Problem A. Devil's Hell deLivery

Input file:	dhl.in
Output file:	dhl.out
Time limit:	2 seconds
Memory limit:	256 mebibytes

Devil's Hell deLivery company delivers literally everything: boxes, packages, packets, datagrams et cetera.

The delivery process from city A to city B works as follows. There are N trucks and K items. The capacity of truck number i equals c_i. The weight of item number j equals w_j. The trucks make one or more delivery steps.

During one step, some items are loaded into some trucks. Items can not be split. Each truck's capacity must not be exceeded by the total weight of the items assigned to it. All trucks depart simultaneously.

At the end of each step, all trucks come back to the place where they started. If there are any items left, another step is performed.

Your task is to distribute items among steps and trucks so that the number of steps is minimized.

Input

The input contains up to a hundred test cases.

Each test case starts with a single line containing two integers N and K ($1 \le N \le 5$, $1 \le K \le 9$): the number of trucks and the number of items, respectively. The following line consists of N integers $c_1, \ldots, c_N$ ($1 \le c_i \le 10^8$): the capacities of the trucks. The following line consists of K integers $w_1, \ldots, w_K$ ($1 \le w_i \le 10^8$): the weights of the items.

Output

For each test case, if the delivery is impossible, write a single line with a single integer -1.

Otherwise, start with a line containing a single integer S: the number of steps required. This number must be minimized. After that, write S lines describing the steps. Each step description must start with an integer I_i, the number of items delivered during the step. This number must be followed by I_i pairs a_j b_j. Each pair a_j b_j means that the item a_j is assigned to the truck b_j.

If there is more than one possible optimal answer, write any one of them.

Example

dhl.in	dhl.out
2 4 10 20 5 5 5 5 2 1 10 10 20	1 4 1 1 2 1 3 2 4 2 -1