1. Consider the two files below. Counter.java allows you to keep a count of anything you wish. UseCounter.java is a simulation of 100 cards which either have a heart or a diamond on them.

(1) (40 pts) Complete the code in UseCounter.java for the blanks labeled A-D so that it correctly uses the Counter objects to complete this simulation.

(a) A) ____________________
(b) B) ____________________
(c) C) ____________________
(d) D) ____________________

(2) (10 pts) Write a constructor for the Counter.java class which takes a single integer parameter and allows the user to start counting at the value of that integer.

(3) (10 pts) After you add the constructor you wrote in Question 2 to the Counter.java file, the UseCounter.java file will no longer compile. You will get the following error:
UseCounter.java:4: cannot find symbol
symbol : constructor Counter() location: class Counter
Counter headCount = new Counter();

Explain why you now get this error now (after adding the constructor from Question 2) but it previously compiled correctly.

2. Show the printout of the following code  
   (a) (20 pts)

```java
public class Test {
    public static void main(String[] args) {
        T t = new T();
        swap(t);
        System.out.println("el = " + t.el + " e2 = " + t.e2);
    }

    public static void swap(T t) {
        int temp = t.el;
        t.el = t.e2;
        t.e2 = temp;
    }
}

class T {
    int el = 1;
    int e2 = 2;
}
```

(b) (20 pts)

```java
public class Test {
    public static void main(String[] args) {
        T t1 = new T();
        T t2 = new T();
        System.out.println("t1's i = " + t1.i + " and j = " + t1.j);
        System.out.println("t2's i = " + t2.i + " and j = " + t2.j);
    }
}

class T {
    static int i = 0;
    int j = 0;

    T0 {
        i++;
        j = 1;
    }
}
```