Final Project

Goal: The goal of this project is to demonstrate both your ability to teach yourself advanced mathematics and your ability to communicate the motivation and high-level technical methods to peers.

Format: The project consists of two parts:

(1) A short paper (approx 5-6 pages) describing a specific infinite, finitely generated group (everyone but Sam) or type of group (Sam) and its algebraic and geometric properties.

(2) A short (approx 5 minute) recorded lecture, to be shared with your classmates, describing the group and one or two of its geometric properties.

Requirements:

(1) The project must rely mostly on one or both of the course texts.

(2) The paper must reference two research papers on the topic. You need to have read the papers to get a sense of their methods, but you do not need to understand all (or even most) of the papers.

(3) You must cite all sources you rely on, whether or not you explicitly quote from them. You should use in-text references to a bibliography at the end.

(4) You should include figures (which may be hand-drawn) to illustrate your points.

(5) The paper should be properly typed in LaTeX, including with a proper bibliography and all.

(6) The paper should clearly explain the definitions, provide some illustrative examples, state some theorems, and in **very few** sentences summarize the general method of proof of the theorems.

(7) The paper should conclude with 2 or 3 "digging deeper" questions for further study.

(8) The recorded lecture should use either pre-prepared slides or live-writing on a tablet computer. It should answer the question, "What was your project about and what makes it interesting?"