Students must know the precise definitions of the following terms:

- Cartesian product
- relation
- function
- arity of a relation or function (e.g., nullary, unary, binary, ternary, n-ary)
- onto, one-to-one, bijective function
- equivalence relation
- partition
- equivalence class
- congruence modulo n
- partial order
- partially ordered set
- total order
- totally ordered set
- well-ordered set
- common divisor
- greatest common divisor
- common multiple
- least common multiple
- relatively prime
- prime number
- prime factorization
- power set
- algebra (or algebraic structure)
- universe
- operation
- associative and commutative properties (of binary operations)

- magma
- semigroup
- monoid
- group
- identity element
- inverse operation
- abelian group
- Cayley table
- finite group
- order (of a finite group)
- g^n and g^{-n} (for g an element of a multiplicative group)
- ng and $-ng$ (for g an element of an additive group)
- order (of a group element)
- subgroup, proper subgroup, trivial subgroup
- cyclic group
- generator
- symmetry, rigid motion
- permutation (and two ways to denote a permutation)
- cycle
- length (of a cycle)
- transposition
- even, odd (permutation)
- examples of groups: $\mathbb{Z}_n$, $U(n)$, S_n, A_n, D_4