1. Write a program to generate a fancy number for a new vehicle considering the following restraints:
   a. The fancy number should have 4-digits.
   b. The sum of these 4-digits should be 12.
   c. The 3rd digit should be equal to the difference between the 1st and the 2nd digit.
   d. The 4th digit should be equal to the sum of the 1st and the 3rd digit.

   The program should be able to generate all the possible 4-digit numbers that meet the above listed criteria.
2. Write a algorithm to accept an integer array (two dimensional) as the parameter and find the min, max, each row, column min and max elements of the given array.

   Input:

   ```
   [[0 1 2 3]
    [3 4 5 5]
    [6 7 8 8]
    [9 0 1 9]]
   ```

   Output:

   ```
   Max:  9
   Min:  0
   Col Wise Min:  [0 0 1 3]
   Col Wise Max:  [9 7 8 9]
   Row Wise Max: [3 5 8 9]
   Row Wise Min:  [0 3 6 0]
   ```

3. From following is timetable:

Mon	Tue	Wed	Thu	Fri	Sat	Sun
3	3	3	3	3	3	0
2	2	2	2	2	1	0
2	2	2	1	1	0	0

   Write an algorithm to find the work hours of the given day.

   Input: Thu

   Output: [3,2,1]

   Input: Sat

   Output: [3,1,0]

4. Write a program to get the vowels and their count in the given string. (Hint: Use filter method.)

   Example:

   Input: quintessential

   Output: ['u', 'i', 'e', 'e', 'i', 'a']; 6

5. Write a program to add the elements of 2 arrays of same dimensions. (Hint: Use map method.)

   Example:

   Input:

   x = [1,2,3,4]

y = [5,6,7,8]
Output:
z = [6,8,10,12]

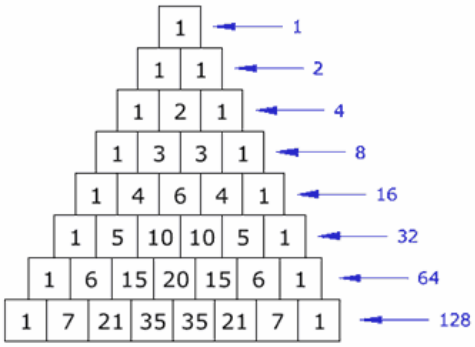
6. Write a program to find the sum of the given elements of the list. (Hint: Use reduce method.)

   Example:
   Input:
   lst = [1, 2, 3, 4, 5, 6, 7, 8, 9]
   Output:
   res_sum = 45

7. Write a program to find the sum of squares of only the even numbers in the given list. (Hint: Use the methods filter, map, reduce.)

   Example:
   Input:
   lst = [1, 2, 3, 4, 5, 6, 7, 8, 9]
   Output:
   120

8. Write a function which implements the Pascal's triangle.



9. Write a program to find those word(s) that occur the maximum and minimum number of times in the given paragraph. Also, display those words next to their respective count.

   Input:
   "Comprehensions are a feature of Python which I would really miss if I ever have to leave it. Comprehensions are constructs that allow sequences to be built from other sequences. Several types of comprehensions are supported in both Python 2 and Python 3."
   Output:
   Word appearing maximum times: abcdefg; x times
   Word appearing minimum times: pqrstuv; y times
   (Where abcdefg, x, pqrstuv, y are all determined by the program logic based on the input.)

10. Write a program to count the number of unique words and the number of occurrences of each of those words.

    Input:
    "how much wood would a woodchuck chuck if the woodchuck could chuck wood"
    Output:
        Number of unique words: x
        abcd: p times
        efgh: q times
        rstu: t times
        (Where x, abcd, p, efgh, q, rstu, t are all determined by the program logic based on the input.)

11. Following are the initials of players who play various games. Some of these players play more than one game.

    Cricket: ["PKM", "ALN", "GLN", "NVR", "PVR", "KM", "VP", "CS", "MCS"]
    Football: ["PKM", "ALN","RMZ","CS", "MCS"]
    Badminton: ["PKM", "ALN", "NV", "KM","RMV"]

    Write a program to:
    a. List those players who play all three games.
    b. List those players who play exactly one game.