This quiz is to be taken **<u>by yourself</u>** with closed books, closed notes, no electronic devices. Write your answers on the answer sheet!

(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

Problem 1 (3 pts): Using the operator precedence table above, state the values of each of the following expressions.

```
int x = 8, y= 4, z = 2;

a. boolean exp1 = x == z * z + 1;
b. boolean exp2 = !(x / z > y) && (y * z >= x);
c. boolean exp3 = false || true && !false;
```

Problem 2 (2 pts): What gets printed with each of the following statements?

```
int a = 5, b = 2 , c = 0;
```

   A. `System.out.println( "Statement 1 is: " + a + (b + c) + " = " + (a + b) + c );`

   B. `System.out.println( a + b + (c + " = ") + a + (b + c) );`

Problem 3 (4 pts): What gets printed when the following program is run?

```java
public class MyArray
{
  public static void main( String[] args ) {
    int [] a = {12, 5, -13};
    for(int i=0; i< a.length; i++)
    {
      int min = i;
      for(int j=i; j<a.length; j++)
      {
        if(a[j] < a[min])
        {
          min = j;
        }
      }

      swap(a, i, min);
      System.out.print(a[i] + ", ");
    }
  }

  public static void swap(int[] a, int i, int j)
  {
    int temp = a[i];
      a[i] = a[j];
      a[j] = temp;
  }
}
```

Problem 4 (4 pts): What gets printed when this program is run?

```java
public class Trace {
  public static void main( String[] args ) {

    int[] index = {1, 3, 1, 2};
    int i = index.length - 1;
    while( i >= 0 )
    {
      bar(index[i]);
      i--;
    }
  }

  public static void bar(int i) {
    if(i == 1)
    {
      bar1();
      System.out.print("-");
    }
    else if(i == 2)
    {
      bar2();
      System.out.print("-");
    }
    else
    {
      bar3();
      System.out.print("-");
    }
  }

  public static void bar1() {
    System.out.print( "A" );
  }

  public static void bar2() {
    System.out.print( "J" );
  }

  public static void bar3() {
    System.out.print( "V" );
  }
}
```

Problem 5 (3 pts): What are the results of following expressions?

```java
String s1 = "Good Luck";
String s2 = "Good Morning";
String s3 = "Good Luck";

    a.  boolean ans1 = s3.contains(s2.substring(0, 5));
    b.  char ans2 = s2.charAt(5);
    c.  boolean ans3 = s1 == s3;
```

Problem 6 (3 pts): What are the values of a, b, c after the following code segments are executed?

```java
int a = 10, b = 20, c = 0;

if ( --a <= 10 && b++ >= 20 )
   c = c++ + --b - a--;
else
   c = ++c + ++a + b++;
```