# C++ Advanced – Judge Assignment 2

Please be mindful of the strict input and output requirements for each task, as well as any additional requirements on running time, used memory, etc., as the tasks are evaluated automatically and not following the requirements strictly may result in your program’s output being evaluated as incorrect, even if the program’s logic is mostly correct.

You can use C++03 and C++11 features in your code.

## Modulated Sum

You are given several integer arrays with equal length, as well as an integer modulo. Calculate a weighted sum array, equal in length to those arrays, by summing the arrays together (each element is summed with the elements of the other arrays at that index) and modulating them by the given value – i. e. each value in the result should be the remainder of the sum of the matching elements in the input arrays, divided by the modulo.

That is, if the input arrays are arr1, arr2, …, arrN, and the modulo is mod, then then for the result array:

result[i] = (arr1[i] + arr2[i] + … + arrN[i]) % mod

### Input

The first line of the input contains two integers – N and M.

Each of the following N lines contains M integer numbers – the elements of the input arrays.

The next lines each contain a single integer number – modulo (mod).

### Output

A single line, containing M integer numbers, separated by single spaces – the modulated sum array.

### Restrictions

0 < N < 100;

0 < M < 100;

Elements in the input arrays are integer numbers between -100 and 100 (inclusive).

Modulo is a number between 10 and 100 (inclusive).

The total running time of your program should be no more than 0.1s

The total memory allowed for use by your program is 5MB

### Example I/O

|  |  |
| --- | --- |
| Example Input | Expected Output |
| 3 4  1 2 3 4  1 2 3 4  5 6 7 8  10 | 7 0 3 6 |
| 4 2  -1 0  2 12  7 -42  13 13  2 | 1 1 |