

Abstract Algebra I (graduation)
Date 2022.11)

1. Determine if each of the following statements is true. Justify your answer.
 - (1) (10 pt) Suppose H is a unique subgroup with order $|H| = 29$ of a finite group G . Then H must be a normal subgroup of G .
 - (2) (10 pt) Let a and b be integers. $a\mathbb{Z} + b\mathbb{Z}$ is a subgroup of $(\mathbb{Z}, +)$ generated by a and $7a + b$.
- 3 (10 pt) Classify all abelian group G of order $|G| = 1485$, up to isomorphism.