CS1316 Summer 2007 Pre-Quiz 3

A. SHORT ANSWER
   a. What is the difference between FlowLayout and BorderLayout?

   b. What does an ActionListener do? What happens in a GUI without one?

   c. What is the difference between a JTextArea and JTextField?

B. TREE TRAVERSALS ([Interactive tutorial on tree traversals])

1. What is the pre-order traversal of this tree?

2. What is the in-order traversal of this tree?

3. What is the post-order traversal of this tree?
4. What is the pre-order traversal of this tree?

5. What is the in-order traversal of this tree?

6. What is the post-order traversal of this tree?

C. GUI TREES

Consider the following code:

```java
import javax.swing.*;
import java.awt.*;

public class GUITree extends JFrame {
    JButton button1, button2, button3, button4, button5, button6, button7;
    JTextField inputField;

    public GUITree(){
        super("Non-functioning calculator");
        this.getContentPane().setLayout(new BorderLayout());

        button1 = new JButton("+"); button2 = new JButton("-");
        button3 = new JButton("/"); button4 = new JButton("*");
        button5 = new JButton("Clear"); button6 = new JButton("%")
        button7 = new JButton("!"); inputField = new JTextField(10);
    }
}
```
1. What does the GUI look like when we run the line `GUITree tree = new GUITree();` in the Interactions Pane?

2. What does the tree representation of the GUI look like?