

CSCI 2310
Exam 2 Review Sheet
(Exam Date: Thursday November 5)

The exam is closed-book and closed-note. Exception you may bring one sheet of handwritten notes (normal sized paper). You may write notes on both the front and the back. *Note also that you will need to bring your own paper on which to write your answers. Five pages should be more than adequate.*

The exam focus is on applying the algorithmic and programming ideas we have studied. While the exam emphasizes the material we've covered since the previous exam, it assumes that you still can understand and use the material covered in the previous exam. For example, you should remain familiar and comfortable with the following String class methods: *length*, *equals*, *charAt*, *substring*, *indexOf*. The exam material emphasizes the following sections from the text: 3.1-3.3, 4.1-4.2, the discussion of the Math class (pages 370-372) and 7.1. In addition, there is material in the text relevant to the discussion about functions within section 5.1 (in particular pages 248-257 and 259-268). However, the class notes, handouts, homework problems, and labs are probably a better primary source.

Specific Requirements

- Tracing through execution of several programs that combine concepts related to conditional execution (i.e. *if* statements), repetitive execution (i.e. loops), use of function calls, and use of arrays.
- Writing of simple functions/methods that return values and use complex conditional logic, loops, and/or string manipulations.
- Writing of a complete program that requires maintenance of state information, use of abstractly specified functions, and uses complex control constructs.

Tips for Preparing

- Work and rework sample exercises and problems. If you understand the material well enough to write code to solve problems, you have a good understanding of the material. Some recommended exercises are given on the back of this page.
- Form study groups and ask each other questions or else individually work on problems and compare solutions.
- Think about what notes you are going to put on your sheet. Focus on things you have a hard time remembering.
- I will be out of town the day of the exam. My graduate assistant Tina will proctor the exam. If it becomes necessary to make an assumption about a problem, be sure to write down your assumption. Do not make an assumption that trivializes the problem (that would be a wrong assumption).
- I will have extra office hours from 2:30 to 4:30 P.M. the day before the exam (Wednesday November 4).
- Be well rested so that you can think clearly and read carefully.

Suggested Exercises

The following are some problems and exercises from the book that may be helpful as you prepare. I would not necessarily suggest you do all the Chapter 3 problems before doing Chapter 4 problems, etc. Time constraints will likely make it that you will need to pick and choose the problems you work on. Try to spend at least an hour each day working problems between now and the exam and you should be well-prepared!

Chapter 3

Exercises: 1-17

Programming Projects: 1, 5, 8, 9

Chapter 4

Exercises 4-6, 8, 9, 13, 16, 18, 19

Programming Project: 14

Chapter 7

Exercise 1

Programming Project: 1

In addition, here's a sample problem for writing a function.

Write a function *public static XXX isSum(int a, int b, int c)* which returns *true* if the sum of any two arguments is equal to the other argument. Thus, the call *isSum(23,-13,10)* should return *true* since $23 + (-13) = 10$. Similarly, the call *isSum(12,33,21)* should also return *true*, but the call *isSum(3,4,5)* should return *false*. In writing your solution, you should reproduce the header with the correct term in place of XXX

You might also write a test program that repeatedly reads in three values and outputs the result of calling *isSum*. You could use our "end of input" trigger to allow for multiple test cases.