

Name: _____

Reading Questions

1. Make sure you know the definitions of the following terms: subnormal series, normal series, composition series, principal series, solvable group.
2. Reread Example 13.9. Give your own examples of a normal series of \mathbb{Z} and a normal series of \mathbb{Z}_{24} .

3. Reread Example 13.10. Note that this series can be rewritten as

$$D_4 \supset \{\text{id}, s, r^2, sr^2\} \supset \{\text{id}, s\} \supset \{\text{id}\}$$

Show that this is a subnormal series but not a normal series.

4. Reread Example 13.17.
 - (a) Show that the factor groups in the given subnormal series for S_4 are abelian.

(b) Which one of the factor groups in the given composition series for S_5 is nonabelian?

(c) Why does this show that S_5 is not solvable?

5. What struck you in this reading? What is still unclear? What remaining questions do you have?