Solutions to Sample JAC444 Midterm Test 1 -2015

A. Theory (2 marks)

What are the differences between `this` and `this()` ?
`this() constructor invocation from another constructor - must be the first line of the constructor`
`this - reference to the current object`

B. Code – Understanding 12 marks = 3 questions * 4 marks

1. Read the following Java program. Does it compile? If it does not, explain what the errors are. If the code compiles, write the output

```java
class Value {
    public int i = 2;
}

public class MyInteger {

    public static void main(String argv[]) {
        MyInteger mine = new MyInteger();
        mine.up();
    }

    public void up() {
        int i = 4;
        Value v = new Value();
        v.i = 9;
        down(v, i);
        System.out.print(" " + v.i);
    }

    public void down(Value v, int i) {
        i = 3;
        v.i = 5;
        Value val = new Value();
        v = val;
        System.out.print(i + " " + v.i);
    }
}
```

It compiles and the output is: 3 2 5

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2. Read the following Java program. Does it compile? If it does not, explain what the errors are. If the code compiles, write the output

```java
interface Second<T> {
   public void m(T t);
}

public class When {
   public static void main(String[] args) {
      final int i = 5;
      Second<String> second = s -> System.out.println('y' - 'x' + s + i);
      second.m("X");
   }
}
```

It compiles and the output is: 1X5

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3. Read the following Java program. Does it compile? If it does not, explain what the errors are. If the code compiles, write the output

```java
abstract class Fruit {
      abstract public void name();
      public float price() {
            return 0.0;
      }
}
public class Apple extends Fruit {
      public static void main(String argv[]) {
            Apple e = new Apple();
            e.name();
      }

      public void name() {
            System.out.println("Honeycrips");
      }

      public float price() {
            return 10.0f;
      }
}
```

The Java program does not compile

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Errors: cannot convert double to float at return 0.0;