

**ABSTRACT ALGEBRA, MATH 520**  
**WEEK 5 SUPPLEMENTAL HOMEWORK**

JANET VASSILEV

- (1) Let  $G$  be a finitely generated group and  $H \subseteq G$  is a subgroup of index  $n$ . Then there exists a subgroup  $K \subseteq H$  with  $K$  characteristic in  $G$ .