Iteration and Fixed Points
MATH206 Project (after MATH241)

This project is about iteration, mostly of maps of the interval or real line, but iteration of matrices gives a sample of iteration in higher dimensions. Iteration near fixed and periodic points will be looked at. Some programs are available to make a study of different maps in the logistic family of maps $\lambda x(1-x)$ for different values of λ.

The project is for a group of (up to) 8 students. All the theory for all the members is the same; however, theory is divided into pieces, a piece for each member of the group to write it up and be responsible for at the oral presentations and during the whole group work over the project. The problems are all individual.

CONTENTS:

Sources

[B-G-R] J.W. Bruce, P.J. Giblin and P.J. Rippon, Micro Computers and Mathematics, pp 345-362, pp55-62.

[D] R. Devaney, An Introduction to Chaotic Dynamical Systems, pp 24-31, pp 60-70

[E] Elaydi, Discrete Chaos, pp 289-301, pp 20-29, pp 51-70, pp 135-146