The pre-test grade will count as a lab grade. At the bottom of your pre-test are letters corresponding with a task below. If you complete all the items below to a satisfactory level, your lab grade will be 100.

If you have no letters on your pre-test, you will get 100 for the lab grade. (But if you lost points, be sure you understand why so you don’t lose the same points on exams.)

Tasks consist of writing code, a text explanation, a presentation, or some mix.

All work must be done alone. You may not copy from another person or from the web or a textbook (See the syllabus). Everything must be in your words, and come from your understanding.

**Note:** The point of these tasks is not to get past them or to just finish them. View them as a process to help you learn something you missed previously. After the task you should have a better understanding of the parts of the pre-test you missed, and you should be better prepared for Java parts of the exams.

**CISC275 Spring 2016 Pre-test Grade recovery**

A. Write a slide presentation covering the basics of constructors. You should cover return type, parameters, super, this, chaining, calls, and anything we’ve needed in 275 so far.

B. Write a one page explanation of toString with example code, discussing return type, parameters, overload, Object, calls, and anything we’ve used in 275 so far.

C. Explain in a slide presentation what Collection, HashSet, and ArrayList are in Java and how they are related.

D. Write a paragraph about the use of “new”, its return type and its relation to memory and constructors.

E. Write four code examples of using a for each loop. One example should show what can be done with a traditional for loop that cannot be done with a for each loop. Comment.

F. Show different ways to declare and initialize an array of ints. Explain how a 2D array in Java is organized in memory.

G. Give code examples of initializing 1D and 2D arrays using for loops.

H. Explain in text how (int) div and mod separate a set of numbers into groups. Code a chart showing the result of numbers 0-89 div 9, and mod 9. Code an example that solves the printing problem from the pre-test.

I. Write a slide presentation covering the basics of boolean expressions in Java.

J. Write a one page explanation of the differences between ArrayList and an array in terms of usage, speed, and organization in memory. Include examples of declaration, initialization, and access.

K. Write a paragraph about the importance of using named constants, and how they can be declared and used in Java. Show some examples.

L. Write a one page explanation of the differences between a HashSet and a HashTable, with examples of declaration, initialization, and access.

M. Write a one page explanation of “static” in Java, and its meaning applied to methods and variables. Include examples.