1. Big-O: What is the worst-case time complexity of the following code snippet?

```c
void mysterySort(int a[], int size) {
    for (int i = (size-1); i >= 0; i--) {
        for (int j = 1; j<=i; j++){
            if (a[j-1] > a[j]){ // Ensure brackets are balanced
                int temp = a[j-1];
                a[j-1] = a[j];
                a[j] = temp;
            }
        }
    }
}
```

What type of sort is this?

2. What is the average Big-O time complexity of a Binary Search Algorithm and under what condition(s) does it apply? What is the time complexity for Linear Search? When should you choose one over the other?

3. What are the “Big 3” and when should you include them in your class definitions?
   a) In what 3 situations is a copy constructor automatically called?
   
   b) Explain, through words or a picture, the difference between shallow copy and deep copy. Comment on some potential issues that can occur when shallow copy is performed on dynamic member variables (pointers).
   
   c) What does the keyword “this” represent in C++? Provide a short example of how to use it inside a member function.

4. Take 2-3 minutes to discuss with those around you about any confusion regarding Assignment 4 and the Final Project. What topics are you uncomfortable with? What should Philip focus on for next week to help?