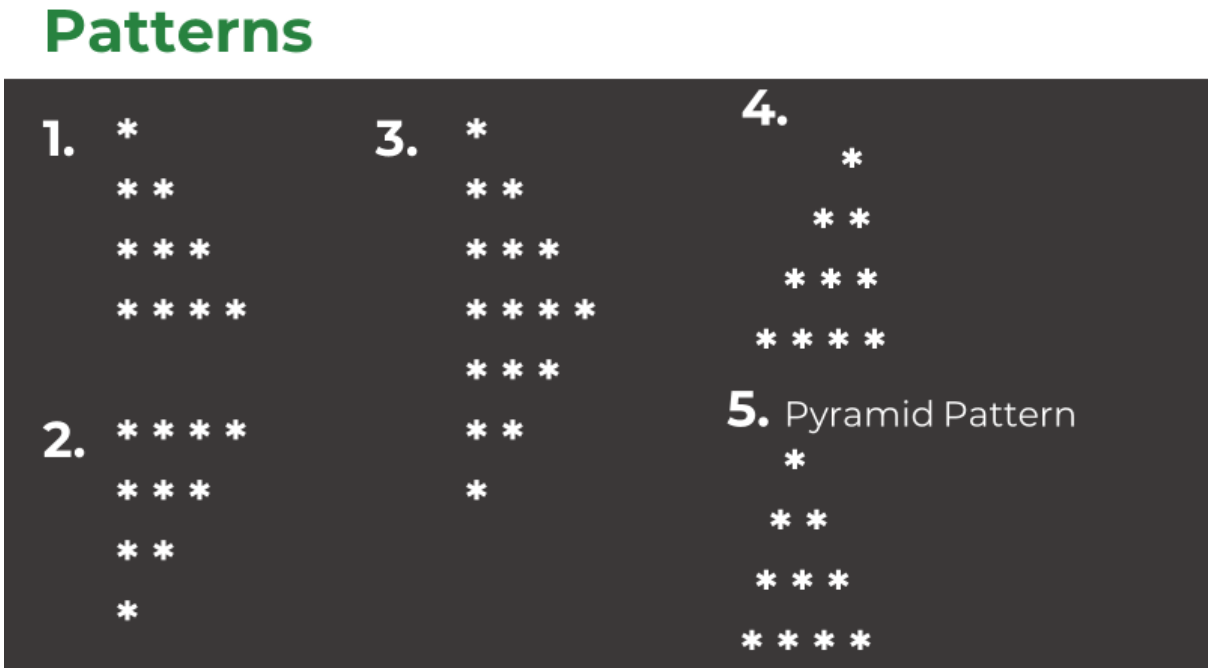
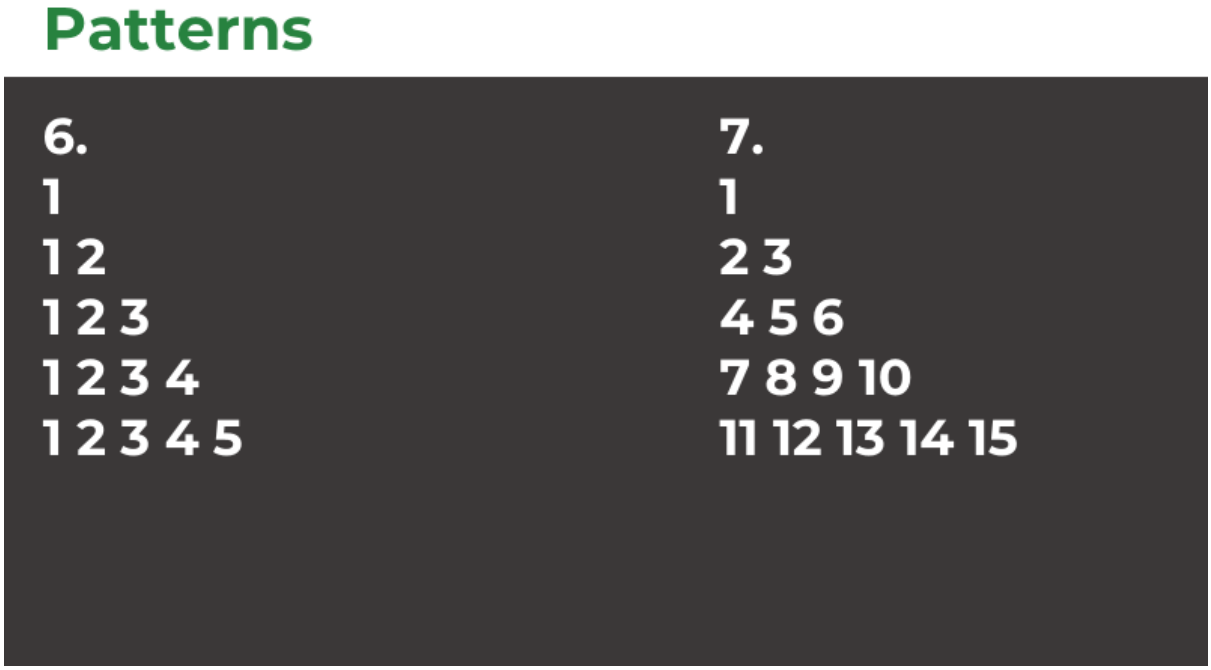
PATTERNS ASSIGNMENT

1. Print the 7 patterns in shown below.





You can print all the patterns in a single class file with 2 spaces between each of the patterns and submit the same.

2. Artistic Pattern [In a separate file]

In this assignment, you are to write a program that will print an ASCII art drawing of a diamond. You should exactly reproduce the format of the output samples below. This includes having identical characters and spacing. One way to write a Java program to draw this figure would be to write a println statement that prints each line of the figure. However, this solution would not receive full credit. A major part of this assignment is showing that you understand **for loops and if** statements.

Here are four sample outputs of the program, with diamonds of size 1, 2, 4, and 7 respectively.

Sample outputs:

```
Size 1:
+---+
|<>|
+---+

Size 2:
+-----+
| /\ |
|<-->|
| \/ |
+-----+

Size 4:
+---------+
|    /\   |
|   /--\  |
|  /====\ |
|<------>|
| \====/ |
|  \--/  |
|   \/   |
+---------+

Size 7:
+---------------+
|       /\      |
|      /--\     |
|     /====\    |
|    /------\   |
|   /========\  |
|  /----------\ |
|<============>|
| \----------/ |
|  \========/  |
|   \------/   |
|    \====/    |
|     \--/     |
|      \/      |
+---------------+
```

Besides the top and bottom of the picture frame, each line of the diagram consists of the following:

1. The left side of the picture frame, followed by
2. Some number of spaces (including zero spaces on the line in the center), followed by
3. A forward slash '/' if on the top half of the diamond or a back slash '\' if on the bottom half of the diamond, or a left angle bracket '<' if at the center of the diamond, followed by
4. Some number of hyphens '-' or equal signs '=' depending upon whether it was an even or odd line, followed by
5. A back slash '\' if on the top half of the diamond or a forward slash '/' if on the bottom half of the diamond, or a right angle bracket '>' if at the center of the diamond, followed by
6. Some number of spaces, followed by

7. The right side of the picture frame.

Each and every line of the diagram should end with a newline character. Be sure not to have any blank spaces before or after each line of the diagram. Be sure not to have any extra blank lines before or after the diagram.

On any given execution, your program will produce just one version of the figure. However, you should refer to the variable size throughout your code, so that when a user enters a different value, your program would produce a figure of a different size. Your program should scale correctly for any size value of 1 or greater.

Use of for-loops: This program is intended to test your knowledge of for-loops and conditionals. Some code will need to test whether you are printing an even numbered line or an odd numbered line. You can use the modulo division operator '%' and test the remainder after division by two.