Please complete the following definitions.

1] A **group** is a set $G$ together with an operation $*$ satisfying the following axioms:

2] A group $G$ is called **abelian** if

3] A non-empty subset $H$ of a group $G$ is a **subgroup** if and only if the following two conditions hold:

   - for every $h, k \in H$,
   - for every $h \in H$,

4] If $G$ is a group and $a$ is an element of $G$ then the **cyclic subgroup generated by $a$** is the subgroup

   $$(a) =$$

5] A group $G$ is called **cyclic** if