Mathematical Analysis I

Quiz on Chapter: *Continuity*

Time allowed: 1 hour

December 31, 2025

Questions:

1. Let f be a real uniformly continuous function on the bounded set $E \subset \mathbb{R}^1$. Prove that f is bounded on E.

2. Call a mapping of X into Y *open* if $f(V)$ is an open set in Y whenever V is an open set in X.

   Prove that every continuous open mapping of $\mathbb{R}$ into $\mathbb{R}$ is monotonic.