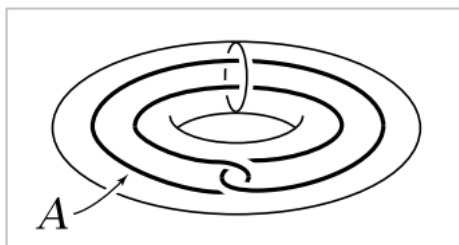# 2019 第四季度习题集

王海阳

January 2, 2020

Contents

1 Hatcher problems

Problem 1 *(pg 39 problem 16.(c): Unsolved).* $X = S^1 \times D^2.$, A *is the circle in the following graph,
Prove that there is no retract form X to A.*

Problem 2 *(pg 39 problem 16.(d): Unsolved).* $X = D^2 \vee D^2$, $A = S^1 \vee S^1$. 证明没有 X 到 A 的 *retract*

Problem 3