

**Definition:** For nonempty sets  $A, B$ , we say that **the cardinality of  $A$  is no smaller than the cardinality of  $B$** , and write  $|A| \geq |B|$ , to mean there is an onto function with domain  $A$  and codomain  $B$ . Also, we define  $|A| \geq |\emptyset|$  for all sets  $A$ .