This quiz is to be taken **by yourself** with closed books, closed notes, no calculators.

### (Partial) Operator Precedence Table

<table>
<thead>
<tr>
<th>Operators</th>
<th>Associativity</th>
</tr>
</thead>
<tbody>
<tr>
<td>* / %</td>
<td>left to right</td>
</tr>
<tr>
<td>+ -</td>
<td>left to right</td>
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<tr>
<td>&lt; &lt;= &gt; &gt;=</td>
<td>left to right</td>
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<tr>
<td>== !=</td>
<td>left to right</td>
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<tr>
<td>&amp;&amp;</td>
<td>left to right</td>
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<td></td>
<td></td>
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<tr>
<td>=</td>
<td>right to left</td>
</tr>
</tbody>
</table>

1) What are the values of x, y, z (left) and a, b, c (right) after the following code segments are executed?

```java
int x = 3, y = 6, z = 0;
if ( ++x >= 4 || y-- >= 7 )
    z = ++x + y--;  // x = 4, y = 5, z = 6
else
    z = x++ + --y; // x = 4, y = 5, z = 7
```

```java
int a = 5, b = 8, c = 0;
if ( ++a >= 6 && b-- >= 9 )
    c = ++a + b--; // a = 7, b = 7, c = 8
else
    c = a++ + --b; // a = 7, b = 7, c = 8
```

<table>
<thead>
<tr>
<th>x</th>
<th>y</th>
<th>z</th>
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<td></td>
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2) What is the equivalent Java expression for the following expression such that no **!** operators are used?

```java
!( a == 4 || b > -13 )
```

3) Assume we have defined `public class Test` and it uses at least one class in the objectdraw library which we have copied into the current working directory.

Write the full Unix command to compile this Java class.

```bash
This command will produce a file named:
```

```bash
Write the full Unix command to run the above program as a Java application.
```

```bash
Assume we have correctly written a Test.html file in the same directory with the above files. Write the full Unix command to run the above program as an applet.
```

```bash
```
4) Assume a program had the following definitions (a Point has an x and a y value):

```java
Point p1 = new Point( 42, 420 );
Point p2 = new Point( p1 );
Point p3 = p2;
```

What results would be produced by evaluating the following expressions?

```
p1 == p2 ____________  p1 == p3 ____________  p2 == p3 ____________  
p1.equals(p2) ____________  p1.equals(p3) _________ ___  p2.equals(p3) ____________  
p1.translate(1, 1); // Add 1 to the x and y coordinates in the Point object ref'ed by p1  
p1.equals(p2) ____________  p1.equals(p3) _________ ___  p2.equals(p3) ____________  
p2.translate(1, 1); // Add 1 to the x and y coordinates in the Point object ref'ed by p2  
p1.equals(p2) ____________  p1.equals(p3) _________ ___  p2.equals(p3) ____________  
p3.translate(1, 1); // Add 1 to the x and y coordinates in the Point object ref'ed by p3  
p1.equals(p2) ____________  p1.equals(p3) _________ ___  p2.equals(p3) ____________  
```

5) What output is produced with the following code fragment? Assume `method1()` is invoked as

```java
Quiz2 q2 = new Quiz2();
q2.method1( 19 );
```

```java
public class Quiz2 {
    private int a;       // Line 3
    public void method1( int x )
    {
        int a;       // Line 7
        int b = x;

        a = b % 5;
        this.a = b / 3;

        System.out.println( "a = " + a );
        System.out.println( "b = " + b );
        System.out.println( "this.a = " + this.a );
        System.out.println( "method2() result = " + method2( x ) );
        System.out.println( "a = " + a );
        System.out.println( "b = " + b );
        System.out.println( "this.a = " + this.a );
    }  

    private int method2( int x )
    {
        int a = x;
        int b = this.a;

        b = b * 2;

        System.out.println( "a = " + a );
        System.out.println( "b = " + b );
        System.out.println( "this.a = " + this.a );

        this.a = b + 3;

        return a + 3;
    }  
}
```

What is the initial value of `a` on Line 3? ______________

What is the initial value of `a` on Line 7? ______________

Output:
```
a = __________
b = __________
this.a = __________
a = __________
b = __________
this.a = __________
method2() result = __________
a = __________
b = __________
this.a = __________
```