

HW 8, due October 21, 2020

1. A finite group G has exactly three subgroups, 1 , G , and a nontrivial subgroup.

a) show that G is cyclic of order p^2 with p a prime number

b) show the reverse

2. Find all subgroups of S_4 (permutation group of 4 elements).

Is any of the subgroups normal

3. Do Exercise 14.3 of GS

4. Determine all symmetry groups of a single cubic crystal and determine their order

