

# 547 - Spring 2018 - HW7

March 17, 2018

1. Compute the homology of  $\mathbb{C}P^n$  with a single point removed.
2. Recall that  $\mathbb{R}P^n$  is covered by  $n + 1$  standard open sets  $U_i$ ,  $0 \leq i \leq n$ , each of which is isomorphic to  $\mathbb{R}^n$ . We have that  $U_i$  consists of lines through the origin containing points  $(x_0, \dots, x_n)$  where  $x_i \neq 0$ . Compute the cohomology of the union of  $U_0$  and  $U_1$  inside  $\mathbb{R}P^3$ .
3. Hatcher, Exercise 2.2.2.
4. Hatcher, Exercise 2.2.3.
5. Hatcher, Exercise 2.2.4.
6. Hatcher, Exercise 2.2.12.
7. Hatcher, Exercise 2.2.23.
8. Hatcher, Exercise 3.1.9.
9. Hatcher, Exercise 3.2.1.
10. Hatcher, Exercise 3.2.3.
11. Hatcher, Exercise 3.2.11.
12. Hatcher, Exercise 3.2.15.