

Homework 5, due Wed.Oct.3

Exercises 3.13, 3.15, 3.16, 3.17. 3.22,

Sixth Exercise: Show that a surface is not orientable if it contains a region diffeomorphic to a Mobius band. The converse is also true that a nonorientable surface contains a Mobius band. Give a sketch of some ideas to prove the converse. The details of the complete proof are somewhat involved. (Hint: discuss how a unit normal vector can be extended continuously along a simple curve. )