	Problem B Fury Road	ACM-ICPC Thailand Mini Programming Contest Local Training 2016

Mad Max recently took over multiple cities in the barren wasteland. His cities are linked with multiple roads. However, his solider network cannot secure all roads. Hence, he decides to position the soldiers in a way that he can guarantee exactly one secure path between any pair of cities.

Input

The first line contains an integer, T, representing the number of test cases. $1 <= T <= 10$

For each test case, there are m+1 lines of inputs. The first line in each case contains 2 numbers, n and m, where n is the number of cities, and m is the total number of roads. The following m lines each contains 3 numbers: the two cities, and the number of soldiers needed to secure the road.

Note that $2 <= n <= 100$. Each city is represented by a unique number from 1 to n. The number of soldiers on each road is no greater than 10000. All test cases are guaranteed to have at least one solution. Note that the solution maybe a very large number.

Output

Answer in T lines. Each line contains the smallest total number of soldiers used to secure the roads.

Example

Input	Output
2 2 1 1 2 4 5 7 1 2 1 2 3 3 2 4 4 1 4 2 5 3 1 5 1 4 4 5 5	4 7