

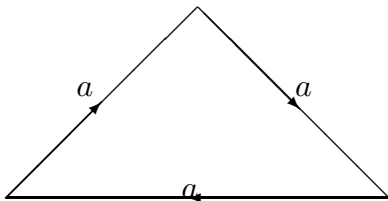
UNIVERSITY OF TORONTO

MAT 1300Y

Problem Set III

Due: Monday, Jan. 12, 2007

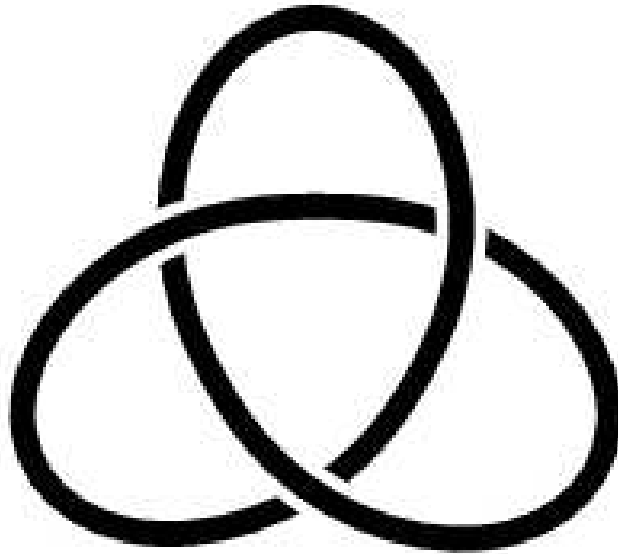
1. Hatcher (page 79; #7)
2. Hatcher (page 80; #13)
3. Hatcher (page 80; #14)
4. Hatcher (page 81; #21)
5. Let X denote the “dunce cap” space formed by taking a triangle (including interior) and identifying boundary sides as shown in the following picture.



Compute $\pi_1(X)$

6. Hatcher (page 53; #4).
7. Hatcher (page 53; #11)
8. Read the algorithm in Hatcher (page 55; #22) describing how to compute the fundamental group of a knot complement when the knot is described by the Wirtinger presentation.

Below is a picture of a trefoil knot:



Apply the method to compute π_1 (trefoil knot).
You do not have to answer Hatcher p. 55 #22.