



9. If  $H$  is a subgroup of a group  $G$ , then prove that  $H^{-1} = H$ . Is converse of this theorem is true?

(BT -3)

10. Prove that the intersection of any two normal subgroups of a group is a normal subgroup.

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11. Prove that the homomorphic image of an abelian group is abelian.

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12. If  $f = (2 \ 3 \ 6)$ ,  $g = (1 \ 4 \ 6)$  then find  $fg$ ,  $gf$ .

(BT -2)

13. Prove that every field is an integral domain.

(BT -3)