# Problem MEETAGAIN: Meet Again

While hiding from the evil empire, the spaceship *Millenium Falcon* lands at the entrance of a cave network within an asteroid. However, the cave walls do not seem to be made out of stone, but feel warm and soft. The crew tries to investigate the cave they have landed in. So they go deeper and deeper into the cave network and eventually split up. Only the pilot Chewbacca stays at the spaceship.

After some time, one of the crew members realizes in what kind of cave network they are: in the stomach of a giant monster! In order not to be digested, he tells Chewbacca to use the spaceship to pick up the crew members that are still distributed over the cave network.

Because landing and starting the spaceship wastes a lot of time, they plan to meet at a single point in the cave network, where all crew members enter the ship again:

1. A meeting point must be safely reachable by *all* crew members. That means, any crew member is only allowed to stay where he is or walk through tunnels going strictly upwards the cave network.

2. A meeting point must not be unnecessarily far upstairs. That means, there must be no other cave more downstairs that is still safely reachable by all crew members.

Knowing which cave is safely reachable from which one and the crew members' position, can you help them whether there is a unique cave to meet and which one it is?

Sample Input 1   Sample Input 2   Sample Input 3
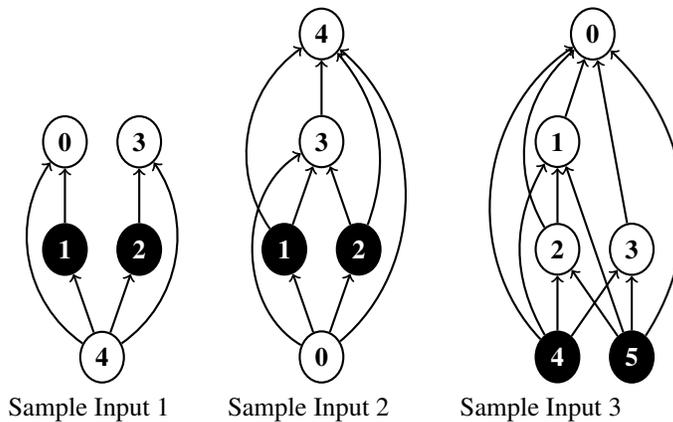
Input

The first line of input starts with an integer $1 \leq V \leq 1\,000\,000$, the number of caves and an integer $0 \leq E \leq 1\,000\,000$ denoting the number of upward-going tunnel paths and one integer $1 < S \leq V$, the number of crew members. The second line contains S pairwise distinct integers $0 \leq s_i < V$, denoting the cave of the ith crew member.

Then E lines follow, each of them consisting of two integers $0 \leq a, b < V$, $a \neq b$, telling that it is possible to safely reach b from a, or equivalently that there is an upward-going tunnel path from a to b. If b is safely reachable from a, and c is safely reachable from b, then c is safely reachable from a, i.e. (a, c) is also listed in the input.

Output

Tell, whether there is a unique meeting point. If there is no cave that is safely reachable by all, print `none`. If there is a unique meeting point, then print its index $0 \leq i < V$. If there are multiple meeting points, print `multiple`.

Sample Input 1

```
5 6 2
1 2
1 0
4 0
2 3
4 3
4 1
4 2
```

Sample Output 1

```
none
```

Sample Input 2

```
5 9 2
1 2
0 1
0 2
1 3
2 3
3 4
2 4
0 3
0 4
1 4
```

Sample Output 2

```
3
```

Sample Input 3

```
6 12 2
4 5
1 0
2 1
2 0
3 0
4 2
4 3
5 2
5 3
4 0
5 0
4 1
5 1
```

Sample Output 3

```
multiple
```