Name: ______________________________

1. [5 pts] Suppose the user ran the program at right and typed what is in boldface below.

? Java Programming

What would the program then print?

```java
import csbsju.cs150.*;
public class Mystery {
    public static void run() {
        IOWindow io = new IOWindow();
        io.print("? ");
        String str = io.readLine();
        String a = str.substring(5, 9);
        String b = str.substring(1, 3);
        io.println(a + b);
    }
}
```

2. [5 pts] Suppose the user ran the program at right and typed what is in boldface below.

2
4
1
3
5

What would the program then print?

```java
import csbsju.cs150.*;
public class Mystery {
    public static void run() {
        IOWindow io = new IOWindow();
        int[] a = new int[5];
        int i = 0;
        while(i < 5) {
            a[i] = io.readInt();
            i++;
        }
        i = 0;
        while(i < 5) {
            i = a[i];
            io.println(i);
        }
    }
}
```

3. [10 pts] Complete the program at right so that it reads two lines from the user and displays either “same” or “different” depending on whether they are the same. For example, a user typing the program should see the following, assuming the user types what is in boldface.

? First
? Second
different

```java
import csbsju.cs150.*;
public class SameDifferent {
    public static void run() {
        IOWindow io = new IOWindow();
        String first = io.readLine();
        String second = io.readLine();
        if (first.equals(second) && first.length() != 0) {
            io.println("same");
        } else {
            io.println("different");
        }
    }
}
```
4. [10 pts] Suppose the first \( j \) elements of an array are in increasing order. In the gap of the Java code below, write Java code to shift up all elements of the array more than \( t \) one spot, and insert \( t \) in the blank spot.

```java
int j = 1;
while(j < a.length) {
    double t = a[j];
    j++;
}
```
Solutions, Quiz 4, CSCI 150, Fall 2003

Statistics

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>mean</td>
<td>18.435 (424.000/23)</td>
</tr>
<tr>
<td>stddev</td>
<td>5.999</td>
</tr>
<tr>
<td>median</td>
<td>19.000</td>
</tr>
<tr>
<td>midrange</td>
<td>13.750-22.250</td>
</tr>
</tbody>
</table>

#1. 3.65 / 5
#2. 2.52 / 5
#3. 8.43 / 10
#4. 2.83 / 10
+ 1-point bonus

1. Progav

2. 

3. 

4. 

```java
import csbsju.cs150.*;

public class SameDifferent {
    public static void run() {
        IOWindow io = new IOWindow();
        io.println("?");
        String a = io.readLine();
        io.println("?");
        String b = io.readLine();
        if(a.equals(b)) {
            io.println("same");
        } else {
            io.println("different");
        }
    }
}
```

```
int j = 1;
while(j < a.length) {
    double t = a[j];
    int i = j;
    while(i > 0 & a[i - 1] > t) {
        a[i] = a[i - 1];
        i--;
        a[i] = t;
    }
    j++;
}
```