Part I: Draw a Koch snowflake

The seed is a triangle \triangle . Replace each _____ with ____. Draw the next 2 stages and shade the inside.



Part II: Draw a Sierpinski triangle

The seed is a triangle \blacktriangle . Divide each triangle into 4 equal triangles and discard the middle one. Draw the next 3 stages, shading the remaining part.



Part III: Adding up numbers is lots of fun

Fill each hexagon with the sum of the two numbers above it. Lightly shade the odd numbers.



Which fractal does this resemble?

Begin with a square whose sides have length 1. Replace each with					
Step	Picture	Number of edges	Edge length	Total perimeter	
Seed		4	1	4	
Step 1		16	$\frac{1}{3}$	$\frac{16}{3}$	
Step 2					
Step 3	and the second				
: Step N	C C C C C C C C C C C C C C C C C C C				

Part IV: Find the perimeter of a Koch squareflake

As N gets larger, how does the total perimeter change? What happens when N goes to infinity?

Part V: Find the area of a Sierpinski right triangle

The Sierpinski Triangle is formed recursively, starting with a filled-in triangle. For every triangle remaining, divide the triangle into 4 equal sub-triangles and remove the middle. Now repeat the previous step on the remaining triangles. The starting triangle is a right triangle with base of length 1, and height of length 2.



As N gets larger, what happens to the area? If N goes to infinity, what is the "final" area?

Part V: Free response

1. What is the most useful thing you learned this semester?

2. What is the prettiest thing you learned this semester?

3. What is the hardest thing you learned this semester?

4. Why do people study mathematics?