This assignment focuses on the Van Kampen theorem as well as the theory of covering spaces.

Exercise 1. Hatcher Section 1.2 Exercise 3, 4, 6, 7, 14.

Also take a look at Exercise 22, it is very interesting.

Exercise 2. Hatcher Section 1.3 Exercise 4, 9, 10, 12, 14

Take a look at exercise 7, 27
For these topics, it is easy to come up with your own questions: test your own understanding of these topological concepts.