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

(Partial) Operator Precedence Table

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

Using the operator precedence table above, evaluate each expression and state what gets printed.

```java
int a = -1, b = 2, c = 8;
boolean exp1 = b - a != c;    _________ (value of exp1)
boolean exp2 = a + b * c < a + c * b;  _________ (value of exp2)
boolean exp3 = !(c + a >= b);   _________ (value of exp3)
boolean exp4 = true || false && !false;  _________ (value of exp4)
boolean exp5 = true && false || false;  _________ (value of exp5)
```

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

```java
int a = 5, b = 4, c = 3;
System.out.println( a + (b + c) + " = " + (a + b) + c ); ________________________________
System.out.println( a + b + (c + " = ") + a + (b + c) ); ________________________________
System.out.println( (a + b) + c + " = "+ a + b + c );   ________________________________
c = a + b;
b = 7;
System.out.println( "c = " + c );    c = ______
```

What gets printed with each of the following statements?

```java
int a = 8, b = 5, c = 0;
if ( --a <= 8 || b++ >= 4 )
c = a++ + --b;
else
c = ++a + b--;
```

What value is produced by evaluating the following expressions?

```java
s1 == s2 ____________  s1 == s3 ____________  s2 == s3 ____________  s1.equals(s3)__________
s2.equals(s3)__________  s3.equals("Hello") ____________
```
What gets printed when this program is run?

```java
public class Loops {
    public static void main( String[] args ) {
        final int MAX = 8, MIN = 6;
        int i = -2, j = -3;
        for ( i = MAX; i > MIN; --i ) {
            j = 7;
            while ( j <= MAX ) {
                System.out.println( i + " " + j ); // space between i and j
                ++j;
            }
            System.out.println( i + " " + j ); // space between i and j
        }
    }
}
```

What gets printed when this program is run?

```java
public class Trace {
    public static void main( String[] args ) {
        System.out.println( "main1" );
        foo1();
        System.out.println( "main2" );
        foo2();
        System.out.println( "main3" );
        foo3();
    }

    public static void foo1() {
        System.out.println( "A" );
        foo3();
        System.out.println( "B" );
    }

    public static void foo2() {
        System.out.println( "C" );
    }

    public static void foo3() {
        System.out.println( "D" );
        foo2();
        System.out.println( "E" );
    }
}
```

What gets printed when this program is run?

```java
public class Change {
    public static void main( String[] args ) {
        int a = 7;
        int b = 13;
        change( b, a );
        System.out.println( a + " " + b ); // space between a and b
    }

    public static void change( int a, int b ) {
        System.out.println( a + " " + b ); // space between a and b
        a = 22;
        b = 44;
        System.out.println( a + " " + b ); // space between a and b
    }
}
```