

8286 Kiwis vs Kangaroos II

Last year's feud between the Kiwis and the Kangaroos is still ongoing. Somehow, the word game did not seem to squash the rivalry that has formed between them! Again, they have turned to you to settle this.

You have decided that you will hold a head-to-head programming tournament. Each country, Australia and New Zealand, will send some number of programmers (not necessarily the same number) to compete in the tournament. The programmers from Australia are called 'kangaroos', and the programmers from New Zealand are called 'kiwis'. You have set up n stadiums to hold the tournament. The tournament will take place in n separate rounds.

In each round, n different kangaroos will battle against n different kiwis, with one kangaroo battling one kiwi in each stadium (n battles per round, so n^2 battles in total). To keep things interesting for the spectators, no programmer may battle in any given stadium more than once, though they may battle against the same opponent multiple times in different rounds.

The king of the kangaroos has nominated m kangaroos. The i -th kangaroo must fight in exactly t_i different battles. Similarly, the queen of the kiwis has nominated k kiwis. The i -th kiwi must fight in exactly s_i battles.

Find a valid tournament schedule that satisfies the above constraints.

Input

The input file contains several test cases, each of them as described below.

The first line of input contains three integers n ($1 \leq n \leq 200$), which is the number of stadiums and rounds, m ($n \leq m \leq n^2$), which is the number of kangaroos, and k ($n \leq k \leq n^2$), which is the number of kiwis.

The second line contains m integers t_1, \dots, t_m ($1 \leq t_i \leq n$), which are the number of battles each of the kangaroos should compete in. The third line contains k integers s_1, \dots, s_k ($1 \leq s_i \leq n$), which are the number of battles each of the kiwis should compete in. It is guaranteed that $t_1 + \dots + t_m = n^2$ and $s_1 + \dots + s_k = n^2$.

Output

For each test case, display a valid schedule.

The schedule should be displayed over n lines. The i -th line is the schedule for round i . Each line must contain n battles. Each battle must be of the form avb , where a is the kangaroo in the battle and b is the kiwi in the battle (v is just the character 'v'). The kangaroos are numbered $1, \dots, m$ and the kiwis are numbered $1, \dots, k$. The first battle listed on each line is the battle in stadium 1, the second battle listed on each line is the battle in stadium 2, and so on. See the sample output for clarity.

If there are multiple solutions, any one will be considered correct. It is guaranteed that at least one valid schedule exists.



Source: Pixabay

Sample Input

```
2 2 2
2 2
2 2
2 4 3
1 1 1 1
1 2 1
4 5 6
4 3 3 3 3
4 3 3 3 2 1
```

Sample Output

```
1v2 2v1
2v1 1v2
1v1 2v2
3v2 4v3
3v2 4v1 5v6 1v3
1v3 3v4 2v1 5v2
4v1 5v2 1v4 2v5
2v4 1v3 3v5 4v1
```