

Course 425 2003-04

S h e e t 4

Due: after the lecture next Thursday

Denote by S^n the n -dimensional sphere.

Exercise 1

Show that S^1 cannot be immersed into \mathbb{R} .

Exercise 2

Show that $S^1 \times S^2$ can be embedded into \mathbb{R}^4

Exercise 3

Show that every n -manifold has a compact submanifold of dimension m whenever $m < n$. Does the same statement hold for $m = n$?