A. Section 57 Exercise 1. (This is a short exercise. In the future, if you're at a party, and someone asks you what topology is, then you have eight seconds to respond, before their attention drifts. Consider deploying this quasi-fact of meteorology. And let me know if you see Yunan at the party.)

B. Section 57 Exercise 2, which is about a surjective map from the sphere to itself. (This is a medium-length exercise.)

Read the statement of Urysohn's Lemma (Theorem 33.1 in Munkres). This is a classic result of point-set topology, which is used to prove some nice theorems. The proof of the lemma is revered for its cleverness. I don't expect you to read the proof, but you will need to use the lemma itself in the following problem.

C. Suppose that $\mathbb{S}^2$ is covered by closed sets A, B, C. Prove that at least one of these closed sets contains an antipodal pair of points $x, -x$. (This is a medium-long exercise. Hint: Treat A and B similarly but C differently.)