Assignment 3
(Due date: Friday, 3/13/2009 in class)

Your name:	Score:

Create a folder with the name of "CSC201J_A3" and create one subfolder for each of the following projects (subfolder name should look like "A3_1", "A3_2"…

- **Save your work under the appropriate folder/subfolders.**
- **Compress the folder into a ZIP file and send it to the instructor.**

1. Write an application that displays the following patterns separately, one below the other. Use for loops to generate the patterns. All asterisks (*) should be printed by a single statement of the form System.out.print('*'); which causes the asterisks to print side by side. A statement of the form System.out.println();can be used to move to the next line. A statement of the form System.out.print(' '); can be used to display a space for the last two patterns. There should be no other output statements in the program. [Hint: The last two patterns require that each line begin with an appropriate number of blank spaces.]

```
(a)          (b)          (c)          (d)

*            **********   **********             *
**           *********    *********             **
***          ********     ********             ***
****         *******      *******             ****
*****        ******       ******             *****
******       *****        *****             ******
*******      ****         ****             *******
********     ***          ***             ********
*********    **           **             *********
**********   *            *             **********
```

- **Write two classes: TriangleTest (with main()) and Triangles (to produce these patterns).**

2. One interesting application of computers is to display graphs and bar charts. Write an application that reads five numbers between 1 and 30. For each number that is read, your program should display the same number of adjacent asterisks. For example, if your program reads the number 7, it should display *******.

- **Write two classes: GraphsTest (with main()) and Graphs (to produce these patterns).**
- **You need to use switch…case…statement.**

3. Write an application that prints the following diamond shape. You may use output statements that print a single asterisk (*), a single space or a single newline character. Maximize your use of repetition (with nested for statements), and minimize the number of output statements.

- **Write two classes: DiamondTest (with main()) and Diamond (to produce these patterns).**

4. Modify the application you wrote in the above (Q3) to read an odd number in the range 1 to 19 to specify the number of rows in the diamond. Your program should then display a diamond of the appropriate size.

- **Write two classes: DiamondTest (with main()) and Diamond (to produce these patterns).**