

## Modern algebra I, spring 2017. Quiz 1

Name: \_\_\_\_\_

1. Check the boxes that are followed by correct statements.

$(A \cup A) \setminus (A \cap A) = \emptyset$  for any set  $A$ .

The composition of two bijective maps is a bijective map.

The relation on natural numbers  $\mathbb{N}$  where  $a \sim b$  if  $a + b$  is even is an equivalence relation.

Any common divisor of natural numbers  $n$  and  $m$  divides the greatest common divisor  $\gcd(n, m)$ .

The set of integers  $\mathbb{Z}$  with the binary operation subtraction is a group.

The set of strictly positive rational numbers

$$\mathbb{Q}_{>0} = \{x \in \mathbb{Q} : x > 0\}$$

with the binary operation multiplication is a group.