

Manifolds, V2018

Problem sheet 6, to be discussed on Monday the 5th March 2018.

Problem 1. Tu, Problem 13.3.

Problem 2. Let M be a smooth manifold and $S \subset M$ a submanifold which is closed as a subset of M . Prove that every smooth function $S \rightarrow \mathbb{R}$ extends to a smooth function $M \rightarrow \mathbb{R}$. Show by means of a counterexample that the same need not hold if S is not closed.