

**Math 300 Intro Math Reasoning**  
**Worksheet 08: Equinumerability**

(1)

- (1) Let  $Y = \{n + 2 \mid n \in \mathbb{N}\} \subseteq \mathbb{N}$ . Find a bijective map  $f : \mathbb{N} \longrightarrow Y$ .
- (2) Show that  $(-1, 2) \sim (6, 7)$
- (3) Find an injection from  $\mathbb{N} \times \mathbb{N}$  into  $P(\mathbb{N})$ .

(2) Suppose that  $A \sim A'$  and  $B \sim B'$ . Prove that  $A \times B \sim A' \times B'$