

Pencil and Paper Assignment for Lesson 4

_____ 1. What happens when the following is compiled/run?

```
class MyClass {
    public static void main(String[] args) {
        new MyClass();
    }
    MyClass() {
        recurse("Hello");
    }
    String recurse(String s){
        if(s==null) return null;
        int r = RandomNumbers.getRandomInt();
        int n = s.length();
        if(r % 2 == 0)
            return recurse(s.substring(0,n/2));
        else {
            return recurse(s.substring(n/2,n));
        }
    }
}
```

- a. Compiler error
- b. Returns a null value
- c. NullPointerException
- d. StackOverflowError

Explain your answer

_____ 2. What happens when the following is compiled/run? You may assume that the method permute is implemented correctly elsewhere, and that it has the effect of randomly rearranging the characters of a String (for instance, on different runs of permute with input “events”, the return values could be, for example, “evtsen”, “eestnv” and “evenst”).

```
class MyClass {
    public static void main(String[] args) {
        new MyClass();
    }
    MyClass() {
        recurse("Hello");
    }
    String recurse(String s){
        if(s==null || s.equals("")) return "";
        int n = s.length();
        String t = permute(s); //rearrange characters of s
        return recurse(t);
    }
}
```

```
    }  
}
```

- a. Compiler error
- b. Returns a null value
- c. NullPointerException
- d. StackOverflowError

Explain your answer