1. Find a concrete bijection between the intervals $(0,1)$ and $(5,8)$ in $\mathbb{R}$. Also, write a formula for the inverse of that function.

2. Show that the function $g : \mathbb{N} \times \mathbb{N} \rightarrow \mathbb{N}\setminus\{0\}$ given by $(a, b) \mapsto 2^a \cdot (2b+1)$ is a bijection.

3. Is the set of all functions from $[3]$ to $\mathbb{N}$ countable? Compare it with sets that you are more familiar with.