Logistic Maps, Feigenbaum Constant and Mandelbrot Set

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1 Logistic map

Starting from $x_{n+1} = rf(x_n)$, the idea is to plot x_n vs. n for different r (and different x_0) to show the behavior for large n. Then, I would like to produce an animation of the bifurcation diagram: asymptotic values of x vs. r.

2 Feigenbaum constatnt

The idea is to numerically calculate the Feigenbaum constant and show that it is the same for different $f : [0, 1] \to \mathcal{R}$ provided they satisfy certain conditions.

3 Mandelbrot set

Show the correspondence between the Mandelbrot set and the bifurcation diagram