

D. General SAT

time limit per test: 6 s.
memory limit per test: 1024 MB

You are given a connected, undirected simple graph of n vertices and m edges, and the vertices are numbered from 1 to n . The i -th edge connects vertex u_i and v_i and has a weight w_i .

For a given positive integer x , let $f(x)$ represent the minimum number of colors needed to color the vertices of the graph such that for every pair of distinct vertices u and v , at least one of the following condition holds:

- Vertex u and v are in different colors.
- There does not exist a simple path (a path without duplicate vertices and edges) from u to v such that the maximum edge along the path is lower or equal to x .

You are given q queries, each of which provides an integer k_i . Your task is to output the value of $f(k_i)$ for each query.

Input

The first line contains three integers n , m , and q ($2 \leq n \leq 3 \times 10^5$, $n - 1 \leq m \leq \min(\frac{n(n-1)}{2}, 3 \times 10^5)$, $1 \leq q \leq 3 \times 10^5$) — the number of vertices, edges, and queries, respectively.

Then follow m lines, each containing three integers u_i , v_i , and w_i ($1 \leq u_i, v_i \leq n$, $1 \leq w_i \leq 10^9$) — there is an edge of weight w_i between vertices u_i and v_i .

Then follow q lines, each containing one integer k_i ($1 \leq k_i \leq 10^9$) — the query parameter.

It is guaranteed that the graph is simple and connected.

Output

For each query, print $f(k_i)$ in one line.

Examples

input	Copy
<pre>5 6 6 1 5 3 2 5 14 1 2 12 2 4 7 4 3 10 2 3 9 3 9 12 15 1 8</pre>	
output	Copy
<pre>2 3 5 5 1 2</pre>	
input	Copy
<pre>2 1 5 1 2 100 98 99 100 101 102</pre>	

Micro1 Contest #9

Contest is running

00:02:23

Contestant



→ Languages

The following languages are only available for the problems from the contest

Micro1 Contest #9:

- GNU G++17 7.3.0
- GNU G++20 13.2 (64 bit, winlibs)
- GNU G++23 14.2 (64 bit, msys2)

→ Submit?

Language: GNU G++23 14.2 (64 bit, ms) ▼

Choose file:

Choose File

 No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
318130424	May/02/2025 19:26	Accepted

↑

output

Copy

1

1

2

2

2

Supported by

