PIGS

Description

Mirko works on a pig farm that consists of M locked pig-houses and Mirko can't unlock any pighouse because he doesn't have the keys. Customers come to the farm one after another. Each of them has keys to some pig-houses and wants to buy a certain number of pigs.
All data concerning customers planning to visit the farm on that particular day are available to Mirko early in the morning so that he can make a sales-plan in order to maximize the number of pigs sold.
More precisely, the procedure is as following: the customer arives, opens all pig-houses to which he has the key, Mirko sells a certain number of pigs from all the unlocked pig-houses to him, and, if Mirko wants, he can redistribute the remaining pigs across the unlocked pig-houses.
An unlimited number of pigs can be placed in every pig-house.
Write a program that will find the maximum number of pigs that he can sell on that day.

Input

The first line of input contains two integers M and N, 1 <= M <= 1000, 1 <= N <= 100, number of pighouses and number of customers. Pig houses are numbered from 1 to M and customers are numbered from 1 to N.
The next line contains M integeres, for each pig-house initial number of pigs. The number of pigs in each pig-house is greater or equal to 0 and less or equal to 1000.
The next N lines contains records about the customers in the following form (record about the i-th customer is written in the (i+2)-th line):
A K1 K2 ... KA B It means that this customer has key to the pig-houses marked with the numbers K1, K2, ..., KA (sorted nondecreasingly) and that he wants to buy B pigs.
Numbers A and B can be equal to 0.
Input ends with EOF

Output

The first and only line of the output should contain the number of sold pigs.

Source
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Sample Input

```
3 3
3 1 10
2 1 2 2
2 1 3 3
1 2 6
```

Sample Output

```
7
```

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