AMAT 327(Z): Elementary Abstract Algebra, Spring 2011 Quiz # 13, April 11

Name: .....

1] Please complete the following sentences:

A] A 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 $h \in H$ .....

B] A subgroup H of a group G is *cyclic* if and only there exists .....

such that .....

C] A subgroup H of a group G is *normal* if and only if for every $a \in G$ and for every $h \in H$ .....

.....

2] Are the following statements true or false? Please circle your answers.

A] If H is a subgroup of a group G and G is abelian, then H is necessarily abelian.... TRUE | FALSE

B] If H is a subgroup of a group G and G is abelian, then H is necessarily normal.... TRUE | FALSE

C] If H is a subgroup of a group G and H is abelian, then H is necessarily normal ... TRUE | FALSE

D] If H is a subgroup of a group G and G is cyclic, then H is necessarily cyclic..... TRUE | FALSE