

ASSIGNMENT 2

Answer all question.

$$5 \times 4 = 20$$

1. Prove that the set of all complex numbers of unit modulus forms a commutative group with respect to multiplication.
2. Let (G, o) be a group. Prove that G is abelian if and only if $(aob)^{-1} = a^{-1}ob^{-1}$ for all $a, b \in G$.
3. Show that the set of all permutation on the set $\{1,2,3\}$ forms a non-commutative group with respect to multiplication.
4. Let (G, o) be a semigroup and for any two elements a, b in G , each of the equation $aox = b$ and $yoa = b$ has a solution in G . Prove that (G, o) is a group.