CIS 121 - Quiz 12 - Wednesday, July 14, 2004

Name: ____________________________  J Number: ____________________________

1. (2 pts) A __________________________ can be thought of as an array of bytes stored in an external file, and we can skip to any point in that array by using the method __________________________.

2. (2 pts) What are the elements in the data hierarchy?

3. (2 pts) What are three properties of a well-defined recursive method?

4. (2 pts) Suppose we have a Vector with the elements “alison” “lost” “the” “race” stored in positions 0, 1, 2, and 3. Given how the methods size(), elementAt(int), setElementAt(Object,int), and insertElementAt(Object,int) work, and that the Vector is referred to by v, use any combination of these methods to change the Vector so that the word “amazing” is between “the” and “race”.

5. (2 pts) Recalling the operations defined on stacks, and that there is a class called Stack in java.util that implements these operations, how many times will the word “Hello” be printed by the following code? Explain.

```java
import java.io.*;
import java.util.*;
public class Question5 {
    public static void main(String[] args) {
        Stack stack = new Stack();
        for (int counter=0; counter<200; counter++)
            stack.push(counter + "n");
        while (!stack.isEmpty())
            System.out.println(stack.peek());
        System.out.println("Hello");
    }
}
```