



Garip Bowling

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Bora and Yaşar have reached the finals of Hacettepe University's 55th Traditional Bowling Tournament, and decide to play a different type of bowling to determine the tournament champion. In this game, the tenpins will be arranged in a square instead of triangular way.

A side of the square is **n** and the game will be played on an **nxn** field. Shots will be made from the desired side of the square and the shot directions will be given as following:

- 0 -> from *East* to *West*
- 1 -> from *South* to *North*'e
- 2 -> from *West* to *East*'ya
- 3 -> from *North* to *South*

The ball will always hit the aimed tenpin initially and continue to bring down the tenpins by the following rule
A tenpin hit by the shot will bring down the tenpin in the direction of the shot and 2 tenpins across from it, that is, when 1 tenpin is brought down, it brings down 3 more tenpins. (its left-corner, right-corner and front)
Every tenpin that is brought down will also bring down other tenpins behind them.

Note: Any tenpin can be hit at the start of the game. This tenpin could be in the corner or it could be in the middle of the board.

Input Format

The first line contains an integer **n**, which is the number of pins at a side of the square pin field. The second line contains two integers **x** and **y**, which are the coordinates of the shooter. These integers are given as 0-indexed.
The third line contains an integer **d**, which is the shot direction.

Output Format

The number of total tenpins that are brought down.

Constraints

$1 \leq n \leq 10^4$

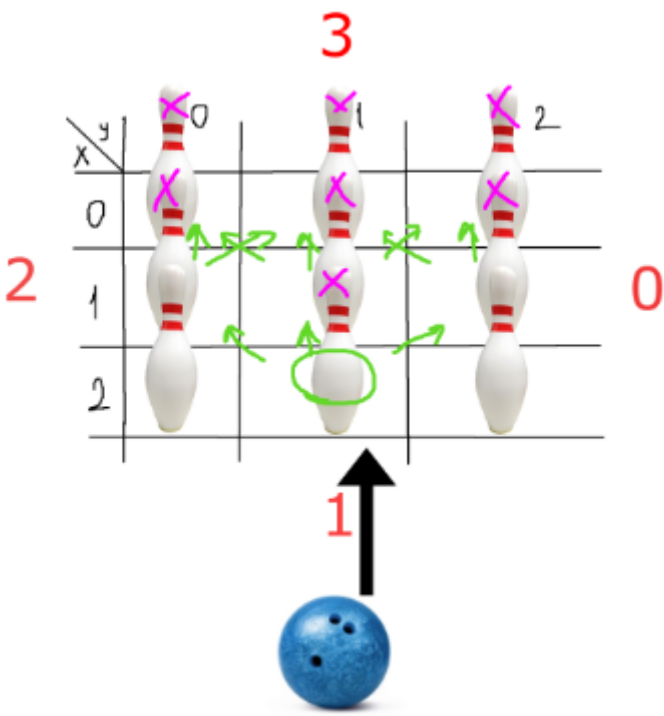
Sample Input 1

```
3
2 1
1
```

Sample Output 1

```
7
```

Explanation 1



A ball thrown from the 1st direction (from south to

north) to $x = 2, y = 1$ will bring down the tenpin located at $(2,1)$. Then, that tenpin will bring down 3 more tenpins indicated by the arrows behind it. These 3 brought down tenpins also bring down the tenpins indicated by the arrows behind them. A total of 7 clubs are brought down in the end.

C++

Bright

Memory Limit (kB) : 256000 Time Limit (s) : 1

```
1 //Brace your keyboard
2 //inzva community built algoleague for every algorithm enthusiast hungry for self-improvement and fri
3
4 #include <bits/stdc++.h>
5
6 using namespace std;
7
8 int main() {
9     // write your code here
10
11     return 0;
12 }
13
```

Upload File

Run Code

Submit