

Problem

Idols and Fans

Time limit: 4 seconds

Guess what? In the year 6202, Little Cyan Fish's server is welcoming its 10^6 -th member! Never heard of it? Well, the server, also known as Qingyu's group, is where his friends hang out and talk about CP, non-CP, PKU jokes, food in Beijing, and just about everything else. But most importantly, the chat is full of messages every day about who is whose idol.

Following tradition, Little Cyan Fish is organizing an idol party with n members, numbered from 1 to n . There are m fan-idol relationships among these members: in the i -th relationship, member u_i is a fan of member v_i , and a gift from u_i to v_i costs w_i . At the party, each member must give **exactly one** special gift to **one of their idols**. However, two members exchanging gifts with each other would be awkward (although that sounds pretty sweet :p), so no pair of members may give gifts to each other.

Find the minimum total cost of the gifts, or determine that no valid arrangement exists.

Input

The first line contains an integer T ($1 \leq T$), the number of test cases. The description of the test cases follows.

The first line of each test case contains two integers n and m ($1 \leq n \leq 10^6, 0 \leq m \leq 10^6$), the number of members and the number of fan-idol relationships, respectively.

The i -th of the next m lines contains three integers u_i, v_i , and w_i ($1 \leq u_i, v_i \leq n, u_i \neq v_i, 0 \leq w_i \leq 10^9$), where member u_i is a fan of member v_i , and a gift from u_i to v_i costs w_i .

It is guaranteed that the sum of n over all test cases does not exceed 10^6 , and the sum of m over all test cases does not exceed 10^6 . It is guaranteed that each ordered pair (u_i, v_i) appears at most once in a test case. Two members may be fans of each other.

Output

For each test case, output an integer — the minimum possible total cost of the gifts. If there is no solution, output -1 . Output each answer on a separate line.

Sample Input 1

Sample Output 1

3	6
3 3	-1
1 2 1	1
2 3 2	
3 1 3	
2 2	
1 2 0	
2 1 0	
3 4	
1 2 0	
1 3 1	
2 1 0	
3 2 0	

In the first sample test case, member 1 gives a gift to member 2, member 2 to member 3, and member 3 to member 1. The total cost is $1 + 2 + 3 = 6$.

In the second sample test case, members 1 and 2 would have to give gifts to each other, so no valid arrangement exists.

In the third sample test case, member 1 gives a gift to member 3, member 2 to member 1, and member 3 to member 2. The total cost is 1.