PATTERNS

1. Shown below is a Floyd's triangle:

```
1
2 3
4 5 6
7 8 9 10
11. . . . . 15
.
79 . . . . . 91
```

2. Write a program to produce the following output.

```
                1
            1       1
        1       2       1
    1       3       3       1
1       4       6       4       1
```

3. Write a program to produce the following output (for n =7):

```
A B C D E F G F E D C B A
A B C D E F   F E D C B A
A B C D E       E D C B A
A B C D           D C B A
A B C               C B A
A B                   B A
A                       A
```

4. Write a code to print pascals triangle.

```
1
1       1
1       2       1
1       3       3       1
1       4       6       4       1
```

5. Given an integer n, generate a square matrix filled with elements 1 to n^2 in spiral order. Example: given n = 3.

```
1   2   3
4   5   6
7   8   9
```

Output: 1 2 3 6 9 8 7 4 5 **[JP MORGAN][AMAZON][GOOGLE]**

Given n*n square matrix, return an array of its anti-diagonals. Example: INPUT: 1 2 3 / 4 5 6 / 7 8 9 Output: 1 / 2 4 / 3 5 7 / 6 8 / 9 **[AMAZON]**

6. The string "RAMANCLASSES" is written in a zigzag pattern on a given number of rows like this:

```
R       N       S
 A   A   C   A   S   S
   M       L       E
```

[PAYPAL]

And then read line by line: RNSAACASSMLE. Write the code that will make string and this conversion given a number of rows:

For the above example rows are 3. For number of rows = 2.

```
R       M       N       L       S       E
  A       A       C       A       S       S
```

Which will be read as: RMNLSEAACASS. Your output should be only this final string.