

AP COMPUTER SCIENCE A – STATIC VERSUS NON-STATIC VARIABLES

1) Type in class StaticTest as listed.

```
public class StaticTest {  
    /**/  
    private static int staticInt = 1;  
    private int nonStaticInt;  
    /**/  
    public StaticTest () {  
        nonStaticInt=1;  
    }  
    /**/  
    public void incrementNonStatic () {  
        ++nonStaticInt;  
    }  
    /**/  
    public int getNonStatic () {  
        return nonStaticInt;  
    }  
    /**/  
    public static void incrementStatic () {  
        ++staticInt;  
    }  
    /**/  
    public static int getStatic () {  
        return staticInt;  
    }  
}
```

2) Type in and run class TestStatic, which uses StaticTest.

```
public class TestStatic {  
    /**/  
    public static void main ( String [] arg ) {  
        /**/  
        StaticTest a, b;  
        /**/  
        a=new StaticTest();  
        a.incrementNonStatic();  
        StaticTest.incrementStatic();  
        /**/  
        b=new StaticTest();  
        b.incrementNonStatic();  
        StaticTest.incrementStatic();  
        /**/  
        System.out.println();  
        System.out.println( "a nonStaticInt = " + a.getNonStatic() );  
        System.out.println( "b nonStaticInt = " + b.getNonStatic() );  
        System.out.println( "      staticInt = " + StaticTest.getStatic() );  
        /**/  
        return;  
    }  
}
```

The output should be

```
a nonStaticInt = 2  
b nonStaticInt = 2  
      staticInt = 3
```

3) Explain why the output is what it is.