Problem K - The Prestige

Time limit: 1 second

"Nothing is impossible, Mr. Angier. What you want is simply expensive." - Nikola Tesla, played by David Bowie (!) in the movie *The Prestige*

Lucca's donut shop was a success, and he opened a franchise of donut shops accross the city. To navigate between them, he built several tunnels that lead from one store to another in **a single direction**. He intends to drive through these tunnels in a *Cybertruck* electric car – because, you know, it's really cool.

His donut-powered wealth allowed him to install *Superchargers* in each of his donut shops, which he can use to recharge the battery of his car at no cost. However, going through each tunnel drains his car's battery by a certain amount. It is impossible to recharge his car while inside a tunnel.

He has hired you as his Assistant to the Regional Manager. Lucca will ask you several questions of the form "what is the minimum battery capacity my car needs to go from shop A to shop B?". You can assume Lucca will recharge his car's battery at every stop he makes along the way.

Input

The first line of input will contain a pair of integers N and M, representing, respectively, the number of shops (his shops can be represented by integers from 1 to N) and the number of tunnels between them ($2 \leq N \leq 200, 2 \leq M \leq N \cdot (N-1)$).

M lines will follow. The i-th of those will contain three integers u_i, v_i, and c_i ($1 \leq u_i, v_i \leq N, u_i \neq v_i, 0 \leq c_i \leq 100,000$), representing an uni-directional tunnel from shop u_i to v_i that drains the battery by c_i.

After that, there will be a line containing a single integer Q ($1 \leq Q \leq N\dot{(}N-1)$), representing the number of questions Lucca has asked you. Q lines will follow, with each of them containing two integers A and B ($1 \leq A, B \leq N, A \neq B$), representing a question with the aforementioned format.

Output

You should output Q lines. The i-th line should contain a single integer, representing the answer to Lucca's i-th question. If there is no path between the two shops Lucca request, output `-1`.

Sample Input

```
4 7
1 2 3
2 3 2
1 3 2
3 4 4
4 2 2
3 2 1
4 3 1
4
1 3
1 4
4 2
4 1
```

Sample Output

```
2
4
1
-1
```