

MATH 535

HOMEWORK ASSIGNMENT 2

due on Monday, 9/20/04

4. #2.62: Prove that A_4 is the only subgroup of S_4 of order 12.
5. #2.72: If H and K are subgroups of a group G , prove that $HK \leq G$ if and only if $HK = KH$.
6. Give an example of a group G and its two subgroups H and K which are not normal, and such that $KH = HK$.
7. Find the group of all automorphisms of the symmetric group S_3 .