

Part I: Testing and Debugging [10 points]

(1.1)[2 points] You are given the following classes:

```

class A_inherit
{
    private int x;
    public A_inherit()
    {
        x=0;
    }
    public A (int x)
    {
        this.x = x;
    }
}

class B extends A_inherit
{
    private int y;
    public B (int y)
    {
        this.y = y;
    }
}

```

What is wrong with the above code (if any)? If there is any error, how do fix it?

(1.2)[2 points] What is wrong with the code (if any)? If there is any error, how do fix it?

Given the following class definition:

```

public class Vehicle{
    public void drive(double miles) { ... }
}

public class Car extends Vehicle{
    private void drive(double miles) { ... }}

```

Why won't this subclass compile?

(1.3) [2 points] What is wrong with the code (if any)? If there is any error, how do fix it?

```

class A {
    abstract int m(int x);
}

```

(1.4) [2 points] What is wrong with the above code (if any)? If there is any error, how do fix it?

```

class A {
    int m(int x){
        return x+1;
    }
    double m(int y){
        return y-1;
    }
}

```

Part II: Tracing [8 points] [Show all the work-your thought process to get full credit]

2a. (2 points) what is the output? (Explain your reasoning)

```
class InheritTest{

public static void main(String[] args){

A_inherit2 b=new B();
A_inherit2 c=new C();
System.out.println(b.toString());
System.out.println(c.toString());

}

}

class A_inherit2 {

public String toString(){
return "x= "+getX();
}

int getX()
{return defaultX;}
int defaultX=0;
}

class B extends A_inherit2 {
int getX(){return x1;}
int x1=1;
}

class C extends B{

int getX(){return x2;}
int x2=2;
}

}
```

Answer:

2b. (3 points) what is the output? (Explain your reasoning)

```
class A{
public String m(){ return "A";}
}

class B extends A{
public String m(){return "B";}
}

class C extends B{}

class D extends A{}

class Test{
public static void main(String[] args){
B b = new B();
A a =b;
System.out.println(a.m()+b.m());
A c =new C();
System.out.println(c.m()+b.m());
A d =new D();
System.out.println(d.m()+b.m());
}}

Answer:
```

2c. (3 points) The following program supposed to print the statement "Alive" on RCX's LED every 2 seconds until I press the bumper sensor (i.e., bumper is attached to port 2). It's not working. Fix it.

```
import javax.platform.rcx.*;

public class PrintTest {

public static void main (String[] args) throws
Exception {

Sensor.S1.setAndType(1, 0x20);
Sensor.S1.activate();

TextLCD.print("I am alive");

}

}
```