Question 1.

The country Wano has N cities and M bidirectional bridges of types 1,2 and 3. Some citizens of the country are affected by fruit and are called smilers.

a. Bridges of type 3 can be used by everyone

b. Bridges of type 2 can be used only by smilers

C. Bridges of type 1 can only be used by non-smilers

Omesh has an interesting query for you, how many bridges can you destroy such that the country is still connected? A connected country is a country where all citizens can go from one city to another..

Input format:

The first line contains integers N and M.
The following M lines contain the edges described by three integers A, B, and C .
A and B are the two cities numbered between 1 and N and C is the type of road.

Output:

Single integer denoting the number of roads that can be already disconnected, print-1 if Wano is already disconnected.

Constraints

T < 10

N, M< 10^4

1 <= A, B<= N

Sample Input
5 7
1 2 3
2 3 3
3 4 3
5 3 2
5 4 1
5 2 2
1 5 1

Sample Output
2

Memory Limit: 400 (in MB) Time Limit: 5 (in Seconds)

Question 2.

A quaternary number is a number with base 4, 1.e., only digits 0-3. You have to build a quaternary number with N digits such that no adjacent digits are the same. For every position in the number, you are also given the cost of using digits 0,1,2, and 3, respectively. What would be the minimum cost to build this Quaternary number? Please note that a number starting with Os is also valid, l.e., 012 is a 3-digit number.

Input format

First line: Integer T denoting the number of test cases

For each test case:

First line: N, the number of digits

Next N lines: Four integers denoting the cost of entering, 0, 1,2,3, respectively in the respective position in the string.

Output format

Single Integer in each newline, the cost of building the string.

Constraints
T<10
N<10^5
Cost of 0,1,2,3 < 1000

Sample Input
1
2
2 6 9 11
3 3 1 14

Sample Output
3

Memory Limit: 400 (in MB) Time Limit: 5 (in Seconds)