Math 651 - Topology II Homework Supplement Spring 2018

- 1. Let *X* be obtained from S^2 by identifying two points (for example, the north and south poles). Find $H_*(X)$.
- 2. If k < n, compute $H_*(\mathbb{RP}^n/\mathbb{RP}^k)$. (Start with some examples, like $\mathbb{RP}^5/\mathbb{RP}^2$ and $\mathbb{RP}^5/\mathbb{RP}^3$.)
- 3. Let *X* be obtained from S^1 by attaching two 2-cells via maps of degree 2 and 3, respectively. Compute $H_*(X)$.
- 4. Find $H_*(S^1 \times (S^1 \vee S^1))$.