Math 243
Test 2 review

Over all: Be able to write proofs, and be able to write short programs.

10. Writing subset proofs using the element argument should be down pat by now. Make sure you can use the definitions of union, intersection, complement, and difference correctly, and don't overlook things like the definition of Cartesian product (see Section 10.3 and Exercises 6 and 7).

11. Be able to write proofs of set equality. Be able to use proof by contradiction to prove set emptiness.

12. Be able to write proofs for conditional propositions. Problems like Exercises 6 and 7 are too difficult for the test, but we did spend a long time on powersets, so simpler problems involving powersets are a strong possibility. There will not be any proofs involving integers from this chapter (but problems from later chapters on induction and algorithm correctness may require things like definition of even and odd, etc).

14. Be able to write short programs like the ones asked for by the exercises. There will not be any problems involving arrays.

15. Be able to write proofs for propositions like Exercises 1-4, using induction.

16. Be able to prove that a proposition is a loop invariant. You will not need to write a complete correctness proof (that is, you will not need to prove termination).

17. Be able to write programs based on a given set of algorithms. I will try to give you hints or a push in the right direction on a problem like that, like the hints given in Exercise 4.