Abelian group or Commutative group: – A group (G, o) is said to be an abelian group if it satisfied. Commutative law

i.e. for all $a, b \in G$ such that $aob = boa$.

Non Abelian Group: A group (G, o) is said to be non abelian group if it not satisfy commutative law.

i.e. for all $a, b \in G$ such that

$$aob \neq boa.$$

Finite group: – A group (G, o) is called a finite group if the number of elements in the group is finite.

Infinite group: – If the group G contains an infinite number of elements. Then G is called infinite group.

Q: – Prove that every group of two elements is necessarily abelian.

Solution: – A group with two elements consists of identity element e and another element $a \neq e$.

Since $e^{-1} = e$ and all the elements must have inverse elements in the group G, $a^{-1} = a$

Thus $G = (e, a)$ where $a^{-1} = a$.

Then $eoa = aoe = a$

i.e. Commutative law holds.

Hence G is abelian.