Math 2200 Homework 6

Due Date: March 20

Before you attempt the computations and proofs, study the given examples, try to make up your own examples, and make sure you have a solid understanding of the definitions! Read and understand the easier proofs in the notes, then test yourself by trying to reconstruct the proofs yourself.

Computational exercises: for Exercise 4.3.15, repeatedly use Proposition 4.3.10. For Exercise 4.3.20, you also have Fermat’s Little Theorem at your disposal, when it applies. Please show your work! On scratch paper, check your final answer using old-fashioned division with remainder (when this is reasonable) and using Wolfram Alpha: go to www.wolframalpha.com, type in an expression like “3*4*5+11 mod 6” or “5^999 + 16 mod 4”, and Wolfram will unveil the solution!

Prove/disprove exercises: Please write nice formal proofs! State anything you are proving or disproving as a claim.

Submit your solutions in class on Wednesday or by 5 PM in my office.

Exercises to be Submitted
4.3.15, 4.3.16, 4.3.20, 4.3.22, 4.3.23

Not to be Submitted
4.3.5, 4.3.9, 4.3.18 (Challenge problem!)