Two Efficient Teams

A company has n employees numbered from 1 to n. It wants to divide them into two non-empty teams. The team sizes may be unequal, but each employee must belong to exactly one team.

For some small groups of employees, it's known that they would work more efficiently if all members of the group are on the same team. Formally, there are m groups, the i^{th} of which consists of k_i employees and has an efficiency level f_i. Each group all of whose members are on the same team adds f_i to the total efficiency level.

Find the maximum possible total efficiency level.

Complete the function `maximumEfficiency` which takes two integers n and m and returns an integer denoting the maximum total efficiency level. You will need to take the information about the groups from the standard input, as described in the input format section.

Input Format

The first line contains two space-separated integers describing the respective values of n and m.

The subsequent lines describe each of the m groups over two lines:

1. The first line has two space-separated integers denoting the respective values of k_i (the number of members in the i^{th} group) and f_i (the group's efficiency level).
2. The second line contains k_i space-separated integers describing the indices of the employees in group i.

Constraints

- $2 \leq n \leq 40$
- $1 \leq m \leq 500$
- $2 \leq k_i \leq 3$
- $1 \leq f_i \leq 10^9$

Output Format

Print the maximum total efficiency level.

Sample Input 0

```
4 3
2 4
1 2
2 5
1 3
3 10
2 3 4
```

Sample Output 0

```
10
```

Explanation 0

The $m = 3$ groups are $G_1 = \{1, 2\}$, $G_2 = \{1, 3\}$, and $G_3 = \{2, 3, 4\}$, and their efficiency levels are $f_1 = 4$, $f_2 = 5$, and $f_3 = 10$. There are many ways to select the two teams, but here are a few possible ones:

- $\{1, 2\}, \{3, 4\}$: One team contains G_1 and the other team contains no groups, so its total efficiency is $f_1 = 4$.
- $\{1, 2, 3\}, \{4\}$: One team contains G_1 and G_2 and the other team contains no groups, so its total efficiency is $f_1 + f_2 = 4 + 5 = 9$.
- $\{2, 3\}, \{1, 4\}$: Neither team contains any groups, so its total efficiency is 0.
- $\{1\}, \{2, 3, 4\}$: One team contains G_3 and the other team contains no groups, so its total efficiency is $f_3 = 10$.

```
  Team 1     Team 2   Total Efficiency
{ 1 }       { 2 , 3 , 4 }10
{ 1 , 2 }   { 3 , 4 }    4
{ 1 , 2 , 3 }{ 4 }       9
{ 1 , 3 }   { 2 , 4 }    5
{ 2 }       { 1 , 3 , 4 }5
{ 2 , 3 }   { 1 , 4 }    0
{ 3 }       { 2 , 4 , 1 }4
```

We then print the maximum total efficiency for any possible configuration of the two teams, which is 10, as our answer.