Electrical Fault

Oh no, your laptop is experiencing an electrical fault! Unwilling to switch to coding on your phone, your only option is to make the repair yourself.

Your laptop consists of V electrical terminals (numbered 1 to V), connected by E bidirectional wires. The ith wire connects terminal a_i to terminal b_i and is d_i micrometers long. K of the terminals are *grounded* terminals: $x_1, x_2, \ldots x_K$. To fix your laptop you must find a path between two different grounded terminals. What is the shortest path possible?

Subtasks and Constraints

For all subtasks:

- $2 \leq V \leq 100\,000$.
- $1 \leq E \leq 300\,000$.
- $2 \leq K \leq V$.
- $1 \leq x_1 < x_2 < \cdots < x_K \leq V$.
- $1 \leq a_i, b_i \leq V, a_i \neq b_i$ for all i.
- $1 \leq d_i \leq 10\,000$, for all i.
- You are guaranteed that there exists at least one path between two different gounded terminals.

Additional constraints for each subtask are given below.

Subtask	Points	Additional constraints
1	15	$K = 2$ and $d_i = 1$ for all i.
2	15	$K = 2$.
3	40	$d_i = 1$ for all i.
4	30	No additional constraints.

Input

- The first line of input contains the three integers V, E and K.
- The next line of input contains the integers $x_1, x_2, \ldots, x_K$.
- The following E lines describe the wires. The ith line contains a_i, b_i and d_i.

Output

Output a single integer, the shortest path between two grounded terminals.

Sample Input 1

```
8 10 4
1 4 5 8
5 8 30
1 2 9
1 2 5
2 3 8
4 3 2
7 4 10
4 6 15
1 7 5
7 6 2
6 5 6
```

Sample Output 1

```
13
```

Sample Input 2

```
12 13 5
2 3 6 10 12
1 2 1
3 7 1
1 4 1
2 4 1
2 7 1
7 9 1
4 6 1
4 5 1
5 8 1
6 8 1
5 10 1
9 10 1
11 12 1
```

Sample Output 2

```
2
```

Sample Input 3

```
8 9 2
4 5
4 7 3
8 3 4
8 1 3
5 1 5
8 2 10
7 6 7
6 5 10
1 6 1
6 3 2
```

Sample Output 3

```
16
```

Explanation

In Sample Input 1, there are $V = 8$ terminals and $E = 10$ wires. Terminals 1, 4, 5 and 8 are grounded. There is a path between terminals 1 and 5 that is 13 micrometers long, which is the shortest possible.

In Sample Input 2, there are $V = 12$ terminals and $E = 13$ wires. Terminals 2, 3, 6, 10 and 12 are grounded. There is a path between terminals 2 and 3 that is 2 micrometers long, which is the shortest possible.

In Sample Input 3, there are $V = 8$ terminals and $E = 9$ wires. Terminals 4 and 5 are grounded. There is a path between terminals 4 and 5 that is 16 micrometers long, which is the shortest possible.

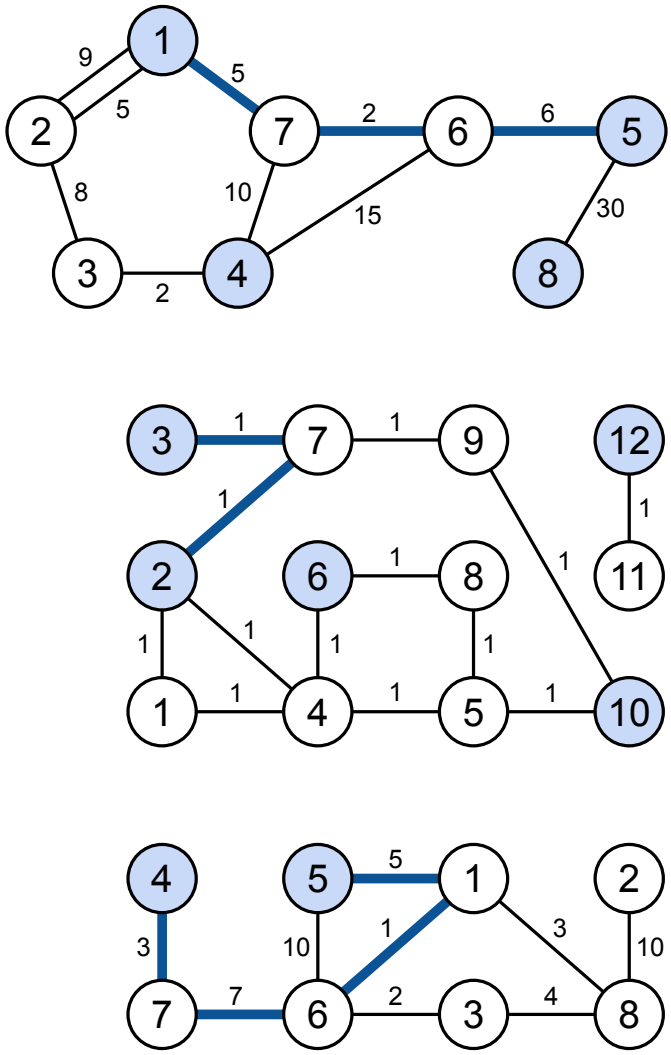

Figure 1: Sample input diagrams. The grounded terminals are shaded and the shortest path is marked in bold.