Problem G
Gloucester Somersault

A piece of cheese with polygonal cross-sectional area is rolling along a flat surface as part of a major sporting event.

The piece of cheese rotates clockwise continuously, pivoting around the vertex with lowest y-coordinate and, in case of a tie, greatest x-coordinate.

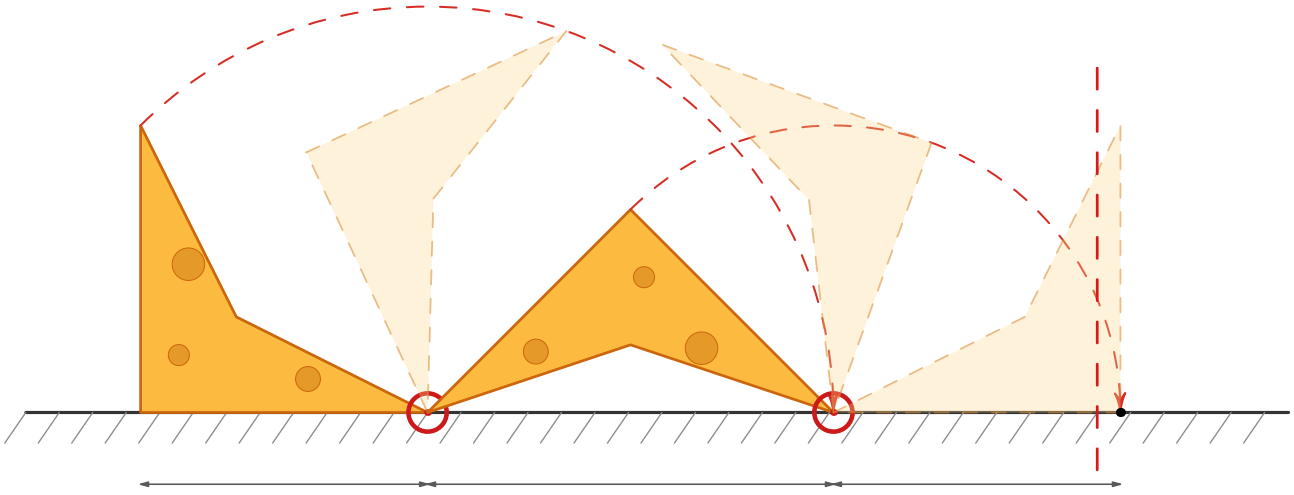


Figure G.1: Illustration of Sample Input 1.

The finish line is m metres from the origin point and must be crossed at ground level, meaning that one of the vertices on the ground is strictly past the line.

How many revolutions does the piece of cheese make in order for at least one part touching the ground to be strictly past the line?

Input

- The first line of input contains the number of vertices of the cheese piece, n ($3 \leq n \leq 10\,000$), and the integer x-coordinate of the finish line in metres, m ($1 \leq m \leq 10^6$).
- The next n lines of input contain the x and y coordinates of cheese vertices, in anti-clockwise order, x_i and y_i ($0 \leq x_i, y_i \leq 10\,000$).

No three adjacent vertices on the shape are collinear and at least one vertex has $y = 0$. The cheese has not yet crossed the line.

Output

Output the number of full 360-degree rotations performed by the piece of cheese until it strictly crosses the line on the ground, rounded up to an integer.

Sample Input 1

```
4 10
0 0
3 0
1 1
0 3
```

Sample Output 1

```
1
```

Sample Input 2

```
4 100
51 0
53 2
51 4
49 2
```

Sample Output 2

```
5
```