

KING SAUD UNIVERSITY

QUIZ 5

COLLEGE OF SCIENCE

NAME:

MATH343-14472

DEPARTMENT OF MATHEMATICS

STUDENT ID:

Let G be a group with $H \trianglelefteq G$ and $K \leq G$:

- (1) Show that if G is abelian then the factor group G/H is also abelian.
- (2) Show that $HK \leq G$.
- (3) Show that A_4 is the only subgroup of S_4 of order 12.