

Math 321 Fall 2016
Homework 3
Due: September 16, 2016

You are welcome to work together but everyone needs to write up **distinct** solutions. If you use any books outside of our textbook or other people, please make sure to give them credit. Make sure your solutions are complete. If your handwriting is atrocious, I am happy to give you a basic introduction to L^AT_EX.

1. For each D_n prove that $r^i s = s r^{-i}$ for all positive integers i .
2. Write out a complete Cayley table for D_3 . Is D_3 abelian?
3. #5.2
4. #5.3
5. (a) #5.11
(b) Find an example of a group G where the elements of G that satisfy the equation $x^2 = e$ do not form a subgroup of G .
6. #5.14
7. #5.22
8. #5.25
9. #5.29