Review Assignment 04
Submission Deadline 11:59 PM, Sunday, February 12th
Total 45 points

Instruction.

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

Question 1. Methods that employ if-else (16 points).
Answer the questions about the method `mycalc()` presented next.

```
01: public static int mycalc( double x, double y ) {
02:   if ( x >= 0 && y >= 0 ) {
03:     return -2;
04:   }
05:   else if ( x < 0 && y < 0 ) {
06:     return 0;
07:   }
08:   else if ( x >= 0 ) {
09:     return 2;
10:   }
11:   else {
12:     return 4;
13:  }
14: }
```

1. (1 point each; 3 points altogether) There are three "else" appearing in the code. For each one of the stated below, answer whether it can be removed without changing the input-output relation of the method.
    a. Line 05: If it were removed, all cases where x and y are less than 0 would return 4 instead of 0.
    b. Line 08: If it were removed, all cases where x is positive and y is negative would return 0 instead of 2
    c. Line 11: If it were removed, all cases where x is negative and y is positive would not have a block of code to execute or a value to return, causing an error
2. (2 points each, 8 points altogether) State the return value of the method for each of the combinations of x and y.
    a. (2.4, 0.0): -2
    b. (1.1, -2.0): 2
    c. (-3.3, 0.0): 4
    d. (-2.5, -1.0): 0

3. (2 points) Will changing the condition in Line 08 to (x >= 0 && y < 0) alter the input-output relation of the method? Answer yes or no. Yes
4. (3 points) Will changing the condition in Line 08 to (x >= 0 || y < 0) alter the input-output relation of the method? Answer yes or no. Yes

Question 2. Preparation for the Lab (6 points).

1. (3 points) Let `value1`, `value2`, `value3`, and `value4` be four `double` variables whose values are already given. Let `theMin` be another double variable. Write a statement for computing the minimum of the four values using `Math.min()` and assigning it to `theMin`.

Your answer here: double theMin = Math.min();

2. (3 points) Let `value1`, `value2`, and `value3` be three `double` variables whose values are already given. Let `theMin` be another double variable. Write a statement for computing the minimum of the threevalues using `Math.min()` and assigning it to `theMin`.

Your answer here: double theMin = Math.min(Math.min(value1, value2), Math.min(value2, value3));

Question 3. Switch statement (23 points). Consider the following `switch` statement, where `ch` is a `char` variable.

```
01: String answer;
02: answer = "abc";
03: switch ( ch ) {
04:  case 'a':
05:     answer += "012";
06:     break;
07:  case 'b':
08:  case 'c':
09:    answer += "345";
10:    break;
11:  case 'd':
12:    answer = "my" + answer;
13:  default:
14:    answer = "today" + answer;
15: }
16: System.out.println( answer );
```

1. (3 points each; 15 points total) State the output generated in Line 16 with the following values for `ch`:
    a. ‘a’: abc012
    b. ‘b’: abc
    c. ‘c’: abc345
    d. ‘d’: myabc
    e. ‘e’: todayabc
2. (8 points) Lines 03-16 can be written using the if-else construct instead of the switch construct. Write below an equivalent version with an “if” followed by two “else-if”s and then an “else”.

```
String answer;
answer = “abc”;
if (ch == ‘a’){
        answer += “012”;
}
else if (ch == ‘c’){
        answer += “345”;
}
else if (ch == ‘d’){
        answer = “my” + answer
}
else {
        answer = “today” + answer;
}

System.out.println(answer);
```