Math 341: Algebra III: Groups

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Class days: M, W, F                  Class times: 15.30-16.20
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Overview

Groups are possibly \textit{the} fundamental structure in algebra. They pop in all sorts of different fields from geometry, analysis and combinatorics to far flung fields like physics and chemistry. Understanding these fundamental objects is essential for learning further mathematics in many areas.

Groups have a lot of structure, and so we can say a lot about them. Amongst the many topics that we will are:

- the basics of groups theory;
- basic groups such as cyclic groups and permutation groups;
- basic theorems such as Lagrange’s theorem and the homomorphism theorems;
- more advanced theorems like the Sylow’s theorems;
- and many many more!

Figure 1: The Dihedral group $D_6$ as represented by flips and rotations on a hexagon.

Prerequisites: Math 340 or 342 or 332.