

# Chapter 16: More Practice with Fractals and Dimension

Worksheet to accompany

David Feldman, *Chaos and Fractals: An Elementary Introduction*,  
Oxford University Press, 2012



Figure 1: Steps in the construction of the Cantor Set.

1. Complete the following table using the successive steps in the construction of the Middle-Thirds Cantor Set, as illustrated in Fig. 1:

| Step | Number of Segments | Length of Each Segment | Total Length |
|------|--------------------|------------------------|--------------|
| 0    |                    |                        |              |
| 1    |                    |                        |              |
| 2    |                    |                        |              |
| 3    |                    |                        |              |
| n    |                    |                        |              |

2. As  $n$  goes to infinity, what happens to the total length of the Cantor Set?
3. What is the dimension of the Cantor Set?