

1. Cups Game (topsid)

1 sec / 3 sec

20 points

Juku is at a fair where Quickpaw invites him to play the cups game. The game is played as follows. There is a line of cups on the table, all upside down. Quickpaw puts a ball under one of the cups and starts moving the cups around. On each move, he swaps two of the cups. After Quickpaw has done all the swaps, Juku has to say which cup hides the ball.

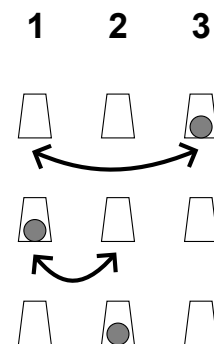
Input. The first line of input contains three space-separated integers N , M and P . N ($2 \leq N \leq 100\,000$) is the number of cups. M ($0 \leq M \leq 100\,000$) is the number of swaps. P ($1 \leq P \leq N$) indicates the cup under which Quickpaw puts the ball in the beginning.

Each of the following M lines contains two integers A_i and B_i ($1 \leq A_i, B_i \leq N$, $A_i \neq B_i$), meaning that on the i -th move Quickpaw swaps the A_i -th and B_i -th cups.

Output. Output one integer, indicating the cup under which the ball is at the end of the game.

Example.	Input	Output
	3 2 3	2
	1 3	
	2 1	

There are 3 cups and initially the ball is hidden under the 3rd cup. Then 2 swaps are made. First, the 1st and the 3rd cups are swapped. Then the 2nd and the 1st cups are swapped. In the end, the ball is under the 2nd cup. The figure on the right illustrates this example.



Example.	Input	Output
	5 3 1	1
	1 5	
	4 2	
	1 5	

Grading. In this task, each test case is graded separately. The test cases are divided into groups where the following additional conditions hold:

0. (0 points) The examples from the task statement. No points will be awarded for solving these, but the grading results will show whether your program works correctly on the evaluation server.
1. (4 points) $N = 2$, $M \leq 3$.
2. (4 points) $N = 3$, $M \leq 2$.
3. (4 points) $N, M \leq 10$.
4. (8 points) No additional constraints.

You may submit several solutions. Each solution you submit may target one or more test groups (possibly all of them).