

Homework 6 additional problems.

1. Let  $f : \mathbb{R} \rightarrow [0, \infty)$  be measurable with  $\int f(x) dx < \infty$  and uniformly continuous. Prove that  $\lim_{x \rightarrow \infty} f(x) = 0$ . Give an example of a continuous function with finite integral for which the conclusion fails.