MAT402 HW2

These are practice problems.

Problem 1. Prove that open subsets (with the induced smooth structure) of a smooth manifold are submanifolds.

Problem 2. Show that $\mathbb{Q} \subset \mathbb{R}$ does not admit a submanifold structure.

Problem 3. Let M be a non-empty compact m-manifold. Show that there is no immersion $f : M \to \mathbb{R}^m$.