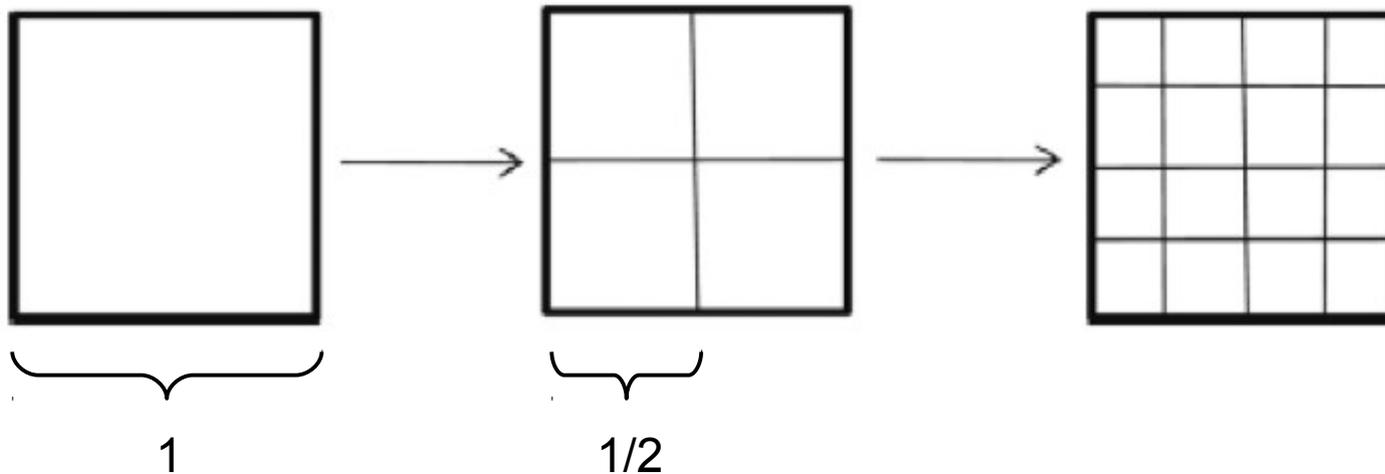


# Fractal Dimension

“ $N$  parts scaled by  $1/M$ ”

$$\text{Dimension} = \log N / \log M$$

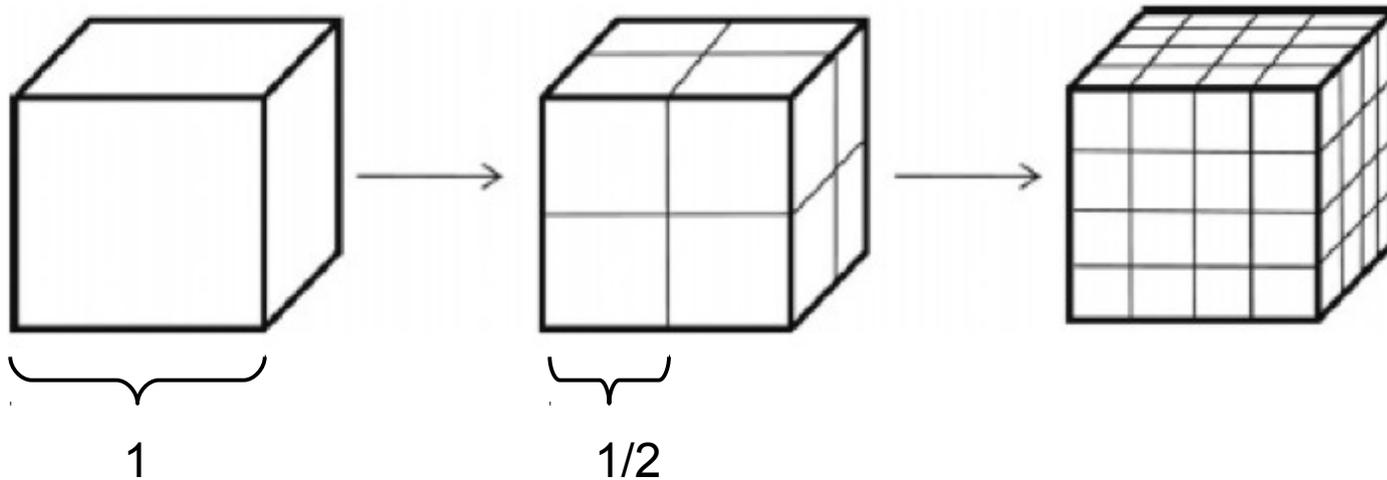
# Ordinary Dimension: Square



4 parts scaled by  $1/2$

$$\text{Dimension} = \log 4 / \log 2 = 2.0$$

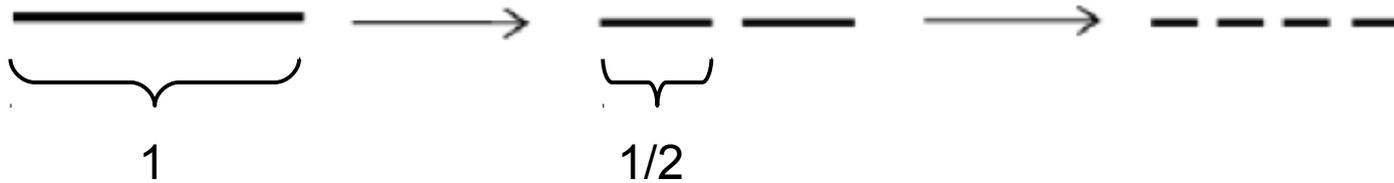
# Ordinary Dimension: Cube



8 parts scaled by 1/2

$$\text{Dimension} = \log 8 / \log 2 = 3.0$$

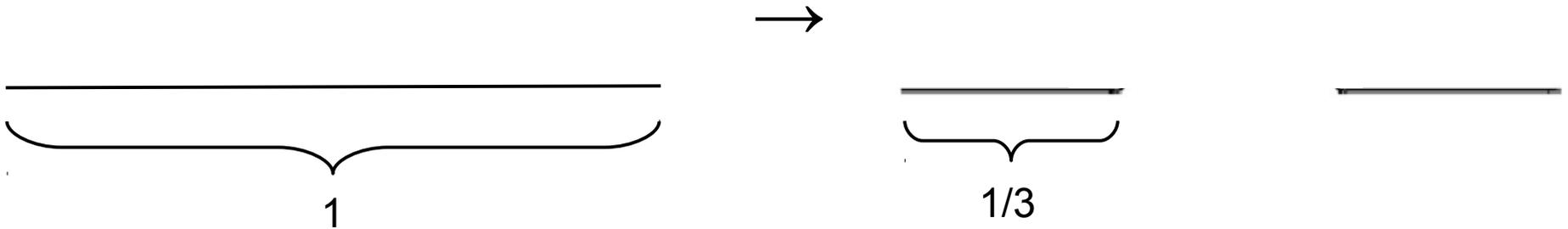
# Ordinary Dimension: Line



2 parts scaled by  $1/2$

$$\text{Dimension} = \log 2 / \log 2 = 1.0$$

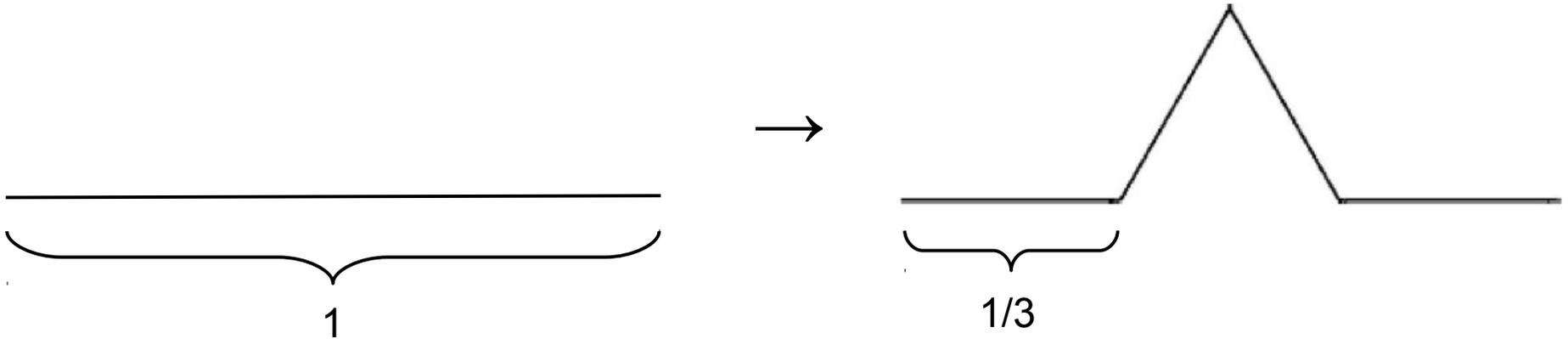
# Fractal Dimension: Cantor Set



2 parts scaled by  $1/3$

$$\text{Dimension} = \log 2 / \log 3 = 0.63$$

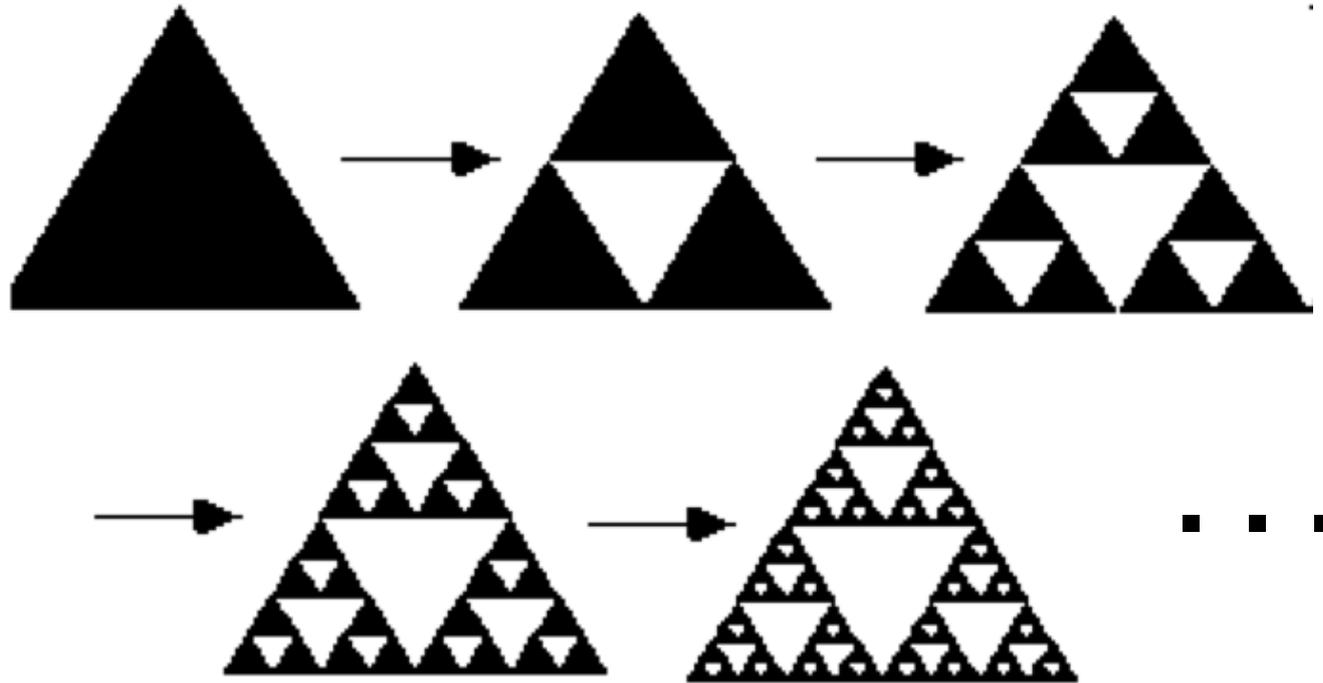
# Fractal Dimension: Koch Curve



4 parts scaled by  $1/3$

$$\text{Dimension} = \log 4 / \log 3 = 1.26$$

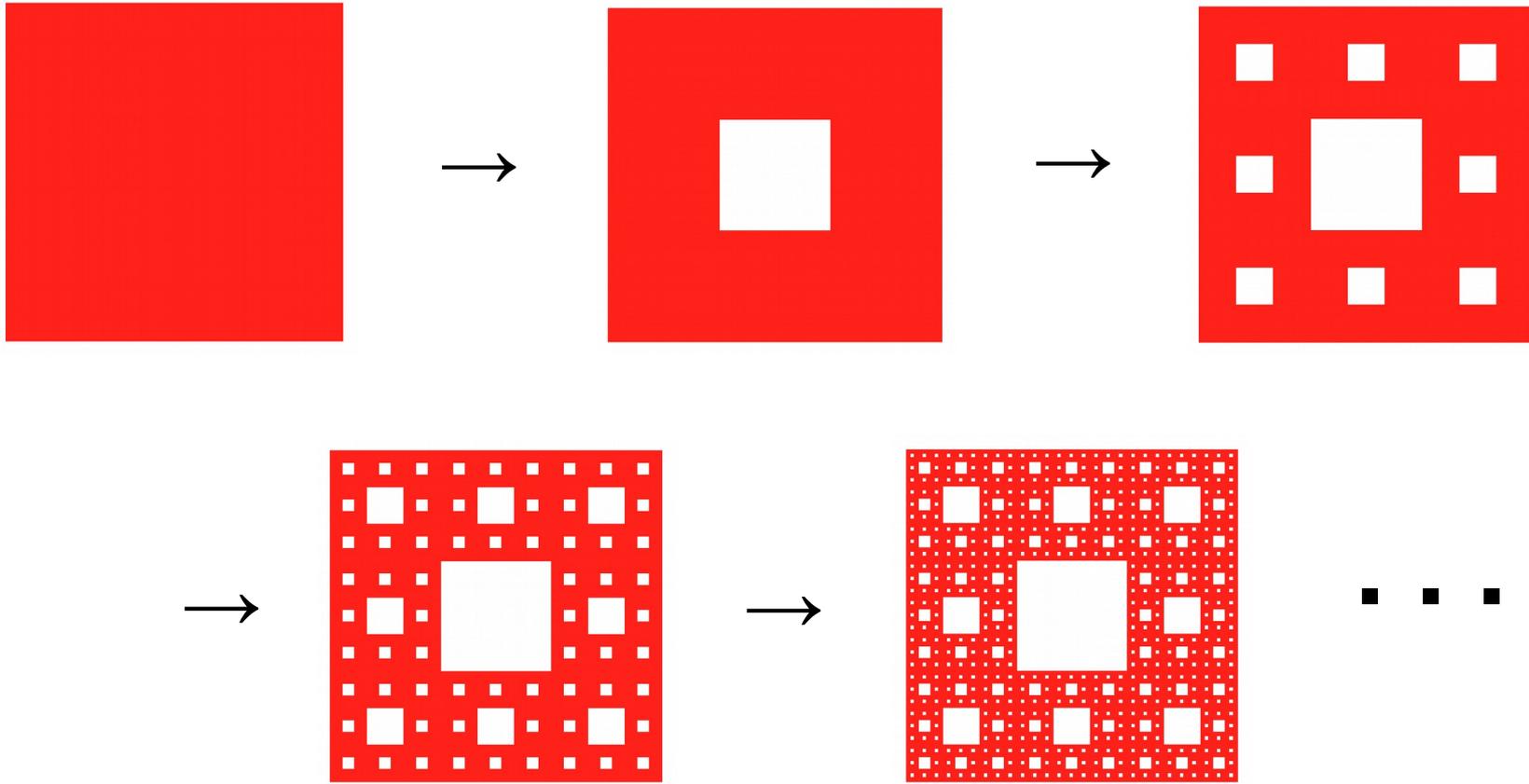
# Fractal Dimension: Sierpinski Triangle



3 parts scaled by  $1/2$

$$\text{Dimension} = \log 3 / \log 2 = 1.58$$

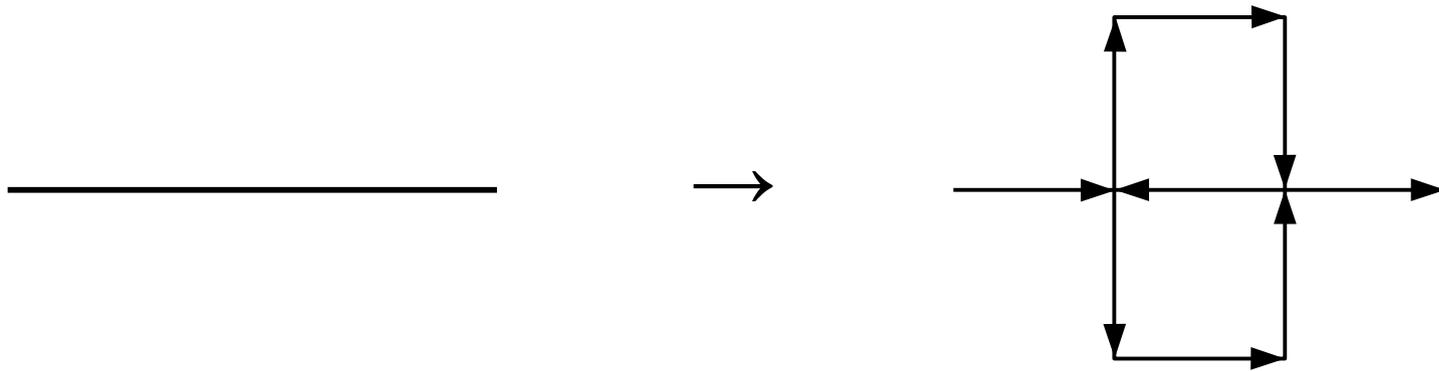
# Fractal Dimension: Sierpinski Carpet



8 parts scaled by  $1/3$

$$\text{Dimension} = \log 8 / \log 3 = 1.89$$

# Fractal Dimension: Peano Curve



9 parts scaled by  $1/3$

$$\text{Dimension} = \log 9 / \log 3 = 2.0$$