Name 1: _____

Name 2: _____

Worksheet - Lab 6

For "show us" questions, you **must** download the code and upload it to the D2L dropbox. However it is preferred if you also show it to the instructor for grading in class if time permits.

1. What is an algorithm? Can you think of an example from a previous lab?

2. Describe the algorithm that you used to solve to find a number in an unsorted list.

3. If the number of items in the list doubles, how would that change the Worst Case Running Time for `find number in unsorted list`?

4. Describe the binary search algorithm that you used to solve to find a number in an unsorted list.

5. If the number of items doubles, how would that change the Worst Case for `find number in sorted list`?

6. Is it always faster to use a binary search? Why or why not?

7. What is memoization? When is it useful?

8. Explain how you implemented your Non-Gauss and Gauss `Add all numbers in`. Which was faster? Why?

9. For the `Are the numbers of (LIST) distinct?` block. What is the difference between "Worst-Case" and "Best Case" in terms of Runtime?

10. Of all the runtimes you have discovered thus far, can you rank them from "fastest" to "slowest"? Why is runtime important for the programs that we create?