Loops

A. Print 1 to N

1 second, 256 megabytes

You are given a positive integer n.

Print the integers from 1 to n (inclusive), each on a separate line.

Input
The input contains a single integer n $(1 \le n \le 2 \cdot 10^5)$.

Output
Print n lines. On the i-th line, output the integer i $(1 \le i \le n)$.

input
5
output
1 2 3 4 5

input
2
output
1 2

B. Print N to 1

1 second, 256 megabytes

You are given an integer N. Print all integers from N to 1 in decreasing order.

Input
Print N integers from N to 1, separated by spaces.

Output
Print N integers from N to 1, separated by spaces.

input
5
output
5 4 3 2 1

input
4
output
4 3 2 1

C. Print All Even Numbers from 1 to N

1 second, 256 megabytes

You are given an integer N. Print all even numbers between 1 and N (inclusive) in increasing order.

Input
The first line contains an integer N $(1 \le N \le 10^5)$.

Output
Print all even numbers between 1 and N, separated by spaces.

If there is no even number in the given range, print nothing.

input
10
output
2 4 6 8 10

An integer is even if it is divisible by 2.

D. Print from L to R

1 second, 256 megabytes

You are given two integers L and R. Print all integers from L to R in increasing order.

Input
The first line contains two integers L and R ($-10^5 \le L \le R \le 10^5$).

Output
Print all integers from L to R, separated by spaces.

input
3 7
output
3 4 5 6 7

E. Print All Uppercase Alphabets

1 second, 256 megabytes

Print all uppercase English alphabets from `A` to `Z` using loops.

Input
There is no input for this problem.

Output
Print all uppercase English alphabets from `A` to `Z`, separated by spaces.

input
There is no input.
output
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

F. Print Table of N

1 second, 256 megabytes

You are given an integer N. Your task is to print the multiplication table of N from 1 to 10.

Input
A single integer N $(1 \le N \le 100)$.

Output
Print the table of N in the format shown in the example below.

input
6
output
6 * 1 = 6 6 * 2 = 12 6 * 3 = 18 6 * 4 = 24 6 * 5 = 30 6 * 6 = 36 6 * 7 = 42 6 * 8 = 48 6 * 9 = 54 6 * 10 = 60

G. Count Numbers

1 second, 256 megabytes

You are given an integer N followed by N integers. Count how many of the given numbers are:

- Positive
- Negative
- Even
- Odd

Input
The first line contains an integer N ($1 \le N \le 10^5$).

The second line contains N integers ($-10^9 \le A_i \le 10^9$).

Output
Print four integers in the following order:

- Number of positive integers
- Number of negative integers
- Number of even integers
- Number of odd integers

input
5 -2 0 3 7 -5
output
2 2 2 3

- Zero is neither positive nor negative.
- Zero is considered an even number.

H. Sum of First N Natural Numbers

1 second, 256 megabytes

You are given an integer N. Find the sum:

$$1 + 2 + 3 + \cdots + N$$

Input
The first line contains an integer N ($1 \le N \le 10^6$).

Output
Print a single integer — the sum of the first N natural numbers.

input
5
output
15

input
10
output
55

The first 5 natural numbers are $1, 2, 3, 4,$ and 5, and their sum is 15.

I. Factorial

1 second, 256 megabytes

You are given an integer N. Find the factorial of N, defined as:

$$N! = 1 \times 2 \times 3 \times \cdots \times N$$

Input
The first line contains an integer N ($0 \le N \le 20$).

Output
Print the value of $N!$.

input
5
output
120

input
7
output
5040

- By definition, $0! = 1$.
- The constraint $N \leq 20$ ensures the answer fits in a 64-bit integer.

$$x^n$$

1 second, 256 megabytes

You are given two integers x and n.

Compute:

$$x^n = \underbrace{x \times x \times \cdots \times x}_{n \text{ times}}$$

Input
The first line contains two integers x and n ($-10 \leq x \leq 10$, $0 \leq n \leq 20$).

Output
Print the value of x^n.

input
2 5
output
32

- $x^0 = 1$ for any x.
- The constraints ensure the answer fits in a 64-bit integer.

K. Print Number in Reverse

1 s., 256 MB

Given an integer N, print the digits of N in reverse order.

Input
A single integer N ($0 \leq N \leq 10^18$).

Output
Print the number formed by reversing the digits of N.

input
12349
output
94321

input
1950
output
0591

L. Sum Of Digits

1 second, 256 megabytes

Given an integer N, find the sum of its digits.

Input
A single integer N ($0 \leq N \leq 10^{18}$).

Output
Print the sum of digits of N.

input
1234
output
10

M. Reverse Number and Store in a Variable

1 second, 256 megabytes

You are given a non-negative integer N.

Reverse the digits of N and store the result in a variable.

Input

The first line contains a non-negative integer N ($0 \le N \le 10^9$).

Output

Print the result.

input
1234
output
4321

input
1950
output
591

N. Palindrome

1 second, 256 megabytes

You are given a non-negative integer N. Check whether N is a palindrome or not.

A number is called a palindrome if it reads the same forwards and backwards.

Input

The first line contains a non-negative integer N ($0 \le N \le 10^9$).

Output

Print `YES` if the number is a palindrome, otherwise print `NO`.

input
121
output
YES

input
1950
output
NO