Principles of Software Quiz 1
Jan. 27 10 points total

Question 1. (3 pts) What is printed by the following program:

```
public class Person {
   private String name;

   public Person(String theName) {
      this.name = theName;
   }

   public static void main(String[] args) {
      Person p1 = new Person("Kairen");
      Person p2 = new Person("Kairen");
      Person p3 = p2;

      System.out.println(p1 == p2);
      System.out.println(p2 == p3);
      System.out.println(p1 == p3);
      System.out.println(p1.equals(p2));
      System.out.println(p2.equals(p3));
      System.out.println(p1.equals(p3));
   }
}
```

Question 2. (1 pt) What is printed by the following code fragment:

```
String s1 = "RPI";
String s2 = "RPI";
System.out.println(s1 == s2);
System.out.println(new String("RPI") == new String("RPI"));
```

Question 3. (2 pts) Java uses (circle the correct answer):

(a) the reference model for variables.

(b) the value model for variables.

(c) a mixed model for variables.

Question 4. (1 pt) One difference between C++ pointers and Java reference is that you can do arithmetic with pointers but not with references. Circle the correct answer.

(a) True

(b) False

Question 5. (3 pts) Find the weakest precondition for the following set of statements. Show all intermediate conditions. Simplify your answer as much as possible.

```
{ _____ } // This is the weakest precondition.
x = 0;
{ _____ }
y = x + 1;
{ _____ }
z = y - z;
{ z != 0 }          // This is the postcondition.
```