

Shady Suburbs

time limit per test: 1 second
memory limit per test: 976.6 megabytes
input: standard input
output: standard output

points: 100 · problem code: roadworks · author: kahootist

Problem Statement

Will is trying to get home after a long day of work at university. Unfortunately for him, it's already 3am, and there are a lot shady people hiding at the end of some roads ready to jump on Will.

You are given a list of places that are shady, and a list of all roads in Melbourne. How many roads will Will have to cross before getting home?

Input

Your first line will contain v and e as space-separated integers. v represents the number of suburbs in Melbourne, labelled from 0 to $v - 1$, and e represents the number of roads in Melbourne.

Your next line will contain a and b as space-separated integers, indicating the locations of the university and Will's home.

Your next line will contain integer s , indicating the total number of shady suburbs in Melbourne.

Your next line will contain b space-separated integers, each representing a suburb that is shady.

Your next e lines will contain 2 space-separated numbers, specifying a road between the two suburbs.

Output

A single integer, representing the number of roads Will must cross before getting home without heading to any shady suburbs.

If no such path is possible, output -1 instead.

Constraints

For all test cases:

- $2 \leq v \leq 10^3$
- $0 \leq s \leq v$
- $1 \leq e \leq 10^6$
- $a \neq b$
- All shady suburbs will be a valid value within the range of v .

Example 1

Input

```
8 7
2 4
3
0 1 5
0 1
0 2
2 5
4 5
2 6
6 7
4 7
```

Output

3

Example 2

Input

```
3 2
0 2
1
1
0 1
1 2
```

Output

-1

Python Template

```
v, e = map(int, input().split())
a, b = map(int, input().split(" "))
s = int(input())
blocked = list(map(int, input().split(" ")))
roads = [tuple(map(int, input().split(" "))) for _ in range(e)]

# print(...)
```