Introduction to Computer Science I
Sample mid-term exam

1. Provide short answers (one to three sentences) to each of the following questions:
   (a) If a Java program compiles with no errors, is it then guaranteed to run correctly? Justify your answer.
   (b) Consider the following declaration: `int[] x;`
   What, specifically, is in the space named `x`?
   (c) What, in Java, is an *expression*?

2. Complete this *truth table* of Java's Boolean logic operators:

`a`	`b`	`a && b`	`a || b`	`a == b`	`a != b`
F	*F*	*F*	*F*		
F	*T*	*F*	*T*		
T	*F*	*F*	*T*		
T	*T*	*T*	*T*		

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

```
\         /
 \       /
  \     /
   \   /
    \ /
```

4. Complete the following method such that it changes the given array of `char` by changing all lowercase letters into uppercase ones. [Hint: Recall that each character is really a number, internally, and that the characters `A` to `Z` are represented with 26 values in a row, as are characters `a` to `z` by a different 26 contiguous numbers. You do **not** need to know what those specific numeric values are.]

```
public static void toUpperCase (char[] msg)
```

5. What is the output of this program, `Conditionals`, when it is run?

```
public class Conditionals {

    public static void main (String[] args) {
        foo(-5);
        bar(-5);
    }

    public static void foo (int x) {
        if (x < 0) {
            System.out.println("Message 1: " + x);
            x = -x;
        }
        if (x >= 0) {
            System.out.println("Message 2:" + x);
            x = -x;
        }
        System.out.println("Message 3: " + x);
    }

    public static void bar (int x) {
        if (x < 0) {
            System.out.println("Message A: " + x);
            x = -x;
        } else {
            System.out.println("Message B: " + x);
            x = -x;
        }
        System.out.println("Message C:" + x);
    }

}
```