



Notice

For all tasks:

- There is an attachment package that you can download from the contest system.
- The attachment package contains sample graders, sample implementations, example test cases, and compile scripts.
- You may make up to 50 submissions for each task, and you have to submit exactly one file in each submission.
- The name of the file that you should submit is given in the task statement header. It should implement the procedures described in the task statement using the signatures provided in the sample implementations.
- You are free to implement other procedures.
- Your submissions must not read from the standard input, write to the standard output, or interact with any other file. However, they may output to the standard error stream.
- When testing your programs with the sample grader, your input should match the format and constraints from the task statement, otherwise, unspecified behaviors may occur.
- In sample grader inputs, every two consecutive tokens on a line are separated by a single space, unless another format is explicitly specified.
- When you test your code in your local machine, we recommend you to use scripts in the attachment package. Otherwise, especially in C++, make sure to add `-std=gnu++14` option to compile.

Conventions

The task statements specify signatures using generic type names `int`, `int64`, `int[]` (array), and `int[][]` (2D array).

In each of the supported programming languages, the graders use appropriate data types or implementations, as listed below:

Language	<code>int</code>	<code>int64</code>	<code>int[]</code>	length of array <code>a</code>
C++	<code>int</code>	<code>long long</code>	<code>std::vector<int></code>	<code>a.size()</code>
Java	<code>int</code>	<code>long</code>	<code>int[]</code>	<code>a.length</code>

A 2D array is a non-empty array of arrays of the same length.

Language	<code>int[][]</code>	#rows in 2D array a	#columns in 2D array a
C++	<code>std::vector<std::vector<int>></code>	<code>a.size()</code>	<code>a[0].size()</code>
Java	<code>int[][]</code>	<code>a.length</code>	<code>a[0].length</code>

Limits

Task	Time limit	Memory limit
shoes	1 sec	256 MB
split	2 sec	256 MB
rect	5 sec	1024 MB