

## COSC-111 INTRODUCTION TO COMPUTER SCIENCE I PRACTICE FOR MIDTERM 02

1. Provide short answers (at most two sentences each) to the following questions.

1.a What does the instruction `int a = (int) (Math.random() * 10);` do?

1.b How do you create an array `a` of doubles with a length of 15?

1.c What is the return type of the method with the following signature? How many parameters does it take and what are their types?

```
public static double sum(int[] z; double start)
```

2. What is the output when `ArrayPass` is run? What are the values of `q[6]` and of `q[9]`?

```
public class ArrayPass {
    public static void main (String[] args) {
        int[] q = new int[15];
        int i = 0;
        while (i < q.length) {
            q[i] = i * i;
            i = i + 1;
        }
        i = 5;
        moose(i, q);
        System.out.println(i);
        System.out.println(q[i]);
    }

    public static void moose (int i, int[] a) {
        i = i + 1;
        a[i] = a[i] * 2;
    }
}
```

3. Write a method that compares two arrays of `int` to determine whether their contents are identical (i.e., the two arrays contain the same value in each position). It must return `true` if the contents are identical, and `false` otherwise. Its signature should be:

```
public static boolean compare(int[] a, int[] b)
```

4. Write a variant `revInsertionSort` of `insertionSort` that sorts an array `a` of `ints` in *decreasing* order (i.e., after sorting, the first element of the array contains the *largest* value).

5. Modify the code for `merge` to sort the elements in decreasing order.