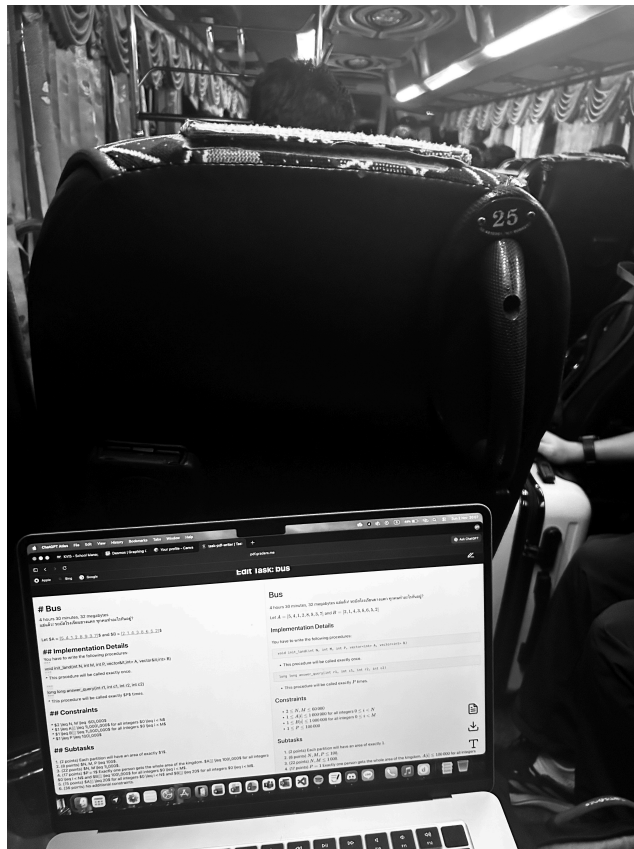




# Bus

Oh No! KVIS School Bus tire went flat, What are you guys doing?

Everyone wants to go to the toilet, so lets help the teachers to find the way to allow every students to return to KVIS ASAP.



After 1.5 hours, KVIS is notified about this matter and they recieved the report that there are  $N$  people in the bus which the tire went flat  $K$  kilometers from the school. For each of them, they have the value  $T_i$  which means that the person  $i$  needs to go to the toilet within  $T_i$  minute(s), all van in KVIS is currently at KVIS.

We currently have  $V$  vans, each of them can have  $A_i$  passengers maximum and can drive with the speed of  $B_i$  minutes per kilometers.

## Implementation Details

You should implement the following procedure:

Find the way that allow all people to go to the toilet on time. If no way exists, output  $-1$ .



# Input

The input consists of **four lines**:

- The first line contains three integers  $N$ ,  $K$  and  $V$   
— the number of people in the bus, the number of buses and the distance (in kilometers) from the school.
- The second line contains  $N$  integers  $T_1, T_2, \dots, T_N$   
— where  $T_i$  represents the number of minutes before person  $i$  needs to go to the toilet.
- The third line contains  $V$  integers  $A_1, A_2, \dots, A_V$   
— where  $A_i$  is the **maximum number of passengers** that van  $i$  can carry.
- The fourth line contains  $V$  integers  $B_1, B_2, \dots, B_V$   
— where  $B_i$  is the **travel time per kilometer** (in minutes/km) for van  $i$ .

## Constraints

- $1 \leq N \leq 2 \times 10^5$
- $1 \leq V \leq 30$
- $1 \leq K \leq 500$
- $1 \leq A_i \leq 50$
- $1 \leq B_i \leq 8$
- $1 \leq T_i \leq 10^5$

## Output

- If it is **impossible** for all people to go to the toilet on time, output a single line containing **-1**.
- Otherwise, output several lines describing which people are assigned to each van.  
Each line contains  $B_i + 1$  integers in the following format:  $i, p_1, p_2, \dots, p_{B_i}$

where

- the first integer  $i$  is the **van number** (1-indexed),
- and the next  $B_i$  integers are the **IDs of people** in that van.
- Each person appears **at most once** in the output.

If there are multiple solutions exist, print the number of van in ascending order, and each line print the number of student in ascending order as well.

## Subtasks

1. (20 points)  $V = 1$



2. (30 points)  $N \leq 1000$
3. (20 points)  $T_i$  are all equal
4. (30 points) No additional constraints

## Example Test Cases

### Test Case 1

Input	Output
6 5 3	1 1 3 5
20 35 25 40 15 50	2 2 4
3 2 4	3 6
2 3 4	

### Test Case 2

Input	Output
4 10 2	
5 8 7 6	-1
2 2	
3 4	

## Limits

- Time limit: ~~5 hours, 30 minutes~~ <sup>1 second</sup>
- Memory limit: 64 MB