

MATH GU4053: INTRODUCTION TO ALGEBRAIC TOPOLOGY

Homework 5

Due: 02/27/20 beginning of class

- (1) Hatcher 2.1.3
- (2) Hatcher 2.1.4
- (3) Hatcher 2.1.5
- (4) Hatcher 2.1.7
- (5) Hatcher 2.1.8

6. Find a Δ -complex that is homotopy equivalent to the CW complex

$$S^1 \cup D^2 / \{x \sim \varphi(x), x \in \partial D^2\}$$

where $\varphi : \partial D^2 = S^1 \rightarrow S^1$ is the map that winds n times around S^1 . Compute the simplicial homology of this space.