Thanos and the Infinity Stones

In a different universe from that of the many in *Avengers: Endgame*, where the number of Infinity Stones is more than that can fit in a one gauntlet, the Avengers (with the help of the Guardians of the Galaxy) have hidden the N available Infinity Stones in N different planets labeled 1 to N. Between these N planets, there are M possible routes that allows Thanos to reach any other planet from the planet that he is currently in. Assume that every route takes some T time to travel. Note that the Mad Titan has to collect all of the available Infinity Stones to destroy half the world and what not.

Now, Thanos wants to spend as much time as possible in traveling between the planets. This will let him recuperate from the significant loss of energy that he goes through every time he acquires a new Infinity Stone. However, every time Thanos takes a path M, he opens a portal between the two connecting planets such that should he choose to take M again from either of the planets, he will be teleported instantly to the other (i.e. $T = 0$)

Input

The first line contains an integer TC, which denotes the number of test cases. The next line contains two integers, N and M, denoting the number of planets and the number of routes. The next M lines contain three integers U, V, and T, where U and V denote the two planets being connected, and T denoting the time taken to travel between U and V.

Output

Print the maximum time that can be taken by Thanos en route to collect the N Infinity Stones

Constraints

$1 \leq TC \leq 10$
$1 \leq N \leq 10^5$
$1 \leq M \leq 10^6$
$1 \leq W \leq 10^3$