Nanoworld

You're living in the future, way beyond the singularity and the exhaustion of ipv6, and you want to plan a fastest trip between your own planet and the planet of the your favourite restaurant.

You have a map of one-directional nanobot ferry lines between the planets in your system. The map states the distance $\mathbf{d_{ij}}$ between each (connected) pair of planets **i** and **j**, but due to the rapid technical evolution of this time, you estimate the travel time from **i** to **j** is $\mathbf{d_{ij}/t}$ where **t** is the time at which you choose to depart from **i**. (It is impossible to travel at t=0).

Input

The first line contains **T** the number of test cases.

The first line of each test case contains integers **t0**, **N**, **M** where

- **t0** is the time at which you start your trip. $0 \leq \mathbf{t0} \leq 10^9$
- **N** is the number of planets in your system, numbered 0...N-1. $0 < \mathbf{N} \leq 2.5*10^5$
- **M** is the number of connections between planets. $0 < \mathbf{M} \leq 2.5*10^5$

The following **M** lines of each test case contain integers **i**, **j**, **d** where

- **i** is the source planet. $0 \leq \mathbf{i} < \mathbf{N}$
- **j** is the destination planet. $0 \leq \mathbf{j} < \mathbf{N}$
- **d** is the distance from **i** to **j**. $0 \leq \mathbf{d} \leq 10^9$

Output

The arrival time at planet **N**-1 when starting at planet 0 at time **t0**, or "Impossible" (quotes for emphasis) if there is no possible route.

Example

Input:
2
0 5 5
0 2 2
2 3 3
3 4 4
0 1 5
1 4 6
0 2 1
1 1 0

Output:
4.91760625098
Impossible