

## Algebraic Topology (Fall 2023): Homework 5

- You **must email your submission** as a **PDF file** to kbala@wsu.edu. You are welcome to write answers by hand, and scan or take photos of the writings. Put all the images on a PDF file, though.
- Your file name should identify you **in the following manner**. If you are Steamy Ray Vaughan, you should name your submission SteamyVaughan\_Hw5.pdf (and **NOT** “Steamy Vaughan\*.pdf” or Steamyvaughan\_\*.pdf or ...). **Please avoid white spaces in the file name :-).**
- **Begin the SUBJECT of your email submission with the same FirstnameLastname, expression, e.g., “SteamyVaughan Hw5 submission”.**
- The book of Munkres (Elements of Algebraic Topology) is denoted [M].
- **This homework is due by 11:59 PM on Thursday, October 26.**

1. (30) [M] Problem 3, Page 40.  
If you created a different (smaller) simplicial complex for Problem 2 from the same page (seen in Homework 4), you could use it here and assign a different labeling for its vertices.
2. (25) [M] Problem 7, Page 41.
3. (20) [M] Problem 1, Page 50.
4. (25) [M] Problem 3, Page 51.
5. (25) [M] Problem 5, Page 51.