

CHAPTER 4 HOMEWORK

MAT 421: NUMBER THEORY

Directions: Each group is responsible for all of the problems listed. No problem should be attempted before we cover the material indicated with it. I only need one submission from each group. I will give time in class for groups to meet and work; however, you should plan to meet outside class as well.

1. GROUPS

Group 1	Group 2	Group 3
Ryan Anderson	Aaron Ayers	Sr. Maria Acosta
Kristie West	Stephanie Williams	
Shannon West	Melissa Dyess	

2. EXERCISES

§4.1: Introduction to congruences.

- *After the definition of congruence:* p. 153 #2(a,d,e), 4, 12, 20, 22
- *After the definition of least nonnegative residues:* p. 153 #6(a,d,e)
- *After Theorem 4.4:* p. 153 #8, 24
- *After Theorem 4.5:* p. 154 #26

§4.2: Linear congruences.

- *After Theorem 4.11:* p. 160 #2, 6
- *After Theorem 4.12:* p. 161 #8, 10
- *Also after Theorem 4.12:* How can we use the Extended Euclidean Algorithm to find an inverse modulo m ?

§4.3: The Chinese Remainder Theorem.

- *After the proof of the Theorem:* p. 167 #2, 4(a,c), 8
- *After the examples where the m_k are not relatively prime:* p. 168 #16(a), 18