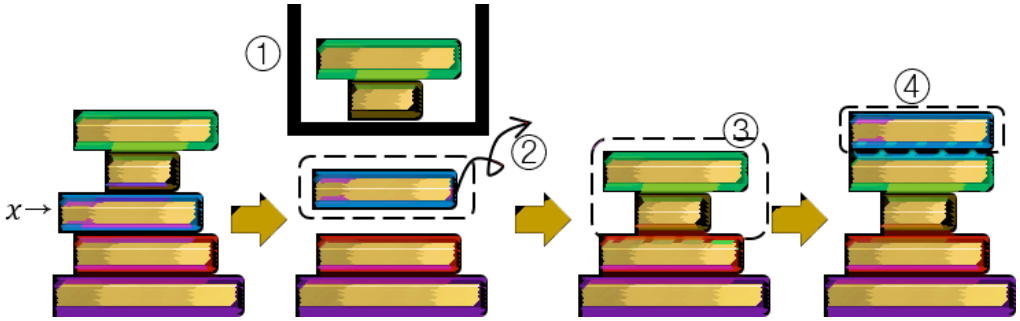
Problem B. Books

You have n books numbered by integers from 1 to n. The weight of the i-th ($1 \leq i \leq n$) book is w_i.

Your house is not that big enough to have a bookshelf. So you decided to keep all the books by stacking them in the floor vertically. When you want to read a certain book x, you have no choice but follow the steps below.

- You *lift* all the books above x.
- You remove book x out of the stack.
- You put down all the lifted books without changing the order.
- After reading book x, you puts book x on the top of the stack.



Today, you decided to read some books for m days. In the j-th ($1 \leq j \leq m$) day, you will read book b_j ($1 \leq b_j \leq n$). To read the book, you must use the steps described above. Note that it is possible to read the same book several times.

After making this plan, you realized that the total weight of books you should *lift* during m days would be too much. So, you decided to change the order of the stacked books before starting to reading books and minimize the total weight. There is no restriction on the order of stacking books, so any order is possible.

Given the your reading plan, write a program that calculates the *minimum possible total lifted weight* during m days.

Input

Your input consists of an arbitrary number of records, but no more than 50.

Each record consists of three lines. The first line contains two integers n $(2 \leq n \leq 500)$ and m $(1 \leq m \leq 1{,}000)$, separated by a space. The second line contains n positive integers $w_1, w_2, \ldots, w_n$ $(1 \leq w_i \leq 100)$, each separated by a space. The third line contains m integers $b_1, b_2, \ldots, b_m$ $(1 \leq b_j \leq n)$, each separated by a space.

The end of input is indicated by a line containing only the value -1.

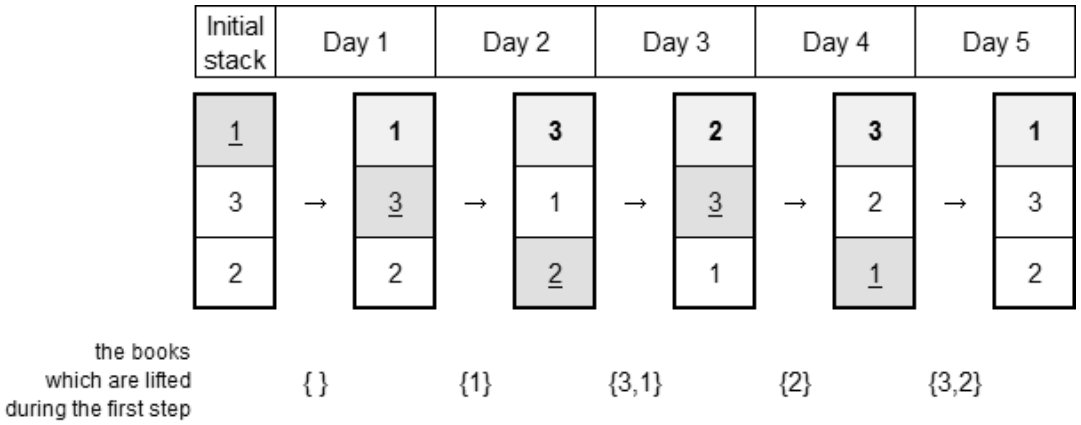
Output

For each input record, print the minimum total weight of books you should *lift*, which can be achieved by reordering the stack of books.

Example

Standard input	Standard output
3 5 1 2 3 1 3 2 3 1 -1	12

Explanation of the example



Time Limit

1 second.