Problem E. Adventure

Time limit 2000 ms
Memory limit 256MB

Problem Description

As an adventurous traveler, you are planning a journey from Taiwan to Iceland. You have K special discount coupons, each with its own discount factor, which you can use to reduce the cost of any single flight along your route. Each coupon can only be used once.

When you apply a discount coupon with a discount factor d_i to a flight that costs w the new price becomes $\lfloor \frac{w}{d_i} \rfloor$ (rounded down to the nearest integer).

Your goal is to find the minimum total cost to travel from Taiwan (city 1) to Iceland (city N) using the available flights and coupons optimally.

Input format

The first line contains three integers N ($2 \leq N \leq 10^5$), M ($1 \leq M \leq 2 \times 10^5$), K ($0 \leq K \leq 3$), meaning the number of cities, the number of flight connections, and the number of discount coupons, respectively. The cities are numbered from 1 to N, where city 1 is Taiwan and city N is Iceland.

The next line (if $K \neq 0$) contains K integers d_i ($1 \leq d_i \leq 100$), each representing the discount factor of a coupon.

The next M lines each contain three integers u, v ($1 \leq u, v \leq N,\ u \neq v$) and w ($1 \leq w \leq 10^9$), representing a bidirectional flight between city u and city v with a price of w.

Output format

Print a single integer: the minimum total cost to travel from Taiwan to Iceland using the available flights and discount coupons optimally.

If there's no route from Taiwan to Iceland, output -1.

Subtask score

Subtask	Score	Additional Constraints
1	20	$K = 0$
2	35	$K = 1$
3	45	No constraints

Sample

Sample Input 1

```
3 4 0
1 2 3
2 3 1
1 3 7
2 1 5
```

Sample Output 1

```
4
```

Sample Input 2

```
3 4 1
2
1 2 3
2 3 1
1 3 7
2 1 5
```

Sample Output 2

```
2
```

Sample Input 3

```
3 4 2
2 2
1 2 3
2 3 1
1 3 7
2 1 5
```

Sample Output 3

```
1
```