemann integrable on $[a, b]$. You should either prove that it does or give counterexample.

5. Suppose that $f$ is continuous on $[a, b]$, $f$ is non-negative on $[a, b]$ and its Riemann integral is zero, i.e., $\int_a^b f(x)\,dx = 0$. Prove that $f(x) = 0$ for all $x \in [a, b]$.