Pencil and Paper Assignment for Lesson 7

_____ 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