CIS 15   **Spring 2007**   **Jansen**
MIDTERM I Review Sheet

MIDTERM I will include True/False, Multiple Choice, Short Answer, and Small Coding Questions, drawing from ALL of the Material Covered in Lectures through Lecture 9.

Topics	Lecture
UNIX Basics	2
UNIX Tutorial	
UNIX File Permissions (e.g. `-rw-rw-r--`)	8
Multi-Dimensional Arrays (2 and more dimensions)	3,4
Reading/Writing	
Initializing	
Use in Functions	
Searching Arrays	4
Linear (Sequential Search)	
Binary Search	
Sorting Arrays	4
Bubble Sort	
Selection Sort	
Flow Charts as design technique	5
Recursion	5
Call Stack	
Base Case / Recursive Case	
Binary Search as a Recursive Algorithm	
What is a Binary Search Tree?	
QuickSort	6
Divide and Conquer Algorithm	
Pivot Point and Partition Algorithm	
Tail Recursion	7
Optimization on Recursive Algorithms	
Stub and Cons Functions	
Use of Accumulator	
Characters / Strings	6,7
ASCII Character set (what is it? Don't memorize it!)	
Character Testing (with `<cctype>`)	
Character Case Conversion	
Getting Strings from `cin`	
String Library (`<cstring>`)	
Being able to write your own (`cstring`) functions	
C++ String Class (`<string>`)	
Comparing, Concatenating, Member Functions (if *given*)	
Command Line Arguments	8
How to implement with `main( )`...	
Common uses.	
File IO	8,9
Basics with `ifstream` and `ofstream`	
`fstream` with file access flags: `ios::in, ios::out`...	
Checking if a file exists	
Basics of Legal Filenames	
Output formatting with floats and doubles	
Writing functions with file streams	
Testing Error Bits (`ios::eof, ios::failbit`...)	
Reading and writing character by character	
Sequential vs. Random File Access	
Random File Access functions (`seekg, seekp, tellg, tellp`...)	
Determining how large a file is in bytes.	