

Math 130: Contemporary Mathematics

Team Project #4, due Wednesday, April 29.

Complete these problems in a group of 3. You may change teams for different assignments if you want. Make sure every member of your team participates in thinking about each problem. Explain your solutions clearly. Credit will be given for creativity and design.

1. Create your own fractal, using the collage technique described in Section 6.3. Extra credit will be given for particularly original and/or attractive fractals. You can use the fractal-making applications linked to on the course webpage to get ideas.
 - (a) Draw a detailed picture of your fractal.
 - (b) Describe your fractal-making rule, showing the first few iterations.
 - (c) Find your fractal's dimension.
2. Using the applet at <http://math.bu.edu/DYSYS/applets/nonlinear-web.html>, complete Section 6.2 exercises 30, 32, and 37. For the two types of cobweb graphs (“logistic” and “tent”), experiment with different starting x -values. Summarize your findings in a paragraph.
3. Play the Chaos Game #1 at <http://math.bu.edu/DYSYS/applets/chaos-game.html>, on the medium level. Explain your strategy to win the game.