Signature _____ **CSE 11 Quiz 2 Fall 2013** **Name** _____

cs11f ____ **Student ID** _____

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

(Partial) Operator Precedence Table

Operators				Associativity
!	++	-- (pre & post inc/dec)		right to left
*	/	%		left to right
+	-			left to right
<	<=	>	>=	left to right
==	!=			left to right
&&				left to right
||				left to right
=				right to left

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

```
int x = 6, y = 3, z = 0;

if ( --x > 5 && y++ > 3 )
  z = ++x + y--;
else
  z = x++ + --y;
```

x =
y =
z =

```
int a = 8, b = 5, c = 0;

if ( ++a <= 8 || b-- >= 4 )
  c = a++ + --b;
else
  c = ++a + b--;
```

a =
b =
c =

2) What is the equivalent Java expression for the following expression such that no `!` operators are used? (`!=` is a different operator than `!`)

```
!( x != 17 || y > 3 )
```

_____

3) You are asked to test the TwoSmallest program that was part of PA2. The only input values you are allowed to use are 0, 1, 2, 3, and 4. Two values have already been entered: 1 and 3. Based on this information, what effect will each of the following additional inputs have on the current state of the variables `smallest` and `secondSmallest`? For each input value, assume the user has already entered 1 and 3, and now enters just this one additional input. Answer for 0. Then start over with just 1 and 3 entered, and answer for 1. Then start over with just 1 and 3 entered, and answer for 2. And so on …

After 1 and 3 are entered, what effect would be tested with each input:

Next input	Effect tested
0	_____
1	_____
2	_____
3	_____
4	_____

A) smallest assigned to secondSmallest; input becomes new smallest
B) input assigned to secondSmallest; smallest unchanged
C) no change to either smallest or secondSmallest
D) secondSmallest assigned to smallest; input becomes new secondSmallest
E) input assigned to smallest; secondSmallest unchanged

4) Assume a program had the following definitions (Point has an x and a y value with proper equals() defined):

```
Point p1 = new Point( 37, 23 );
Point p2 = p1;
Point p3 = new Point( 37, 23 );
```

What results would be produced by evaluating the following expressions (left to right; top to bottom)?

```
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

```
Quiz2 q2 = new Quiz2();
q2.method1( 13 );
```

```
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 % 5;

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

  private int method2( int x )
  {
    int a = x;
    int b = this.a;
    x = 99;

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

    this.a = 37;
    b = 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 = __________
x = __________
a = __________
b = __________
this.a = __________
x = __________
method2() result = __________
a = __________
b = __________
this.a = __________
x = __________
```