Review Assignment 02
Submission Deadline 11:59 PM, Sunday, February 5th
Total 45 points

Instruction.

1. **Download the assignment sheet.**
2. **Enter your answer.**
3. **Upload your answer sheet.**

Question 1. Math functions (2 point each = 16 points total)
For each of the 8 System.out.println statements, state the output that each generates. Choose from "1", "1.0", "0.0", and "something else".

```
System.out.println( Math.sin( Math.PI ) ); // no.1
System.out.println( Math.cos( 0.0 ) ); // no.2
System.out.println( Math.log( Math.E ) ); // no.3
System.out.println( Math.exp( 0.0 ) ); // no.4
System.out.println( Math.round( 0.9 ) ); // no.5
System.out.println( Math.floor( 1.9 ) ); // no.6
System.out.println( Math.pow( 2.0, 2.0 ) ); // no.7
System.out.println( Math.abs( -1.0 ) ); // no.8
```

1. 0.0
2. 1.0
3. 1.0
4. 1.0
5. 1.0
6. 1.0
7. Something else
8. 1.0

Question 2. Math.random() (3 points). What are the values that the formula

```
(int)(Math.random()*10)+1
```

may generate? Select one from the following choices:

1. The integers between 0 and 11.
2. The integers between 1 and 11.
3. The integers between 1 and 10.
4. The integers between 0 and 10.

Your answer: 3

Question 3. Method calls (5 points). Suppose that the following two methods appear in a Java class. State the output the program generates.

```
public static int calculate( int a ) {
  a += 3;
  return a;
}
public static void main( String[] args ) {
  int a, b;
  a = 9;
  b = calculate(a);
  System.out.println( a + ":" + b );
}
```

Your answer: 9: 12

Question 4. Method calls (5 points). Suppose the following two methods are part of a Java class. Given the prompt "Enter input: ", the user has entered "hello world csc 120" and then hit return. State the output generated by the program after "Here is what you have entered".

```
public static String readOne( Scanner in ) {
  String w = in.next();
  return w;
}
public static void main( String[] args ) {
  Scanner myInput = new Scanner( System.in );
  String u, v;
  System.out.print( "Enter input: " );
  u = readOne( myInput );
  v = myInput.next();
  System.out.println( "Here is what you have entered." );
  System.out.println( u + ":" + v );
}
```

Your answer: hello: world

Question 5. Method overloading (2 points each, 8 points total). Suppose you have written a method `mystery()` with the header

```
public static String mystery( String x, int y )
```

According to the concept of method overloading, state, for each one of the method declarations, whether it is compatible with the original.

```
1. public static int mystery( String y, int z )
2. public static String mystery( int a, String w )
3. public static String mystery( String u, String v )
4. public static String mystery( string s, double d )
```

1. Not compatible
2. Compatible
3. Compatible
4. Compatible

Question 6. Formatting (2 points each, 8 points total). For each of the four formatting String, select its most accurate meaning.

1. "%10s"
2. "%5.2f"
3. "%%%n"
4. "%4d"

a. An integer in 10 spaces
b. An integer in 4 spaces
c. Three percent signs and the letter n
d. Two percent signs and the letter n
e. One percent sign and then the "newline"
f. A real number with exactly 2 digits after the decimal point
g. A real number with exactly 5 digits after the decimal point
h. A real number in 5 spaces with 2 digits after the decimal point
i. A string in 10 spaces
j. A string in 4 spaces

1. i
2. h
3. e
4. b