Math 2200 Homework 7

Due Date: March 25

Please base your proofs by induction on the proofs in the notes! State anything you are proving or disproving as a claim. Submit your solutions in class on Monday or by 5 PM in my office.

Exercises to be Submitted

4.4.8, 4.4.9, 5.1.10 (a)-(d), 5.1.11 (a)-(b)

(For 4.4.8, you don’t have to show your Euclidean algorithm and back substitution work, but state the linear combinations you are using and show all other work for solving the congruences. Your solutions should be sets!)

Not to be Submitted

Josephine’s Problem: In Josephine’s Kingdom every woman has to pass a logic exam before being allowed to marry. Every married woman knows about the fidelity of every man in the Kingdom except for her own husband, and etiquette demands that no woman should tell another about the fidelity of her husband. Also, a gunshot fired in any house in the Kingdom will be heard in any other house. Queen Josephine announced that unfaithful men had been discovered in the Kingdom, and that any woman knowing her husband to be unfaithful was required to shoot him at midnight following the day after she discovered his infidelity. How did the wives manage this?

(See Wikipedia’s article “Induction puzzles” for the solution and for more riddles.)