Intermediate vertices X34137_en

Given a directed graph and two different vertices u and v, compute how many vertices x different from u and v there are such that there exists some path from u to v passing through x.

Input

The input consists in several cases. Each case begins with n, u, v and m, followed by m different pairs $x\ y$, with $x \neq y$, which indicate an arc that goes from x to y. Assume $2 \leq n \leq 10^4$, $0 \leq m \leq 10n$, and that the vertices are numbered between 0 and $n-1$.

Output

For each case, write the number of vertices that can be visited when going from u to v following some path.

Hint

For each case, essentially the expected solution only makes two traversals, each on the right graph.

Sample input 1

```
9 7 4 9
8 7
7 1
7 2
7 5
1 3
2 3
3 4
6 4
4 0

2 0 1 0

3 0 1 2
1 2
2 0

4 0 2 3
0 2
2 3
3 0
```

Sample output 1

```
3
0
0
1
```

Problem information

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