Abstract

This thesis aims to study the groups acting on the circle, their properties and
the dynamics under their action. The first chapter starts with a basic introduction to
the definitions, theorems and some proofs that will come in handy while going through
the subsequent chapters. Then some explicit examples of groups acting on the circle
are given in the second chapter, to lay the foundation for the more general groups.
The third chapter discusses the group of all orientation-preserving homeomorphisms
of the circle, which is a big group considering the fact that most of the groups acting
continuously on the circle are a subgroup of this group (excluding orientation-reversing
groups). In the last chapter, rotation numbers are introduced, which give useful
information about the dynamics of the one-generator groups acting on the circle.
Finally, the appendix has some general propositions that were used in the proofs, but
would have been a digression had they been in the first chapter.