

## CSCI 1320 Midterm Review Sheet

The test is going to be a 50 minute exam with 10 questions on it. The questions will be similar to those on the quizzes. The make-up of the test will be a roughly equal split of short answer questions, coding questions, and tracing questions. There will be varying levels of difficulty in the questions. The test is cumulative over all the material we have covered so anything we have talked about or that was in the reading can appear on it. Below I list the topics that stand out to me, and what you probably need to know about them. I can't promise that the test material will follow this perfectly, but I will try to make it do so. You get a one page cheat sheet.

### Basic model of computation

How does a computer work in the most simple of terms?

### Basic Linux Commands

By this point the basics should be second nature to you.  
I'm not going to ask about vi commands.

### Data Representation

Binary, Hex, and Octal and conversion between them.  
Addition, bitshifting, and multiplication in binary.  
2s compliment negative numbers and how to find them.

### Scala Basics

Know about expressions and statements in Scala.  
Variable declarations and something of their semantics.  
Building complex expressions with operators.  
Assignment to vars.

### Input and Output

Know the syntax and basic usage of println, readInt, readLine, etc.

### Functions

You need to understand the concept of breaking problems up into pieces.  
Know what the signatures/declarations of functions are and how to write them.  
Know about function literals and how to write them.  
Have some understanding of higher order functions.

### Conditional statements

Know the syntax of if and match expressions and what they can do and are used for.  
Boolean expressions, comparisons, and building complex expressions with logic operators.  
Know how to combine conditionals with functions to produce basic recursion.

### Collections

Know the basics of arrays and lists including how to construct them and work with them.  
Be able to build arrays or lists with values in them.  
Understand the basic methods available on collections.  
Understand the higher order methods available on collections.

### Repetition

Know the fundamental aspects of loops and the main types of loops.  
While, for, and do/while loop syntax and usage.  
Know the different ways in which you can use a for loop.  
Know how you can use recursion to produce repetition.

For all language features, you need to know how to use them both in writing code and be able to trace code that involves them.