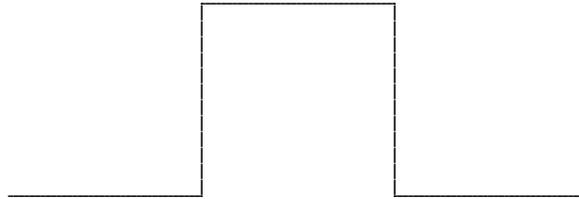


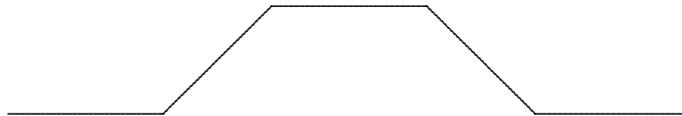
These homework problems are meant to expand your understanding of what goes on during class. Any you turn in will be graded and returned to you. Answers may or may not be posted on the web, depending on demand.

1. Repeat the construction for a Koch snowflake, except now use the iteration that replaces each side with



Start with a square rather than a triangle.

- (a) What is the area of the shape you end up with? (Does area make sense for this shape? Decide what area means, and find the area.)
  - (b) What is the perimeter of this shape?
2. Repeat the previous problem, this time replacing each side of an equilateral triangle with the



(Here there should be less of a problem discovering the meaning of “area” than in the previous problem. Why?)

3. Find and read a copy of Edwin Abbot Abbot’s classic book “Flatland: A Romance Of Many Dimensions” (originally published in 1884). The text should be available at your local library, and it is available online at <http://www.alcyone.com/max/lit/flatland/>. It is written from the perspective of the narrator, A. Square, living in a two-dimensional space and trying to come to grips with the “third dimension.” It is written for a late-19th-century audience starting to come to grips with the new idea of the possibility of a fourth dimension. And, yes, there are two Abbots in his name.
4. Do as many of the problems from the handouts on logarithms or complex numbers as you like. (I will accept problems from each, even though the answers are given on the logs handout. This just means you have to show me some steps on the way.)