**Looping Statements**

**Factorial Number**

Write a program to determine whether n is a factorial number or not. A factorial number is a number that is a factorial of another number.

**Input Format:**

Input consists of a single integer which corresponds to n.

**Output Format:**

Output consists of a string - “yes” or “no”

**Sample Input 1**

6

**Sample Output 1**

yes

**Sample Input 2**

12

**Sample Output 2**

no

**Lucas Sequence**

a = 0, b=0, c=1 are the 1st three terms. All other terms in the Lucas sequence are generated by the sum of their 3 most recent predecessors.

Write a program to generate the first n terms of a Lucas Sequence.

**Input Format:**

Input consists of a single integer which corresponds to n.

**Output Format:**

Output consists of the n terms of the Lucas Sequence, separated by a single space. There are no leading or trailing spaces in the output.

**Sample Input**

5

**Sample Output**

0 0 1 1 2

**Fibonocci Number**

Write a program to determine whether a given number n is a part of the Fibonocci Sequence. [0,1,1,2,3,5...]

**Input Format:**

Input consists of a single integer which corresponds to n.

**Output Format:**

Output consists of a string - “yes” or “no”

**Sample Input 1**

6

**Sample Output 1**

no

**Sample Input 2**

13

**Sample Output 2**

yes

**TRENDY NUMBERS**

A number is said to be a trendy number if and only if it has 3 digits and the middle digit is divisible by 3.

Examples of Trendy Numbers: 131, 264, 999

Examples of NonTrendy Numbers : 123, 653, 33, 4, 1034

Write a  program to find whether a given number is a Trendy Number or not.

**Input Format:**

Input consists of a single integer.

**Output Format:**

Refer sample output for details.

**Sample Input 1:**

791

**Sample Output 1:**

Trendy Number

**Sample Input 2:**

3

**Sample Output 2:**

Not a Trendy Number

**SPECIAL NUMBER**

A 2-digit number is said to be a special number if the sum of the sum of its digits and the products of its digits is equal to the number itself.

For example, 19 is a special number. The digits in 19 are 1 and 9. The sum of the digits is 10 and the product of the digits is 9.

10+9 = 19.

Write a  program to find all special numbers between 2 limits m and n(both inclusive). Assume that m and n are 2-digit numbers.

**Input Format:**

Input consists of 2 integers m and n.

**Output Format:**

Refer Sample Output .

**Sample Input 1:**

11

20

**Sample Output 1:**

19

**TARGET PRACTICE**

Drona normally trains his disciples using a board which consists of concentric circles. When the student correctly hits the center of the concentric circles, his score is 100. The score gets reduced depending on where the students hits on the board. When the student hits outside the board, his score is 0. Drona will not allow a student to have his food unless he scores 100. Arjuna will always hit the target in his first attempt and he will leave early.

Others may take more turns to reach the score of 100.

Can you write a program to determine the number of turns a disciple takes to reach the target score of 'n' ?

**Input Format:**

Input consists of a list of positive integers. The first integer corresponds to the target score 'n'. Assume that all the other integers input are less than or equal to n.

**Output Format:**

Output consists of a single line. Refer sample output for format details.

**Sample Input 1:**

100

4

40

60

**Sample Output 1:**

The number of turns is 3

**Sample Input 2:**

1000

1000

**Sample Output 2:**

The number of turns is 1

**KID'S HOMEWORK**

On the first day of the academic year, the mathematics teacher for the first standard students gives this assignment to her students. Write each number 'I' I number of times in separate lines.

For a first standard student, it is very difficult to interpret this assignment and the kids request you to help them.

When they approached you for help, you were working on a C programming assignment where the faculty has asked you to write a program which involves nested for loops. You realize that the kid's maths assignment is one good example for applying nested for loops and you start coding it.

Can you complete the coding exercise?

Write a program to generate the following pattern

1

2 2

3 3 3

4 4 4 4

5 5 5 5 5

…..

n n n n n...............n

**Input Format:**

Input consists of 1 integer which corresponds to n.

**Output Format:**

Refer sample output for details. [Note: 2 integers on the same line are separated by a space.]

**Sample Input :**

4

**Sample Output:**

1

2 2

3 3 3

4 4 4 4