1. (2 pts) Java supports a _______________ model of exception handling.

2. (2 pts) When a component is in a JScrollPane, we can call the methods _______________ and _______________ to make sure that the scrollbars are properly updated and there is enough space to see the features in the component.

3. (2 pts) Suppose we have a FileReader wrapped inside a BufferedReader called input. What is printed by the following code segment? Explain.

   ```java
   String temp = "";
   while ((temp = input.readLine()) != null) {
       //
   }
   char[] buffer = new char[5];
   int length = input.read(buffer,0,buffer.length);
   System.out.println(length);
   ```

   4. (2 pts) What is printed by the following code? Explain.

   ```java
   import java.io.*;
   public class Question4 {
       public static void main(String[] args) throws IOException {
           FileWriter file = new FileWriter("temp.data",true);
           PrintWriter output = new PrintWriter(file);
           output.println("Hello");
           output.close();
           file = new FileWriter("temp.data");
           FileReader file1 = new FileReader("temp.data");
           BufferedReader input = new BufferedReader(file1);
           String temp = "";
           while ((temp = input.readLine()) != null) {
               System.out.println(temp);
               input.close();
           }
       }
   }
   ```

5. (2 pts) Assume that we have a class definition which contains a BufferedReader called input. What is the potential problem with the following code segment? How can we fix it?

   ```java
   char[] characters = new char[0];
   char[] buffer = new char[4000*1024];
   int length = 0;
   while ((length = input.read(buffer,0,buffer.length)) != -1) {
       char[] temp = new char[length+buffer.length];
       System.arraycopy(characters,0,temp,characters.length);
       System.arraycopy(buffer,0,temp,characters.length,buffer.length);
       characters = temp;
   }
   ```

   **Hint:** What is the size of characters if the file that the BufferedReader is reading from contains 9000*1024 characters?