

Math 540: Exercises for Week 9

Reading: Hatcher Section 2.2

1. Hatcher 2.1.26 [Example of $A \subseteq X$ such that (X, A) is not a good pair].
2. Hatcher 2.2.1
3. Hatcher 2.2.2
4. Hatcher 2.2.9
5. Hatcher 2.2.11
6. Hatcher 2.2.12 [Remark: This is an example of a map which induces the trivial map on all *homotopy* groups but is not nulhomotopic.]
7. Hatcher 2.2.22 and 2.2.23. [These are really two parts of the same problem.]
8. Hatcher 2.2.24 [Also, complete the argument that these two graphs are nonplanar if you haven't seen it before.]