

CSCI 1990 TEST 3 STUDY GUIDE FALL 2009

CHAPTER 3: USING CLASSES AND OBJECTS

1. What is output by the following?

```
public class Figure03_01
{
    public static void main(String[] args)
    {
        String string1, string2,string3,string4,string5;
        string1="Welcome to Atlanta";
        System.out.println("string1="+string1);
        System.out.println("string1.length()="+string1.length());
        System.out.println("string1.charAt(3)="+string1.charAt(3));
        string2="Welcome to Dallas";
        System.out.println("string2="+string2);
        System.out.println("string1.compareTo(string2)="+string1.compareTo(string2));
        System.out.println("string2.compareTo(string1)="+string2.compareTo(string1));
        string3="Welcome to Atlanta";
        System.out.println("string3="+string3);
        System.out.println("string1.compareTo(string3)="+string1.compareTo(string3));
        string4="welcome to atlanta";
        System.out.println("string4="+string4);
        if (string1==string4)
            System.out.println("string1 equals string4");
        else
            System.out.println("string1 doesn't equal string 4");
        if (string1.equalsIgnoreCase(string4))
            System.out.println("string1 equals string4 ignoring case");
        else
            System.out.println("string1 doesn't equal string4 ignoring case");
        string5=string1.replace("a", "x");
        System.out.println("string5="+string1.replace("a", "x"));
        System.out.println("string1.substring(11, 18)="+string1.substring(11, 18));
        System.out.println("string1.toLowerCase()="+string1.toLowerCase());
        System.out.println("string1.toUpperCase()="+string1.toUpperCase());
    }
}
```

2. Given the declaration:

```
Random r = new Random( );
```

What is output by the following?

- `System.out.println(r.nextInt());`
- `System.out.println(r.nextInt(10));`
- `System.out.println(10+r.nextInt(11));`

- Write a statement to simulate rolling a single die.
- Write a statement to raise x to the 100th power and assign its value to y.
- Write a statement to compute the square root of 5 and assign its value to sr.

Chapter 4: Writing Classes

1. For the Rectangle and RectangleTest (the client) classes, answer the following:
 - a) Write the constructor that initializes length and width to 0.
 - b) Write the method that allows the client to change the width.
 - c) Write the method that allows the client to get the value of width.
 - d) Write the statement in the client that creates a Rectangle object with the initial values from the constructor.
 - e) Write the statement in the client that outputs the width using the “get” method.
 - f) Write the statements in the client to ask the user to input the width and set the value of the width in the Rectangle class to that value.
 - g) Write the method in the Rectangle class to compute and output the area of a Rectangle object.
 - h) Write the statement in the client to compute and output the area of the Rectangle object called r.