Name_____

Fractals: Length, Area, Perimeter and Volume

As a class we will find the length of the CANTOR SET and also discuss a formula that will help us to do this and to find areas, perimeters and volumes of other fractals.

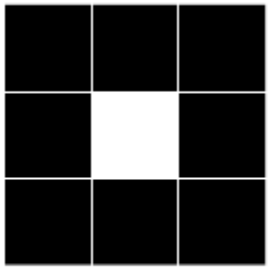
1) What is the length of the CANTOR SET?

Space for notes on related idea from sequence and series and for the formula:

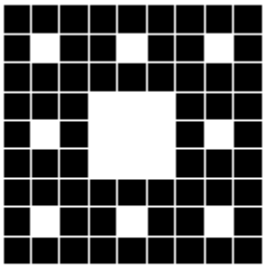
Necessary formula:

2) Find the area and the perimeter of the SIERPINSKI CARPET:

stage 0
initiator



stage 1
generator



stage 2

AREA:

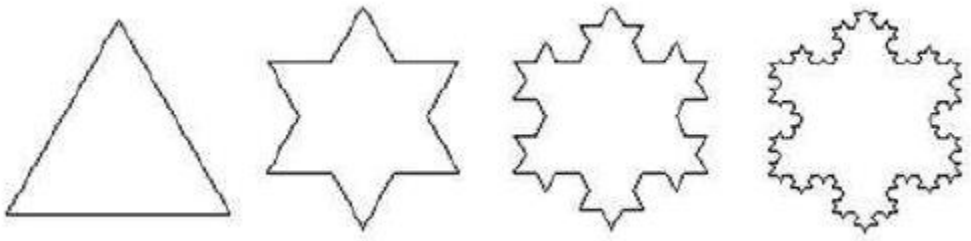
PERIMETER:

3) Find the area and the perimeter of the SIERPINSKI GASKET:

AREA – Assume the original area to be ONE SQUARE UNIT.

PERIMETER – Assume the length of the sides of the original triangle to be ONE UNIT IN LENGTH.

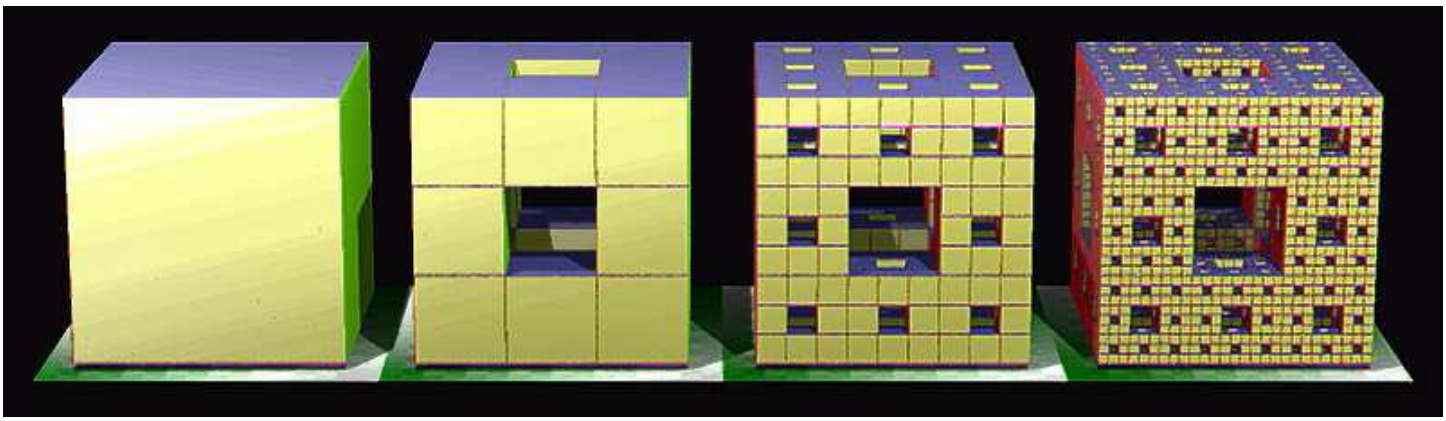
4) Find the area and the perimeter of the SIERPINSKI GASKET:



AREA – Assume the original area to be ONE SQUARE UNIT.

PERIMETER – Assume the length of the sides of the original triangle to be ONE UNIT IN LENGTH.

5) Find the VOLUME of the MENGER SPONGE:



VOLUME:

6) **REVIEW QUESTION**: What is the DIMENSION of the MENGER SPONGE?