Algebra-1

1. Understand and apply divisibility rules and the Euclidean algorithm to find the greatest common divisor of two integers.
2. Analyze and prove properties of numbers using the principles of mathematical induction.
3. Identify and analyze binary relations, including reflexive, symmetric, antisymmetric, and transitive relations.
4. Define and determine if a function is injective, surjective, or bijective, and understand their properties.
5. Analyze permutation groups and understand their role in group theory.
6. Apply matrix operations and determinants to solve systems of linear equations using the Gauss elimination method.
7. Understand and apply the concept of cosets and Lagrange's Theorem in group theory.
8. Implement the matrix inversion method to find the inverse of a matrix and solve systems of linear equations efficiently.