Problems 3.1 – 3.3 in Milne’s notes, page 45

Additional problem:
Show that the field $\mathbb{R}$ of real numbers has no automorphisms other than the identity. (Hint: first show that any automorphism necessarily fixes $\mathbb{Q} \subset \mathbb{R}$. Then show that any automorphism of $\mathbb{R}$ is necessarily continuous as a function $\mathbb{R} \to \mathbb{R}$.)