HOMEWORK 7 − 2022

Exercise 1. Let $f : M \to N$ be a map between two oriented compact manifolds of dimension n with fundamental classes $[M]$ and $[N]$, respectively. We say that f has degree d if

$$f_*([M]) = d[N].$$

Prove that for every oriented compact manifold M of dimension n there is a map $f : M \to S^n$ of degree 1. (Hint: Find a geometric prescription and use the definition of the fundamental class via local orientations.)