

Prof. Dr. Elmar Vogt
Sebastian Meinert

Free Groups and Graphs

Winter 2012/2013

Homework 14

Due: February 4, 2013

Problem 1

Denote by $ROut_n$ the *reduced* Outer space in rank n .

- (i) Compute the dimension of $ROut_n$ as a simplicial complex with missing faces by computing the dimension of a maximal dimensional simplex.
- (ii) Find a graph that spans a maximal dimensional simplex of $ROut_n$.
- (iii) Are all graphs whose corresponding simplices are maximal dimensional homeomorphic to each other?

Problem 2

Show that in $ROut_2$ every open edge is a face of exactly two open 2-simplices.