**1) What are the return types of the sumAll methods?**

The return type of sumAll methods is an Integer.

**2) What relation must be true between lengths of arr and max for the second version of sumAll to work correctly?**

The relation between the two is that the length of the array must equal the max if not it wont return the output.

**3) What are the return types of the squareSum methods?**

The return types of the squareSum methods is Long and the Integer.

**4) What is the use of init(arr) call before calling squareSum(arr, 5)?**

This calls on the method “init” and sets the whole array equal to zero so that we may use the “long[] arr” array again.

**5) What are the return types of the fib methods?**

The return types of the fib methods are a Long array named arr, and an Integer value named max.

**6) Why does Fibonacci output start at 2?**

Due to the loop taking the previous two values and adding them together. If you were to start from zero it would give you a compilation error, so in order to avoid this we start at 2.

**7) What are the return types of the factorial methods?**

The return types for the factorial methods are long for the first method, as well as the second method.

**8) Why does Factorial output start at 2?**

It does so in order to not multiply anything by zero. If anything would have been multiplied by zero, then the method would have always printed zero out.

**9) Why is long[] arr = new long[MAXSIZE]; declared as an array of longs?**

The array has the data type “long” so that it can fit the numbers that “int” cannot fit in its data type; long has a wider range than integer does.

**10) Change MAXSIZE to 10. Does everything still work? If not, how can you fix it?**

It does not work. Since the array only has ten spaces, it only calculates up to ten and then has a compilation error. We can do two things:

1) We can set MAXSIZE to 21 so that all the necessary calculations can be done and the program runs the right way.

2) we can change the numbers we are calculating in each method call to fit in the array by making them smaller than ten and no bigger than that.