

Classroom Chaos 7 Dr. Richard A. DiDio La Salle University

0. Stair-Step Diagrams

Carefully perform a stair-step iteration for the logistic map

$$P_{t+1} = rP_t(1-P_t)$$

at the 4 indicated values of the parameter r. After generating these cob-web diagrams, describe how your results are related to the time-series/return map views generated in Classroom Chaos 5



Can you find an orbit that doesn't explode when r > 4?



You should be able to find an infinite number of starting points that yield orbits that don't explode!! Where are they?

1. The Quadratic Map & Mandelbrot Orbits

Carefully perform a stair-step iteration for the quadratic map

$$x_{t+1} = x_t^2 + c$$

at the indicated values of the parameter c. What's the connection between these cob-webs and the Mandelbrot Set?



