

4398 Steal the Treasure

The alliance of thieves decides to steal the treasure from country A. There are n cities in country A. Cities are connected by directional or bidirectional road. To avoid the risk, the king of country A divides his treasure and hides them in some place on the road.

The alliance has found out the secret of the king. They get a map of country A which shows the location and the quantity of treasure on each road. In order to make the maximum profit and reduce the least loss, the alliance determines to send n thieves respectively to each city (one city one thief). At the appointed time, each thief chooses one road (if there is a road and notice that the road may have direction) to get to its corresponding city. Then he can steal the treasure on that road. After stealing, all the thieves return back to their base immediately.

The heads of the alliance wonder to know the quantity of the treasure they can steal at most.

Input

There are multiple cases. Input is terminated by EOF.

For each case, the first line contains two integers n ($1 \leq n \leq 1000$) and m ($0 \leq m \leq n * (n - 1) / 2$), representing the number of cities and the number of roads in country A. The following m lines, each line contains four integers x, y ($1 \leq x, y \leq n, x \neq y$), d ($0 \leq d \leq 1$), w ($0 \leq w \leq 1000$), which means that there is a road from city x to city y , $d = 0$ shows this road is bidirectional and $d = 1$ shows it is directional and x the starting point, w is the quantity of treasure on the road.

We guarantee that the road (x, y) and (y, x) will never appear together in the same case.

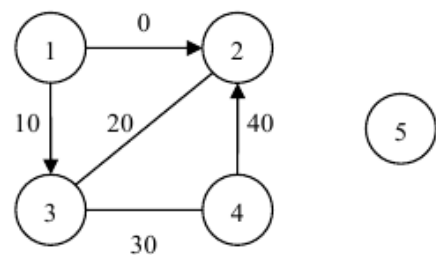
Output

For each case, output the maximum quantity of treasure the alliance can get.

Note: The picture on the right corresponds to the second sample below.

Sample Input

```
2 1
1 2 0 10
5 5
1 2 1 0
1 3 1 10
2 3 0 20
3 4 0 30
4 2 1 40
```



Sample Output

```
10
100
```