1

Boolean operators can seem tricky at first, and it takes practice to evaluate them correctly. Write the value (True or False) produced by each expression below, using the assigned values of the variables a, b, and c. Try to do this without using code, but you should check yourself when you think you've got it. Hint: Work from the inside out, starting with the inner-most expressions, like in arithmetic.

```
a = False
b = True
c = False
```

1. b and c

2. b or c

3. not a and b

4. (a and b) or not c

5. not b and not (a or c)

6. not (not (not b) and not ((a or b) and c))

2

Given the following code that prints, "0":

```
String thisOne = "What is this?";
String thatOne = "What is this?";
System.out.println( thisOne.compareTo( thatOne ) );
```

a. Modify the string(s) so that a value greater than 0 is printed, and explain why that happened.

b. Modify the string(s) so that a value less than 0 is printed, and explain why that happened.

3

Boolean and integer variables and Conditionals. Write a program that begins with three integers, x, y, and z. Define a `boolean` variable `isOrdered` whose value is `true` if the three values are either in strictly ascending order (`x < y < z`) or in strictly descending order (`x > y > z`), and `false` otherwise. Print out the variable `isOrdered` using `System.out.println(isOrdered)`.

x = 10, y = 17, and z = 49
```
true
```

x = 40, y = 30, and z = 12
```
true
```

x = 10, y = 30, and z = 12
```
false
```

4

Pop up a window for a user to enter text. The display should prompt the user to enter their name. For our purposes the code to capture this input should be:

```
import javax.swing.JOptionPane;

String input = JOptionPane.showInputDialog(
    "USER PROMPT");
```

If the user does not enter any text display the error message:
```
No name was entered.
```

If the user enters a name display (using the name they entered):
```
Hello NAME!
```

If the user enters "Dr. Kelley" display:
```
Look how excellent this code is Dr. Kelley!
```

If the user enters 60 characters or more display:
```
That is too long to be a name.
```

Each program must include (in a comment) your name, the date, and the course information. They may contain other comments.