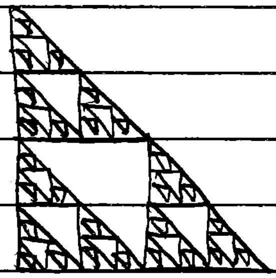

Review the calculation of the boxcounting dimension of the gasket. In general, $N(r)$ is the number of boxes of side length r needed to cover the shape. Then $N(r) \sim (1/r)^d$, so

$$d = \lim_{r\to 0} \log(N(r))/\log(1/r)$$

The symmetry of the gasket suggests taking $r = 1/2, 1/4, 1/8, \ldots, 1/2^n$.

We see $N(1/2) = 3$,

$N(1/4) = 9$, that is, $N(1/2^2) = 3^2$

$N(1/8) = 27$, that is, $N(1/2^3) = 3^3$

and in general, $N(1/2^n) = 3^n$. Here $r = 1/2^n$, so $r \to 0$ means $n \to \infty$

We find $d = \lim_{n\to\infty} \log(N(1/2^n))/\log(1/(1/2^n))$

$$= \lim_{n\to\infty} \log(3^n)/\log(2^n) = \lim_{n\to\infty} n\log 3/n\log 2 = \log 3/\log 2$$

Now take the product of a Cantor set in the x-direction, and the unit interval in the y-direction.

The symmetry of the Cantor set suggests using squares of side length $1/3, 1/3^2, 1/3^3, \ldots$

$N(1/3) = 6$

$N(1/3^2) = 6^2$

$N(1/3^n) = 6^n$

$$d = \lim_{n\to\infty} \frac{\log(N(1/3^n))}{\log(1/1/3^n)} = \lim_{n\to\infty} \frac{\log(6^n)}{\log(3^n)} = \lim_{n\to\infty} \frac{n\log 6}{n\log 3} = \frac{\log 6}{\log 3}$$

$$= \frac{\log(2\cdot 3)}{\log 3} = \frac{\log 2}{\log 3} + \frac{\log 3}{\log 3} = \frac{\log 2}{\log 3} + 1 = d(\text{Cantor set}) + d(\text{interval})$$