

MA 771 Exercises

- 2.5. Given an orientation-preserving homeomorphism $f : S^1 \rightarrow S^1$ with no periodic points, we defined a number s_f in class using “next nearest neighbors” and continued fractions. Show that $s_f = \rho_f$ in \mathbb{R}/\mathbb{Z} (ρ_f denotes the rotation number of f).
- 2.6. In class, we constructed one version of the Denjoy map $f : S^1 \rightarrow S^1$ for any given irrational rotation number ρ . This map f is semiconjugate to the rotation R_ρ by a semiconjugacy ψ . Describe ψ and show that it does not have bounded variation.