Math 3098: Modern Algebra 1. Instructor: Walton

Homework #8 on §2.7 of Goodman

Include full statements of problems in your solution set.

Write complete proofs, when proofs are requested.

Don't copy proofs from the internet!
Be honest– show what you know.

Due: Thursday, October 27, 2016 at the beginning of class **sharp**

(1) [1 point] Exercise 2.7.1 from Goodman.

(2) [2 point] Use one of the homomorphism theorems to show that the pairs of groups are isomorphic.
   (a) $\mathbb{Z}_5$ and $\mathbb{Z}_{20}/\langle [5] \rangle$.
   (b) $\mathbb{Z}_2$ and $S_3/\{e, (123), (132)\}$.

(3) [2 point] Exercise 2.7.6 from Goodman.

(4) [1 point] Exercise 2.7.7 from Goodman.

(5) [1 point] Exercise 2.7.9 from Goodman.

(6) [1 point] Exercise 2.7.10 from Goodman.

(7) [1 point] Exercise 2.7.11 from Goodman.

(8) [1 point] Exercise 2.7.12 from Goodman.