monster-killing

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

One day, you accidentally find yourself inside a video game.

Thanks to your brilliant problem solving skills and your knowledge of programming, you have been given unlimited power against monsters in this game. Against humans, however, things are a little bit tricky.

One of the kingdoms in the game, the kingdom of *Pixelia*, has k cities, all on a straight line. Each of these k cities has m monsters. You, as the hero, are asked to kill all the monsters in *Pixelia*. Right now, you are at the nth city from the leftmost city. Unfortunately, there are three restrictions:

1. You can only travel between neighbouring cities (so, every city has two neighbours except the leftmost and rightmost city).
2. If you enter a city, including the one you are on right now, you have to kill exactly one monster.
3. If you enter a city with no monsters, the people will see you as a villain and you will die.

You, as a brilliant problem-solver, have to decide whether you are able to kill the monsters without dying.

Print 1 if you are able to kill all the monsters without dying, else output 0.

Input

The first line of the input will contain k, ($0 \leq k \leq 10^5$) the number of cities, as well as n, the position of the city you are in right now.

The next line of the input will contain k integers, the number of monsters in each city.

Output

Output 1, if you are able to kill all the monsters without dying. Output 0, if you are not able to.

Scoring

Subtask 1(10 points): All cities have the same number of monsters

Subtask 2(20 points): ($0 \leq k \leq 100$)

Subtask 3(50 points): No further constraints

Examples

standard input	standard output
4 3 1 1 2 1	1
10 1 9 9 9 9 9 9 9 9 9 9	1
6 3 1 5 4 2 4 5	0

Note

For the first example, we output 1 as we can kill all the monsters. An example on how to would be something like:

1 1 2 1

since we start at the 3rd city from the left, we have to kill a monster there.

1 1 1 1

since we are at the 3rd city, we can move to the 4th city, and kill a monster there.

1 1 1 0

then, we can move to the left and kill a monster there.

1 1 0 0

we can repeat this 2 more times, giving us:

1 0 0 0

0 0 0 0

Hence, we output 1, as we can kill all the monsters without entering a city without monsters.