



Department of Mathematics University of California Davis

**Final (Mock) Examination
Algebraic Topology (A Fake Course).
MAT 215 A, Fall 2005
Instructor: Carlos Barrera-Rodríguez**

Name.....

I.D. Number.....

No books allowed.

Write your ideas for each problem.

Complete calculations are not expected.

Question	Points	Score
1	25	
2	25	
3	25	
4	25	
Total	100	

NAME.....

1. [25 pts.] Can you use the Van Kampen theorem to compute the fundamental group of the Hawaiian earring?. What if you replace S^1 by S^2 ?

NAME.....

2. [25 pts.] Find all 2-fold coverings of the figure 8.

NAME.....

- 3.** [25 pts.] Show that the free group on two generators contains the free group on n generators with finite index.

NAME.....

4. [25 pts.] Define Chern classes and compute them for some examples like \mathbf{CP}^n .