

Introduction to Computer Science I
Fall 2017

SAMPLE MID-TERM EXAM

1. Provide short answers (one to three sentences) to each of the following questions:
 - (a) What is the difference between *passing/returning* values and *printing/inputting* (from the keyboard) values?
 - (b) When you write Java source code, *for whom* are you writing it? (That is, who is your audience?)
 - (c) Why does Java have *integer* data types? Why not use floating point numbers (e.g., *float* and *double* data types) for everything numeric?

2. What is the output of the following code?

```
int x = -5;
if (x <= -1) {
    x = -x;
}
if ((1 <= x) && (x <= 9)) {
    x = x * 2;
} else if ((10 <= x) && (x <= 19)) {
    x = x * 10;
} else {
    x = x * 1000;
}
System.out.println(x);
```

3. What is the output when `ArrayPass` is run?

```
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;
    }
}
```

4. Write a method named `printRhombus` that, when passed a size (in this example, 5), prints the following rhombic pattern:

```
.....
.....
.....
.....
.....
```

5. Write a method that compares two arrays of `int` to determine whether their contents are identical. It must return `true` if the contents are identical, and `false` otherwise. It's signature should be:

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