1. (2 pts) In order to center text on a Container, we obtain a reference to a `FontMetrics` object associated with a Graphics object, and then use the method `stringWidth` to determine how much horizontal space a String will take up.

2. (2 pts) Suppose we have a reference called button to a JButton object. Suppose the label on the JButton is a number. How can we in one line change the number on the button to its remainder when the number is divided by 50?

   ```java
   button.setText(String.valueOf(Integer.parseInt(button.getText()) % 50));
   ```

3. (2 pts) If a class definition implements the ActionListener interface, it must implement the method `actionPerformed`. What benefit does the class definition get from doing this?

   The class definition can be called an ActionListener

4. (2 pts) In order to detect changes to JCheckBoxes, JRadioButtons, and JComboBoxes, we implement the `ItemListener` interface which contains the method `itemStateChanged`.

5. (2 pts) Filling in the appropriate method name where the ellipses are so that the class definition will compile without error, can you determine whether an even or an odd number will be printed when the button is clicked? Explain your answer.

   ```java
   import java.awt.*;
   import javax.swing.*;
   import java.awt.event.*;
   public class Question5 extends JFrame implements ActionListener {
      private JButton button;
      public Question5(String title) {
         super(title);
         setLayout(new FlowLayout());
         button = new JButton("Press Me");
         add(button);
      }
      public void actionPerformed(ActionEvent e) {
         int number = (int)(100*Math.random());
         System.out.println(number);
      }
      public static void main(String[] args) {
         Question5 question5 = new Question5("Question 5");
         question5.setSize(400,400);
         question5.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
         question5.setLocationRelativeTo(null);
         question5.setVisible(true);
      }
   }
   ```
Neither an odd number nor an even number will be printed. In fact, nothing will be printed. Since we don’t register the class as a listener on the button, the actionPerformed method won’t be called.