Yapanese Highways

Time Limit: 2 seconds

Problem Description

In Yapan Kingdom, the highways connecting towns are old and shabby. Sori Yabe, the Premier of Yapan Kingdom, plans to improve the infrastructure via renewing the highways, but the fund is very limited. There are n towns $t_1, \ldots, t_n$ in Yapan Kingdom. Yabe's goal is to allow all Yapanese people to travel in his country without using the old highways. So he has to renew exactly $n-1$ highways to ensure that$t_1, \ldots, t_n$ are connected by the renewed highways.

Sori Yabe has received m renewing plans. Each of them contains two endpoints t_i, t_j and its cost $w(t_i, t_j)$. Please write a program to compute the minimum total cost of renewing highways such that Yapanese people can travel between any pair of $t_1, \ldots, t_n$ without using old highways.

Technical Specifications

1. The number of test cases is no more than 20.
2. $2 \leq n \leq 10000$, $n-1 \leq m \leq 200000$ and $w(v,u) \leq 1000$.
3. Basic: $n \leq 1000$.

Input Format

The first line of the input file contains an integer indicating the number of test cases. The first line of each test case contains two integers n and m. Each of the following m lines contains 3 integers i, j, k which indicate that $w(t_i, t_j) = k$ where $i, j \in [1, n]$. The numbers are separated by blanks.

Output Format

For each test case, output the minimum total cost.

Sample Input

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

Sample Output

```
1
4
```