Lab: Arrays and Matrices

Problems for in-class lab for the "JavaScript Essentials" course @ SoftUni. Submit your solutions in the SoftUni judge system at https://judge.softuni.bg/Contests/1464/Lab-Arrays-and-Matrices.

1. Sum First Last

Write a function that calculates and prints the sum of the first and the last elements in an array.

The **input** comes **as array of string elements** holding numbers.

The **output** is the return value of your function.

Example

Input	Output
['20', '30', '40']	60

Input	Output
['5', '10']	15

2. Even Position Element

Write a function that finds the elements at even positions in an array.

The **input** comes as **array of string** elements.

The **output** is the return value of your function. Collect all elements in a string, separated by space.

Examples

Input	Output
['20', '30', '40']	20 40

Input	Output
['5', '10']	5

3. Negative / Positive Numbers

Write a JS function that processes the elements in an array one by one and produces a new array. **Prepend** each **negative** element at the front of the result and **append** each **positive** (or 0) element at the end of the result.

The **input** comes as **array of number elements**.

The **output** is printed on the console, each element on a new line.

Example

Input	Output
[7, -2, 8, 9]	-2 7 8 9

Input	Output
[3, -2, 0, -1]	-1 -2 3 0

4. First and Last K Numbers

Write a function that prints the first **k** and the last **k** elements from an array of numbers.

The **input** comes as **array of number elements**. The **first element** represents the number **k**, all other elements are from the array that needs to be processed.

The **output** is printed on the console on two lines. On the first line print the **first k** elements, separated by space. On the second line print the **last k** elements, separated by space.

Examples

Input	Output
[2, 7, 8, 9]	7 8 8 9

Input	Output
[3, 6, 7, 8, 9]	6 7 8 7 8 9

5. Last K Numbers Sequence

You are given two integers **n** and **k**. Write a JS function that generates and prints the following sequence:

- The first element is 1
- Every following element equals the **sum** of the previous **k** elements
- The length of the sequence is **n** elements

The **input** comes as **two number arguments**. The first element represents the number **n**, and the second – the number **k**.

The **output** is printed on the console on a single line, separated by space.

Example

Input	Output
6, 3	1 1 2 4 7 13

Input	Output
8, 2	1 1 2 3 5 8 13 21

Explanation

The 2nd element (1) is the sum of the 3 elements before it, but there is only 1, so we take that. The third element is the sum of the first 2 (1 and 1) and the 4th – the sum of 1, 1 and 2. The 5th element is the sum of the 2nd, 3rd and 4th (1, 2 and 4) and so on.

6. Process Odd Numbers

You are given an array of numbers. Write a JS function that prints the elements at odd positions from the array, doubled and in reverse order.

The **input** comes as **array of number elements**.

The **output** is printed on the console on a single line, separated by space.

Example

Input	Output
[10, 15, 20, 25]	50 30

Input	Output
[3, 0, 10, 4, 7, 3]	6 8 0

7. Smallest Two Numbers

Write a function that prints the two smallest elements from an array of numbers.

The **input** comes as **array of number elements**.

The **output** is printed on the console on a single line, separated by space.

Example

Input	Output
[30, 15, 50, 5]	5 15

Input	Output
[3, 0, 10, 4, 7, 3]	0 3

8. Biggest Element

Write a function that finds the biggest element inside a matrix.

The **input** comes as **array of arrays**, containing number elements (2D matrix of numbers).

The **output** is the return value of your function. Find the biggest element and return it.

Examples

Input	Output
[[20, 50, 10], [8, 33, 145]]	145

Input	Output
[[3, 5, 7, 12], [-1, 4, 33, 2], [8, 3, 0, 4]]	33

9. Diagonal Sums

A square matrix of numbers comes as an array of strings, each string holding numbers (space separated). Write a function that finds the sum at the main and at the secondary diagonals.

The **input** comes as **array of arrays**, containing number elements (2D matrix of numbers).

The **output** is printed on the console, on a single line separated by space. First print the sum at the main diagonal, then the sum at the secondary diagonal.

Example

Input	Output
[[20, 40], [10, 60]]	80 50

Input	Output
[[3, 5, 17], [-1, 7, 14], [1, -8, 89]]	99 25

10. Equal Neighbors

Write a function that finds the number of equal neighbor pairs inside a matrix of variable size and type (numbers or strings).

The **input** comes as **array of arrays**, containing string elements (2D matrix of strings).

The **output** is return value of you function. Save the number of equal pairs you find and return it.

Example

Input	Output
[['2', '3', '4', '7', '0'], ['4', '0', '5', '3', '4'], ['2', '3', '5', '4', '2'], ['9', '8', '7', '5', '4']]	1

Input	Output
[['test', 'yes', 'yo', 'ho'], ['well', 'done', 'yo', '6'], ['not', 'done', 'yet', '5']]	2