Mass Relay

Time limit: 1 sec

In a galaxy far far away, there are **N** star systems (numbered 0 to **N**-1). To travel between star systems, we have to use a "Mass Relay". A mass relay is a portal that connects two star systems and it is bidirectional which means that it can be used to travel both ways. Each mass relay connected different star system having various distance. To use each mass relay, the ship going through it must have big enough engine. A ship has a range **K** which indicates the maximum distance of a mass relay that it can use. For example, a mass relay connecting two planet of distance 10 can only be used by a ship with range 10 or higher.

If a ship with range **K** is located on one particular star system, there might be some star system that this ship cannot visit because of the range constrain. We call all star system that can be reached by a ship of range **K** starting at the star system X as “Local Cluster X”. Be noted that if planet X and planet Y are on the same Local Cluster, that cluster can either be called “Local Cluster X” or “Local Cluster Y”

The entire galaxy can be divided into several disjoint clusters depend on the range **K**. By the decree of the Agency of Spaceship Regulator, a company selling a ship with range **K** must have exactly one maintenance shop situated in each local cluster. This is obvious because a ship of range **K** cannot move beyond its local cluster, if there is no maintenance shop in the cluster, we cannot bring the ship to maintenance.

You, an owner of a new spaceship company, has enough money and manpower to open **D** maintenance shop. Technically, you can build only one shop if you build a ship with very high range. However, a ship with high range means a high production cost. So, you want to build a ship with as small range as possible such that it will need only **D or less** distinct local clusters.

To plan for a changing market, you need to compute the range **K** for **Q** different value of **D**.

Input

- The first line contains three integers, **N, M** and **Q** (1 <= **N** <= 5,000; 0 <= **M** <= 100,000; 1 <= **Q** <= 5,000)
- The following M lines describe each mass relay. Each line contains three integer a, b and c which indicate that there is a mass relay connecting star system a and b with distance c. (0 <= a < b < N; 1 <= c <= 1,000,000)
- The next **Q** lines give the query of the value **D.** Each line has one integer indicating the value **D** where we need to find the suitable **K** (1 <= D < N)

Output

There must be **Q** lines of output, each gives the minimal range **K** that would require the company to build **D** or less maintenance shop.

Example

Input	Output
5 6 4 0 1 20 0 2 10 2 3 30 1 3 10 2 4 40 3 4 50 1 2 3 4	40 20 10 10