Silent Mist
Problem ID: silentmist


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After a long and ardous journey you and your convoy, have finally entered the the Mist Dragon's domain, Niebla. Upon entering the Niebla's domain you notice a dangerous mist engulf the area and your units immediately lose some health. The members all turn to you for answers, and in desperation you look around and notice a royal knight slumped on one of the trees nearby.

As you approach the knight you notice that they must have passed away from from the exposure to the mist, how unfortunate. In their hand they hold a letter with the king's seal. You fetch the letter from the knightus cold hands, and begin reading it:

> To my Royal Guard,
>
> By the time you will have opened this letter you will have reached Niebla's domain, a truly dreadful place. As you may have already noticed, the mist poses a hazard to your health. You must escape immedately, your lives depend on it! I have managed to get our country's best wizards to conjure a magic tome which will allow you to cast a spell that teleports your convoy from one safe spot to another, if and only if there is already a path between them. Unfortunately this tome only has a limited amount of uses, so use it wisely.
>
> We will provide you a map on the back of this letter outlining the safe points within the mist, and the time required to travel on foot between some of these points which we have collected over several of our past expeditions in this domain.
>
> Best,
> The King

With this information in hand, you would like to determine if possible, the shortest time required to get through the Niebla's domain, with the help of the tome.

Input

The first line of input will consist of three integers N, M, S ($2 \leq N \leq 5000$, $1 \leq M \leq N^2$, $1 \leq S \leq 10$), representing the the number of safe spots, the number of paths, and the amount of spells left on the king's tome before it breaks.

Following this will be M lines composed of four integers describing the information of a path: u_i, v_i, t_i ($1 \leq u_i, v_i \leq N$ and $1 \leq t_i \leq 10000$), representing the starting safe point, the ending safe point, the time required to traverse this path on foot ; this path is bidirectional. Following this will be two integers $START$, the safe spot you begin your journey from and, END, the last safe spot this is outside of Niebla's domain.

Output

Your output should consist of one integer, being the minimum amount of time required to get your convoy from $START$ to END. if this is impossible then print the phrase "retreat".

Sample Input 1

```
4 4 1
1 2 4
2 4 4
1 3 5
3 4 1
1 4
```

Sample Output 1

```
1
```

Sample Input 2

```
4 6 2
1 2 3
1 3 4
1 4 10
2 3 3
2 4 1
3 4 3
1 4
```

Sample Output 2

```
0
```

Sample Input 3

```
4 3 1
1 2 1
2 3 1
3 1 1
1 4
```

Sample Output 3

```
retreat
```