Modern algebra I, spring 2017. Quiz 4

Name:_____ UNI: _____

Check the boxes that are followed by correct statements.

 \Box The regular action of a group G on itself has only one orbit.

 \Box If a group G of order six acts transitively on a three-element set, then the stabilizer of any point has order two.

 \Box The conjugation action of the symmetric group S_3 on itself has exactly two orbits.

 \Box The permutation action of the symmetric group S_3 on $\{1, 2, 3\}$ has no fixed points.

 \Box Any Sylow 2-subgroup of S_3 is abelian.

 \Box The subgroup C_5 of all rotations is a Sylow 5-subgroup of the dihedral group D_5 .