

Name: _____

Read Section 5.1.

Reading Questions

1. Make sure you know the definition of the permutation group S_n , that you understand composition of permutations (right to left!), cycle notation, the definition of a transposition, even and odd permutations, and the alternating group.
2. Reread Example 5.5 and practice writing permutations in cycle notation by completing Exercise 1 from the textbook.

3. True or False. (Give citations or counter-examples.)
 - (a) Every permutation is a product of disjoint cycles.
 - (b) Let σ and τ be cycles in S_X . Then $\sigma\tau = \tau\sigma$.

(c) Every permutation can be written uniquely as a product of transpositions.

(d) The alternating group A_n is the subgroup of S_n consisting of transpositions.

(e) Exactly half of the elements of S_n are in A_n .

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