

## Modern algebra I, spring 2017. Quiz 5

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

Check the boxes that are followed by correct statements.

- Any two orbits of a group  $G$  acting on a set  $X$  are either disjoint or equal.
  
  
  
  
  
  
  
  
  
  
- The centralizer of the permutation  $(123)$  in  $S_5$  has order 3.
  
  
  
  
  
  
  
  
  
  
- There is a group of order 50 that has a normal Sylow 2-subgroup.
  
  
  
  
  
  
  
  
  
  
- 3-cycle  $(234)$  generates a Sylow 3-subgroup of  $S_4$ .
  
  
  
  
  
  
  
  
  
  
- Dihedral group  $D_6$  is solvable.
  
  
  
  
  
  
  
  
  
  
- Any Sylow 2-subgroup of  $S_4$  is abelian.