

For nonempty sets  $A, B$  we say

$|A| \leq |B|$  means there is a one-to-one function with domain  $A$ , codomain  $B$

$|A| \geq |B|$  means there is an onto function with domain  $A$ , codomain  $B$

$|A| = |B|$  means there is a bijection with domain  $A$ , codomain  $B$

For all sets  $A$ , we say  $|A| = |\emptyset|$ ,  $|\emptyset| = |A|$  if and only if  $A = \emptyset$ .