Applied Coding - Language Skill
(Repetitions-Nested Loops)

Solve the following problems using computer with help of Python/C++/Java/C# language as means of communication.

Problem 1: Right Triangular Pattern

Given the value of n, write a program that displays the following pattern. For the given value of 4 for n, the pattern looks like this:

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

Problem 2: Left Triangular Pattern

Given the value of n, write a program that displays the following pattern. For the given value of 4 for n, the pattern looks like this:

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

Problem 3: Downward Right Triangular Pattern

Given the value of n, write a program that displays the following pattern. For the given value of 4 for n, the pattern looks like this:

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

Problem 4: Downward Left Triangular Pattern

Given the value of n, write a program that displays the following pattern. For the given value of 4 for n, the pattern looks like this:

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

Problem 5: Pyramid Pattern

Given the value of n, write a program that displays the following pattern. For the given value of 4 for n, the pattern looks like this:

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

Problem 6: Inverted Pyramid Pattern

Given the value of n, write a program that displays the following pattern. For the given value of 4 for n, the pattern looks like this:

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

Problem 7: Diamond Pattern

Given the value of n, write a program that displays the following pattern. For the given value of 4 for n, the pattern looks like this:

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

Problem 8: Sandglass Pattern

Given the value of n, write a program that displays the following pattern. For the given value of 4 for n, the pattern looks like this:

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

Problem 9: Multiplication Table

In this exercise you will create a program that displays a multiplication table that shows the products of all combinations of integers from 1 times 1 up to and including 10 times 10. Your multiplication table should include a row of labels across the top of it containing the numbers 1 through 10. It should also include labels down the left side consisting of the numbers 1 through 10. The expected output from the program is shown below:

```
    1   2   3   4   5   6   7   8   9  10
 1  1   2   3   4   5   6   7   8   9  10
 2  2   4   6   8  10  12  14  16  18  20
 3  3   6   9  12  15  18  21  24  27  30
 4  4   8  12  16  20  24  28  32  36  40
 5  5  10  15  20  25  30  35  40  45  50
 6  6  12  18  24  30  36  42  48  54  60
 7  7  14  21  28  35  42  49  56  63  70
 8  8  16  24  32  40  48  56  64  72  80
 9  9  18  27  36  45  54  63  72  81  90
10 10  20  30  40  50  60  70  80  90 100
```