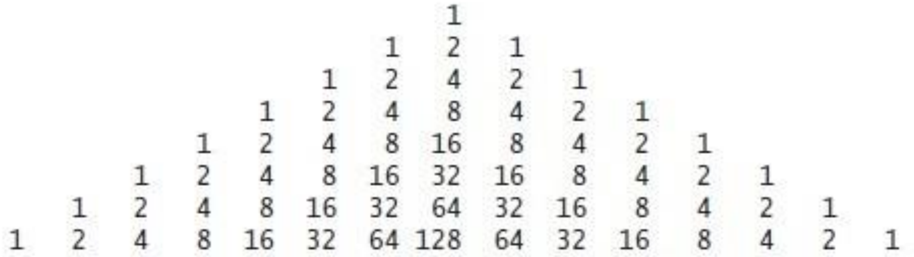
Part 3

1. Write a program to display the pattern of numbers given as follows:

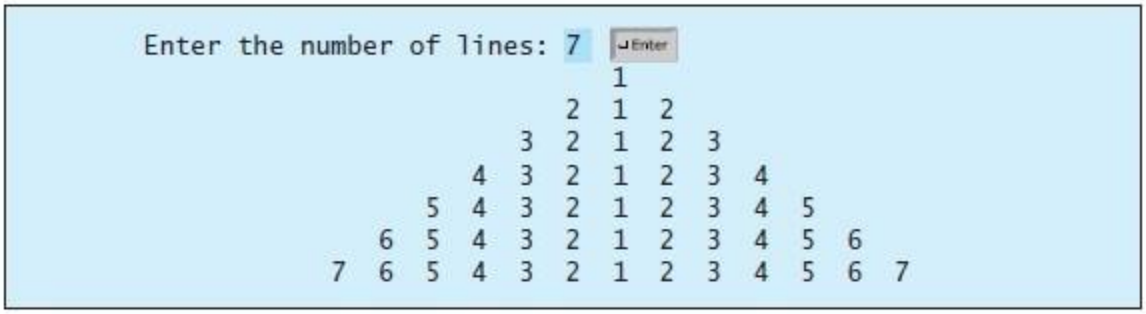
```
1
1 2
1 2 3
1 2 3 4
1 2 3
1 2
1
```

2. Write a program to display the pattern of numbers given as follows:



```
                               1
                           1   2   1
                       1   2   4   2   1
                   1   2   4   8   4   2   1
               1   2   4   8  16   8   4   2   1
           1   2   4   8  16  32  16   8   4   2   1
       1   2   4   8  16  32  64  32  16   8   4   2   1
   1   2   4   8  16  32  64 128  64  32  16   8   4   2   1
```

3. Write a program to display the pattern of numbers given as follows:



```
Enter the number of lines: 7
                    1
                 2  1  2
              3  2  1  2  3
           4  3  2  1  2  3  4
        5  4  3  2  1  2  3  4  5
     6  5  4  3  2  1  2  3  4  5  6
  7  6  5  4  3  2  1  2  3  4  5  6  7
```

4. An emirp (prime spelled backward) is a nonpalindromic prime number whose reversal is also a prime. For example, both 17 and 71 are prime numbers, so 17 and 71 are emirps. Write a program that displays the first 100 emirps. Display 10 numbers per line and align the numbers properly, as follows:

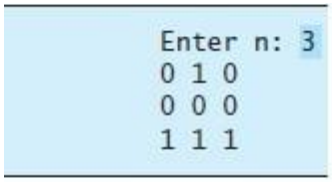
```
13 17 31 37 71 73 79 97 107 113
149 157 167 179 199 311 337 347 359 389
```

5. Write a function that accepts three integers, and returns True if they are sorted, otherwise it returns False.

6. Write a function that displays an n-by-n matrix using the following header:

   def printMatrix(n):

   Each element is 0 or 1, which is generated randomly. Write a test program that prompts the user to enter n and displays an n-by-n matrix.



```
Enter n: 3
0 1 0
0 0 0
1 1 1
```

7. Write a program to play a variation of the game, as follows:

   Roll two dice. Each die has six faces representing values 1, 2, ..., and 6, respectively. Check the sum of the two dice. If the sum is 2, 3, or 12 (called craps), you lose; if the sum is 7 or 11 (called natural), you win; if the sum is another value (i.e., 4, 5, 6, 8, 9, or 10), a point is established. Continue to roll the dice until either a 7 or the same point value is rolled. If 7 is rolled, you lose. Otherwise, you win.
   Run it 10,000 times and display the number of winning games.