Name: _____ Andrew Id: _____

15-121 Fall 2022 Quiz 2

Up to 20 minutes. Show your work. No calculators, no notes, no books, no computers, no other people.

1. **Short Answer**

   (a) (2 points) In just a few words, what's the difference between a class and an object?

   (b) (2 points) Write two lines of code to generate a random number between 5 and 15 (inclusive, meaning both 5 and 15 could be chosen) and store it in an integer named `myRand`.

2. (4 points) **Code Tracing:** Indicate what the following program prints. Place your answer (and nothing else) in the box under the code.

```java
public class IncrementorExercise {
        public static void main(String[] args) {
                int a = 3;
                int b = 4;

                System.out.println(--b - --b + a++ - ++b + a++ - b-- - ++b);
                System.out.println(a);
                System.out.println(b);
        }
}
```

.

3. (12 points) **Free Response:** Write the function `sequentialSum` which, given a number range and a target sum, determines if there is a *consecutive* sequence of three numbers that sum to the target. If there is, it prints the three numbers and returns `true`. If there is not, it prints nothing and returns `false`.

Don't forget that the numbers need to be consecutive.

Consider the following three examples:

	Example 1	**Example 2**	**Example 3**
Method Call	sequentialSum(1, 10, 9)	sequentialSum(1, 10, 24)	sequentialSum(1, 10, 27)
Output	2 3 4	7 8 9	
Return Value	true	true	false

```
/**
 * Try to find a consecutive sequence of 3 numbers in range [min,max) that sum
 * to target. If there is such a consecutive sequence, print all three numbers
 * and return true. If there isn't such a consecutive sequence, return false.
 *
 * @param min    The minimum value in the range (inclusive)
 * @param max    The maximum value in the range (exclusive)
 * @param target The value to sum to
 * @return true or false as specified above
 */
public static boolean sequentialSum(int min, int max, int target) {
```