

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

L. The Shortest Path

time limit per test: 3 s
memory limit per test: 256 megabytes

You are given a directed weighted graph with N nodes and M edges. Your task is to find the minimum shortest path between any pair of nodes in the graph. As the weight of the edges can be negative, the path is allowed to visit the same node multiple times.

Formally, let $F(u, v)$ be the shortest path between the two nodes u and v , find the minimum $F(u, v)$ over all pairs (u, v) ($1 \leq u, v \leq N$) ($u \neq v$). If there is no path between a pair of nodes u and v , then $F(u, v) = \infty$.

Input

The first line of input contains a single integer T ($1 \leq T \leq 100$), the number of test cases.

The first line of each test case contains two integers N and M ($2 \leq N \leq 2000$) ($1 \leq M \leq 5000$), where N is the number of nodes in the graph, and M is the number of edges.

Each of the following M lines contains three integers U , V and C ($1 \leq U, V \leq N$) ($U \neq V$) ($-10^6 \leq C \leq 10^6$), representing that there is an edge from node U to node V with cost C .

Note that the graph may contain multiple edges between the same pair of nodes in the same direction.

Output

For each test case, print the minimum length of a shortest path in the graph, or "-inf" if the length of the shortest path is negative infinity.

Example

input

```
3
3 3
1 2 -1
2 3 -3
3 1 -5
4 5
1 3 0
1 2 -2
2 3 3
3 4 1
4 1 -1
4 4
1 2 5
2 3 -3
3 4 -3
1 4 2
```

Copy

output

```
-inf
-3
-6
```

Copy

2017 ACM Amman Collegiate Programming Contest

Finished

Practice



→ About Contest

[Contest website](#)

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
305025275	Feb/08/2025 20:41	Accepted
305022057	Feb/08/2025 20:19	Accepted
305000177	Feb/08/2025 17:38	Accepted
304999952	Feb/08/2025 17:36	Wrong answer on test 2
304999756	Feb/08/2025 17:34	Accepted
304998935	Feb/08/2025 17:28	Time limit exceeded on test 2
299268510	Jan/01/2025 18:26	Wrong answer on test 2
299267416	Jan/01/2025 18:14	Wrong answer on test 2
299266959	Jan/01/2025 18:08	Accepted
299266857	Jan/01/2025 18:07	Wrong answer on test 2