Bloomberg CODECON

Memory Limit: 1024 MB
Time Limit: 5 s

Funny Elevators (200 points)

Introduction

The Virtucon headquarters in New York City are using an interesting algorithm for their elevators, in an attempt to reduce wait times for employees.
There are **F** floors where the ground floor is 0 and the top floor is F-1.
There are **E** elevators which can only stop at every **X**th floor, and cannot go any lower than their base floor **Y**.
Given an employee who wants to travel from floor **A** to floor **B**, your task is to write a program that will determine if it's possible to do so. Assume that the employee is ok with transferring elevators to get to their destination.

Input Specifications

The first line will contain 4 integers **F**, **E**, **A**, **B** where F (1 <= F <= 100) is the number of floors, E (1 <= E <= 20) is the number of elevators, **A** is the starting floor of the employee and **B** is the destination floor. This will then be followed by E lines each containing 2 numbers **X** (0 < X) and **Y** (0 <= Y) for each elevator. Y is the base floor and X tells you that it can stop on every Xth floor.

Output Specifications

Your program will output 1 if it's possible for the employee to get to their destination floor and 0 if it's not.

Sample Input/Output

Input

```
22 4 0 6
3 2
4 7
13 6
10 0
```

Output

```
1
```

Explanation

It's possible to get from the ground floor to floor 6.

Input

```
1000 2 500 777
2 0
2 1
```

Output

0

Explanation

It's not possible to get from floor 500 to floor 777.