**[BoxingDemo.java]**

1. Case I output:

Case I: obj1 = 1000; obj2 = 1000;

The two objects are NOT equal in memory.

Explanation: Both values of Integer objects referenced by *obj1* and *obj2* created through autoboxing are not within [-128, 127], therefore *obj1* and *obj2* point to different objects.

1. Case I output:

Case II: obj1 = obj2 = 1000;

The two objects are equal in memory.

Explanation: *obj1 = obj2 = 1000* makes *obj1* and *obj2* both point to the same object with value 1000.

1. Case III output:

Case III: obj1 = 100; obj2 = 100;

The two objects are equal in memory.

Explanation: The object referenced by *obj1* is cached with a value within [-128, 127], which is used when *obj2* is created, therefore both references point to the same object.

1. Case IV output:

Case IV: obj1 = new Integer(100); obj2 = new Integer(100);

The two objects are NOT equal in memory.

Explanation: the *new* statement create two different objects referenced by *obj1* and *obj2* respectively, therefore they are not equal in memory.

**[BoxingIncrementDemo.java]**

1. Case I output:

Case I: obj1 = 100; obj2 = 101; obj1++;

obj1 == obj2

Explanation: The object referenced by *obj2* is cached with a value within [-128, 127], which is used when *ob1++* is executed, therefore both references point to the same object.

1. Case II output:

Case II: obj1 = 1000; obj2 = 1001; obj1++;

obj1 =/= obj2

Explanation: Both values of Integer objects referenced by *obj1* and *obj2* created through autoboxing are not within [-128, 127], therefore *obj1* and *obj2* point to different objects.

1. Case III output:

Case III: obj1 = obj2 = 1000; obj1++; obj1--;

obj1 =/= obj2

Explanation: When *obj1++* and *obj1--* is executed, a new object is created with the value beyond [-128, 127], therefore *obj1* no longer points to the same object of *obj2*.

1. Case IV output:

Case IV: obj1 = 100; obj2 = new Integer(101); obj1++;

obj1 =/= obj2

Explanation: The object referenced by *obj2* is created by *new* statement, therefore it points to a different object from *obj1*