

Infinity

$$\{x: x \in \mathbb{Z}\}$$

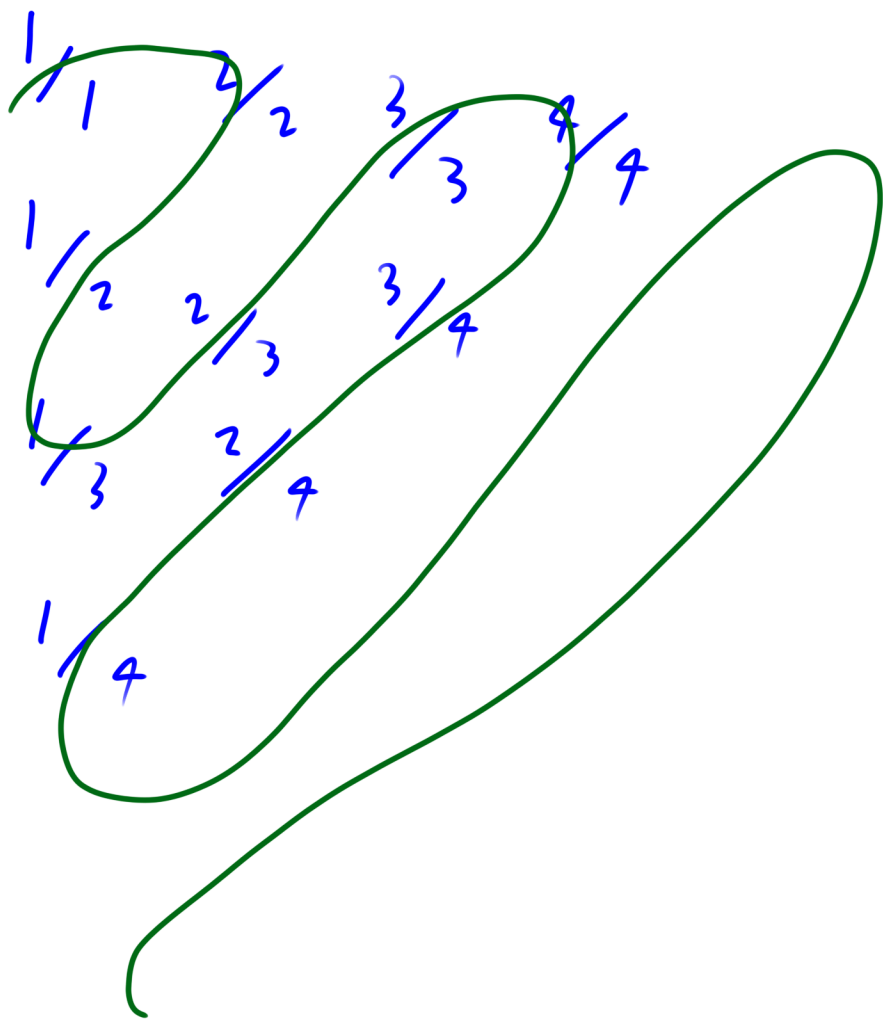
$$\{x: x > 0, x \in \mathbb{Z}\}$$

Cardinality

$$|\{x: x \in \mathbb{Z}\}| = \infty$$

$$|\{1, 2, 3\}| = 3$$

$$|\{x: x \in \mathbb{Q}\}| = |\{\frac{x}{y}: x, y \in \mathbb{Z}\}|$$



1 1.1 1.01 1.001 ...

2

3

4

⋮

$$|\{x: x \in \mathbb{R}\}| > |\{x: x \in \mathbb{Z}\}|$$