Problem G: Hunting

Time Limit: 1 Sec Memory Limit: 128 MB
Submit: 642 Solved: 80
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Description

Pisces likes hunting very much. There are n camps in the forest, with m directed weighted forest roads connecting them. Pisces would choose the path for hunting in accordance to his mood. The length of the path is the sum of the weight w of the roads he has passed. Note that he can pass any road for multiple times.

Now, Pisces wants to know the k-th minimum length of all the paths. There are q queries you need to answer.

Input

The first line contains an integer t ($1 \le t \le 100$), which represents the number of the test cases.

The first line of each test case contains three positive integers n, m, q ($1 \le n, m, q \le 5 * 10^4$).

Each of the next m lines contains 3 integers u, v, w, indicating that there is a forest road from u to v and it weights w ($1 \le u, v \le n, 1 \le w \le 10^9$).

Each of the next q lines contains one integer k ($1 \le k \le 5 * 10^4$) as mentioned above. It's guaranteed that $\Sigma n, \Sigma m, \Sigma q, \Sigma max(k) \le 2.5 * 10^5$

and *max*(*k*)
won't exceed the number of paths in the forest.

Output

For each query, print one integer indicates the answer in line.

Sample Input

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

Sample Output

```
3
3
```

HINT

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