

Math 10860, Honors Calculus 2

Quiz 2, Thursday January 30

Name:

1. Let A be a non-empty set, bounded both above and below. Let $M = \sup A$ and $m = \inf A$. Let $-A = \{-x : x \in A\}$. What are $\sup(-A)$ and $\inf(-A)$? Justify *one* of your two claims carefully.

2. Suppose $f : [a, b] \rightarrow \mathbb{R}$ is bounded. Let P be a partition of $[a, b]$. Prove *one* of the following two claims (they are both true, and have almost identical proofs. It might be helpful to use part 1):

(a) $U(-f, P) = -L(f, P)$

(b) $L(-f, P) = -U(f, P)$.

3. Suppose f as in part 2 is integrable. Use the result of part 2 to show that $-f$ is also integrable.