北京大学 PEKING UNIVERSITY

JUDGE ONLINE FOR ACM/ICPC

Language: Default

Sequence

Time Limit: 6000MS **Memory Limit:** 65536K

Total Submissions: 9776 **Accepted:** 3252

Description

Given m sequences, each contains n non-negative integer. Now we may select one number from each sequence to form a sequence with m integers. It's clear that we may get n ^ m this kind of sequences. Then we can calculate the sum of numbers in each sequence, and get n ^ m values. What we need is the smallest n sums. Could you help us?

Input

The first line is an integer T, which shows the number of test cases, and then T test cases follow. The first line of each case contains two integers m, n (0 < m <= 100, 0 < n <= 2000). The following m lines indicate the m sequence respectively. No integer in the sequence is greater than 10000.

Output

For each test case, print a line with the smallest n sums in increasing order, which is separated by a space.

Sample Input

```
1
2 3
1 2 3
2 2 3
```

Sample Output

```
3 3 4
```

Source

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Any problem, Please Contact Administrator