Roads
2 second, 256 MB

In a mysterious country, there are **N** cities connected with **M** bidirectional roads (two-way roads) (2<=**N**<=100,000; 1<=**M**<=200,000). Cities are numbered from 1 to **N**. Roads are also numbered from 1 to **M**. Each road connects two cities and has a certain minimum speed limit, i.e., if you would like to use this particular road, you have to drive **faster** than or equal to that limit.

You are a responsible driver that knows your own limit, i.e., you will never drive faster than **S** km/h.

You are given **Q** questions (, each asking if you can go from one city **A** to another city **B**. You job is to answer all these questions.

Input
The first line of the input contains four integers: **N M S Q** (2<=**N**<=100,000; 1<=**M**<=200,000; 1<=**S**<=200; 1<=**Q**<=100,000).

The next **M** lines contain information on roads. More specifically in line 1+**i**, for 1<=**i**<=**M**, there are three integers **X Y L** (1<=**X**<=**N**; 1<=**Y**<=**N**; **X**!=**Y**; 0<=**L**<=300) specifying information on road **i**, meaning that road **i** connects city **X** and **Y** (bidirectionally) with minimum speed limit of **L** km/h.

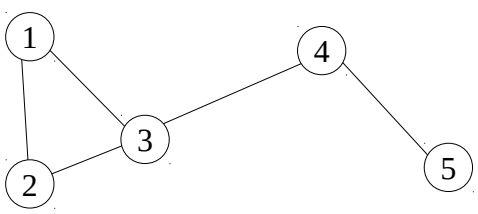
The next **Q** lines specify **Q** questions. Each line contains two integers **A** and **B** (1<=**A**<=**N**; 1<=**B**<=**N**; **A**!=**B**).

Output
There are **Q** lines. Each line contains either a string "`yes`" or "`no`" as the answer to the associated question.

Scoring
- Subtask 1 (30%): N <= 1,000; M <= 5,000; Q <= 1,000.
- Subtask 2 (30%): Q = 1.
- Subtask 3 (40%): No additional constraints.

Example 1

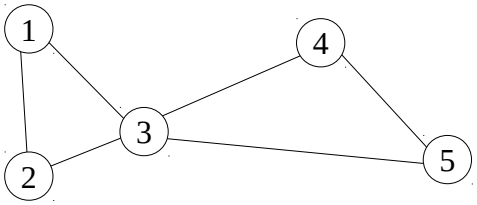
Input	Output
5 5 80 3 1 3 0 1 2 10 3 2 150 3 4 100 4 5 10 1 3 2 4 5 4	yes no yes



Cities and roads for example 1

Example 2

Input	Output
5 6 80 3 1 3 0 1 2 10 3 2 150 3 4 100 4 5 10 5 3 40 1 3 2 4 5 4	yes yes yes



Cities and roads for example 2