

Math 8062 Homework 11

Not due (but the problems are useful)

1. Do problem 17–1 on page 465 of Lee.
2. Do problem 17–12 page 466 of Lee. *Hint:* Use properties of the degree of F .
3. Let $v \in \mathbb{R}^n$ be the unit vector $(1, 0, \dots, 0)$. Compute the de Rham cohomology groups of $\mathbb{R}^n \setminus \{-v, v\}$. *Hint:* Argue by induction on dimension, starting with $n = 1$, and use the Mayer–Vietoris sequence. It is important to note that in the Mayer–Vietoris sequence for cohomology, all the arrows run in the opposite direction.
4. Do problem 18–1 on page 487 of Lee.