Problem Set 3 (non-programming) Due Friday 3/14, 5 PM.

Problem 3.1 (three parts)

a. Here is a sequence of five shapes, starting with a "level 0" shape, then a "level 1" shape (in red), a "level 2" shape (in green), "level 3" (in blue), and "level 4" (in light blue). What is the similarity dimension of the fractal that we are approaching as the level increases?



3.1b Here is a self-similar shape: the pictures show successive replacements of the smaller copies of the shape. What is the similarity dimension of this shape?





3.1c What is the similarity dimension of the fractal being approximated here? Explain your answer.



3.2 (~1 page) Based on your reading of Turing's 1950 paper, choose one of the paper's objections to the "Turing test" that you feel has particular interest or force (regardless of whether you agree or disagree with it), and explain why you feel that this objection is interesting.