CSCI1320 Final Review Sheet

The final for this class will be a bit longer than the midterm. It will explicitly focus on the material from
the second half of the semester, though material from the first half will be included implicitly as it is
needed to answer questions. The final will have 10 regular questions and one extra credit question. The
style of questions will be similar to what you have seen before with short answer, code writing, and tracing
of code. You can bring in a one page cheat sheet and you will be able to access both the Java and Scala
APIs during the test.

Topics:
Files
You need to know how to use files in code as well as what they are good for. If you have to write
code involving files you don't have to have the function call syntax perfect, but it needs to be close
enough that I can understand. It should definitely include the right names of the functions.

Case Classes
Know how to declare and use case classes.

Mutable and Immutable
Understand the difference between mutable and immutable data. Be especially aware of what impact
this difference has on data passed into functions.

GUIs
Be able to write code that will create a simple GUI and have it do something simple in response to
user interaction.

Sorting
You need to understand how each of the three O(n²) sorting algorithms works. You should be able to
write the code for them using loops or recursion.

Searching
Know how sequential and binary searches work. You need to know when each one can or should be
used and be able to describe why the binary search is faster.

XML
Understand the advantages of XML over flat text files. Also know how to parse out data from XML
as well as how to build XML nodes from data.

Recursion
Know how to write and trace recursive functions. You should also understand when recursive
functions can/should be used to aid in problem solving. How do they compare to loops and when are
they superior to loops?

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.