C++ Fundamentals – Exam (17 November 2019)

Write C++ code for solving the tasks on the following pages.

Code should compile under the C++11 standard.

Submit your solutions here:
https://judge.softuni.bg/Contests/1751/CPlusPlus-Fundamentals-Exam-17-November-2019

Only source code will be accepted as solution for each task.

Task 2 – Square Manipulator

Your task is to write a program, which for a given rectangle of numbers performs calculations for smaller squares(with given size) within that rectangle.

For each small square, in which the sum of numbers constructing it **exceeds some given value** - output the **average number** for that square.

The **average number** for a square is calculated by the sum of all the numbers constructing it divided by the count of the numbers.

NOTE: the result should be **rounded down** to the **nearest integer**.

Since they may be more than one small squares that fulfill the requirements you should **output** all of their **averages** in **sorted ascending order** divided by a **whitespace**.

Example input:
> 3 2 (rectangle height and rectangle width)
  0 2
  6 4
  5 -1
> Square side: 2
> Target sum: 7

Example output:

3 3

Explanation:

Both squares **0 2** and **6 4** fulfill the requirements(their sum is bigger than target sum 7) and should be processed.
6 4 **5 -1**
0 + 2 + 6 + 4 = 12 / 4 = **3**
6 + 4 + 5 – 1 = 14 / 4 = **3**
They are sorted in ascending order and the output is "**3 3**"

Input

First read two integers (Rows) and (Cols) indicating the size of the input rectangle.

Next read (Rows) **lines** of **whitespace** separated integers. Each row should contain exactly (Cols) integers.

On the last line read two integers (squareSize and targetSum).

Restrictions

Time limit: 250ms (0.25s)
Memory limit: 16 MB

Examples

Input	Output
3 2 0 2 6 4 5 -1 2 7	3 3
3 3 1 2 3 4 5 6 7 8 9 1 6	6 7 8 9
3 4 9 2 4 6 9 5 3 1 9 5 7 9 3 41	4 5