TRUE OR FALSE. No partial credit.

1. Two elements of a group in the same conjugacy class must have the same order.

2. A group of order 24 can have 5 conjugacy distinct classes of cardinalities 1, 4, 4 and 6 and 12, respectively.

3. The group $S_3$ has three conjugacy classes, of cardinalities 1, 2 and 3, respectively.

4. An element is in the center of a group $G$ if and only if its centralizer is all of $G$.

5. Every group has at least one conjugacy class consisting of one element.

6. If $H$ is a normal subgroup of $G$, then it is stable under the action of conjugation on $G$.

7. The group $\mathbb{Z}_{17} \times \mathbb{Z}_2$ has 34 distinct conjugacy classes.

8. In any finite group $G$, the order of the centralizer of each element divides $|G|$.

9. In an abelian group, the centralizer of every element is trivial.

10. An abelian subgroup of a group is always normal.