MACS 261J
1st Midterm Exam
February 13, 2009 **Name:** _____

Question:	1	2	3	4	5	6	7	8	9	10	Total
Points:	5	2	4	5	3	4	4	7	6	10	50
Score:											

Question 1 . . . . . (5 points)

What is printed by the following Java statements?

```
int x = 4 * 5 % 4 - 2 - 3;
System.out.println("x="+x);
int n = 5;
++n; System.out.println("n="+n);
--n; System.out.println("n="+n);
```

Question 2 . . . . . (2 points)

Modify only one of the Java statements below so that this code will compile.

```
float f = 2.3;
double d = 3.2f;
```

Question 3 . . . . . (4 points)

What is printed by the following Java statement?

```
System.out.println("Hello"+""+"world\n"+"Goodbye");
```

Question 4 . . . . . (5 points)

Write a single Java statement that will set a `boolean` variable `danger` to `true`, if `speed` is greater than `65` and `visibility` is less than `50`; or `false`, otherwise.

Question 5 . . . . . (3 points)

Write a single Java statement that defines a named constant for the number of days in one week.

Question 6 ..... (4 points)

What is printed by the following Java statements?

```
int count = 0;
while (count<5) {
  System.out.println(count);
  ++count;
}
```

Question 7 ..... (4 points)

Rewrite (simplify) the code fragment in the previous question using a `for` loop.

Question 8 ..... (7 points)

What is printed by the following program fragment?

```
int i;
for (i=0; i<=4; ++i)
  System.out.print(i);
for (i=0; i>4; ++i)
  System.out.print(i);
for (i=4; i>0; --i)
  System.out.print(i);
for (i=4; i>0; --i); // a programming error?
  System.out.print(i);
```

Question 9 ..... (6 points)

Complete the following Java method.

```
/**
 * Computes and returns the sum 1*1 + 2*2 + 3*3 + ... + n*n.
 * @param n a positive integer.
 * @return the sum.
 */
  public static int sumOfSquares(int n) {









  }
```

Question 10 ..... (10 points)

Complete the following class, which models a pump at a gas station:

```
public class GasPump {

  // Rate at which fuel can be pumped.
  public static final double GALLONS_PER_SECOND = 0.1;

  // Constructs a new gas pump with specified parameters.
  GasPump(double gallonsAvailable, double dollarsPerGallon) {



  }

  // Resets to zero the cost and number of gallons pumped.
  public void reset() {


  }

  // Pumps gas for the specified number of seconds or until out of gas.
  public void pump(double seconds) {







  }

  // Determines whether fuel is available at this pump.
  public boolean hasFuel() {

  }

  // Prints the number of gallons pumped and the cost in dollars.
  public void printReceipt() {


  }

  // Declare all required private fields here.



}
```