

PREP 10

Due: 11/07/2016

Reading. (BB) Read Section 2.3 again in the textbook. Particularly focus on page 80 and the **order** of a permutation, but also read about **transpositions** and the proofs of Prop 2.3.10 and Theorem 2.3.11.

Exercises.

- (1) Compute the following products of cycles (think about what permutation each cycle represents and compose them, remembering the one on the right is applied first). Write the answer using cycles.
 - (a) $(1,3,4)(1,2)$
 - (b) $(1,2)(1,3,4)$
 - (c) $(1,2,3,4,5)(1,2)$
 - (d) $(1,2)(2,3)(3,4)$
 - (e) $(1,2,3,4)(2,4)$
- (2) Find the inverse of the cycle $(1,3,5,2,4)$.
- (3) What is the order of the permutation $(1,3,6,4)(5,10,2,9,8,7)$? What is the order of $(1,2)(2,3,4)(4,5)$? (Note that Proposition 2.3.8 helps with one of these, but not the other).