

- There are a lot of countable sets (bijective with  $\mathbb{N}$ ):

$2\mathbb{N}$ ,  $\mathbb{Z}$ ,  $\mathbb{Q}$ , terminating decimals, repeating decimals,

- But there are bigger sets!

$$|\mathbb{R}| > |\mathbb{N}|$$

- And yet bigger sets!

$$|\mathbb{N}| < |\mathbb{R}| < |\mathcal{P}(\mathbb{R})| < |\mathcal{P}(\mathcal{P}(\mathbb{R}))| < \dots$$