Metropole

Input File	Output File	Time Limit	Memory Limit
standard input	standard output	1 second	256 MiB

Roads are a thing of the past in the futuristic city of Metropole. Instead, residents travel from station to station using *hypergrids*.

The city consists of V stations (numbered from 1 to V) that are connected by H hypergrids (numbered from 1 to H).

The i-th hypergrid connects S_i stations. If you are at any of those stations, you can pay C_i dollars to travel to any of the other stations in that hypergrid.

You are currently at station 1. What is the fewest dollars you have to spend to get to station V? You are guaranteed that it is possible to get from station 1 to station V.

Subtasks and Constraints

For all subtasks, you are guaranteed that:

- $2 \leq V \leq 100\,000$.
- $1 \leq H \leq 100\,000$.
- $1 \leq S_i \leq V$, for all i.
- $1 \leq C_i \leq 100\,000$ for all i.
- $S_1 + S_2 + ... + S_H \leq 300\,000$

Additional constraints for each subtask are given below.

Subtask	Points	Additional constraints
1	12	$S_i = 2$, for all i. That is, every hypergrid connects exactly two cities.
2	28	$S_i \leq 4$, for all i. That is, every hypergrid connects at most 4 cities.
3	46	$C_i = 1$, for all i. That is, every hypergrid costs exactly 1 dollar to use.
4	14	No further constraints apply.

Input

The first line of input contains the two integers, V and H.

Then, H pairs of lines follow. The first line in the i-th pair contains the integer C_i. The second line in the i-th pair begins with S_i, followed by S_i integers, describing the stations that the i-th hypergrid connects. No city is listed more than once in each hypergrid.

Output

The output should contain a single integer: the fewest dollars you have to spend to get from station 1 to V.

Note: The answer can be quite large. Consider using `long long int`.

Sample Input 1

```
6 5
20
2 1 5
70
2 2 1
5000
2 4 6
10
2 5 4
30
2 2 4
```

Sample Output 1

```
5030
```

Sample Input 2

```
6 4
30000
3 1 3 4
100
4 6 5 2 4
90000
2 2 3
40
3 2 5 6
```

Sample Output 2

```
30100
```

Explanation

In sample case 1, one path you can take is $1 \to 5 \to 4 \to 6$, costing $20 + 10 + 5000 = 5030$ dollars. This is the minimum possible.

In sample case 2, one path you can take is $1 \to 4 \to 6$, costing $30000 + 100 = 30100$ dollars. This is the minimum possible.

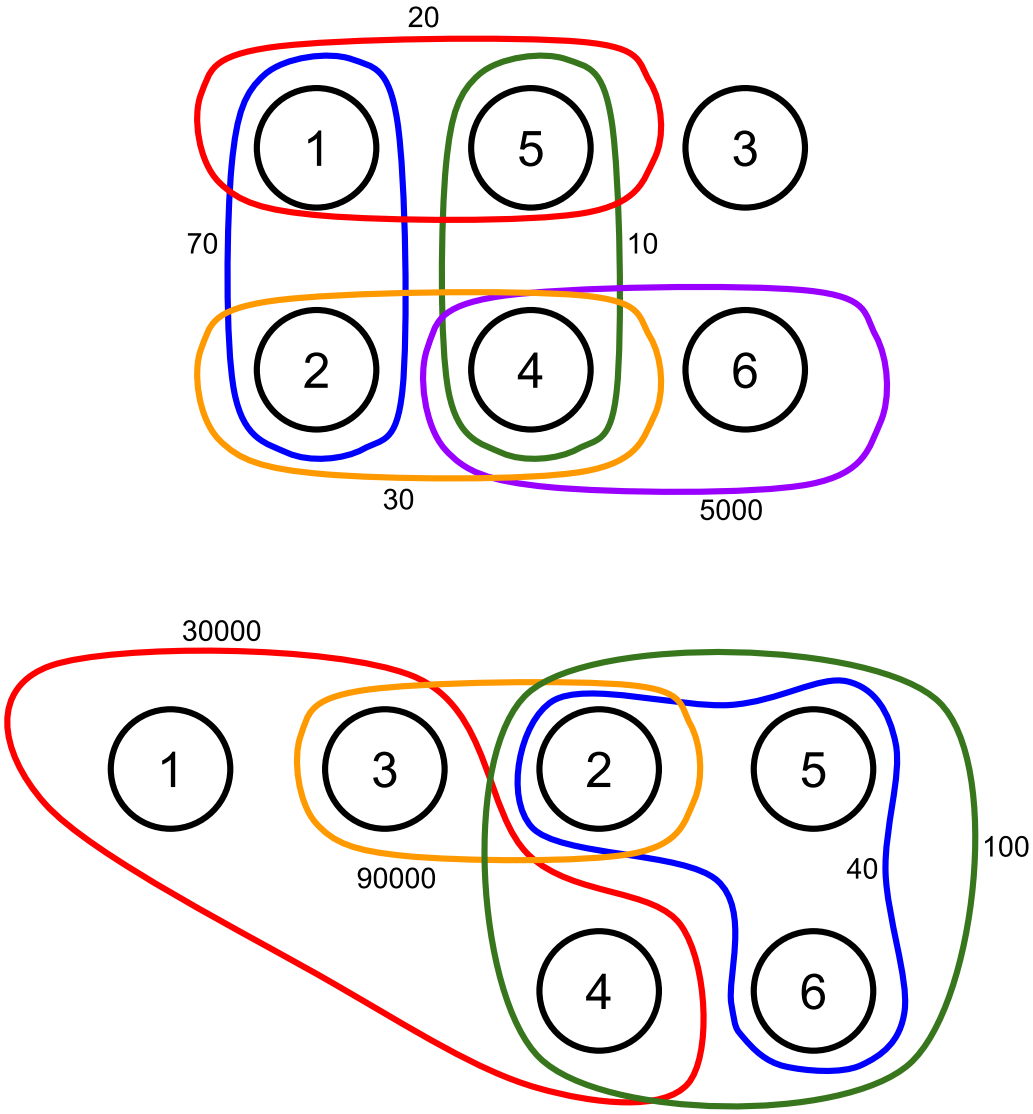

Figure 1: Diagrams for the two sample cases