

Let P be the set of even numbers. Prove that

$$\phi : \begin{cases} \mathbb{N} \rightarrow P \\ n \mapsto 2n \end{cases}$$

Is bijective.

$$\begin{aligned} & \forall y \in P, \exists! x = \frac{y}{2} \mid 2x = y \\ & \Rightarrow \phi \text{ is bijective} \\ & \Rightarrow |P| = |\mathbb{N}| \end{aligned}$$