

MATH 4450/6450
HOMEWORK 1
DUE 1/19/07

Read Chapter 1, and Appendix B.1 (or whatever appendix corresponds to the computer algebra system you plan to use). Do the following problems:

2.13.5, 2.13.6, 2.13.8, 2.14.9, 3.13.1, 3.13.3, 3.13.4, 3.13.5, 3.13.6.

Also solve the following problem:

Extra problem: Use a version of the fact that we gave in class, that every set of nonnegative integers has a least element, to prove the “division algorithm,” namely that if a and b are positive integers, then there is a unique integer q and a unique integer r , $0 \leq r < b$, such that $a = bq + r$. (Hint: Look at $\{a - bq : q \in \mathbb{Z}, a - bq \geq 0\}$.)

Math 6450 students: also do problems 2.14.7, 3.13.28.