Math 116: Fractals

1. Find the dimension of the fractal given its scaling ratio $r$ and replacement ratio $N$. $(r = 4$ and $N = 5)$

2. Find the dimension of the fractal given its scaling ratio $r$ and replacement ratio $N$. $(r = 6$ and $N = 12)$

3. Sketch stages 0, 1, and 2 of the fractal with the given initiator and generator, and then find its dimension.

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Initiator

Generator
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4. Find the dimension of the fractal given its scaling ratio $r$ and replacement ratio $N$. $(r = 5$ and $N = 8)$

5. Find the dimension of the following fractal given the initiator and generator of the fractal.

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Initiator

Generator
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6. Find the dimension of the fractal with the given initiator and generator.

**The Hilbert Curve**

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Initiator

Generator
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7. Exploratory Question: Find the dimension of Sierpinski’s Carpet. Compare the result to the dimension of the fractal in the above problem (The Hilbert Curve).