

Task: ROB

Robby the Little Robot

UFAM Workshop, contest #4. Source file rob.* Available memory: 256 MB.

Consider a plane with orthogonal coordinate system. There is a programmable robot, called Robby for short, at the point $(0,0)$ of said plane, facing north, i.e., the direction in which the second coordinate increases. Programming Robby consists in giving him a sequence of (numeric) commands d_1, d_2, \dots, d_n . Once Robby is turned on, it does the following moves: the i -th move (for $i \geq 1$) consists in rolling forward $d_{((i-1) \bmod n)+1}$ units (where „mod n ” stands for taking the remainder of integer division by n), followed by a 90° clockwise turn.

Robby is equipped with a battery that keeps him functional for precisely t seconds. Rolling forward a single unit and turning 90° clockwise each take exactly one second.

Write a program that will determine how many times Robby will be located at a given point (x,y) of the plane before its battery is depleted.

Input

In the first line of the input, there are two integers n and t ($1 \leq n \leq 100\,000$, $1 \leq t \leq 10^{18}$) that specify the length of Robby's program and the time its battery lasts. In the second line, there is a sequence of n integers d_1, \dots, d_n ($1 \leq d_i \leq 10^9$) that specify the successive commands of the program. The third line contains a pair of integers x and y ($-10^9 \leq x, y \leq 10^9$) that specify the coordinates of the point of interest.

Output

A single integer should be printed to the output: the number of times that Robby is located at the point (x,y) , including times 0 and t if applicable.

Example

For the input data:

```
4 28
2 3 1 2
3 2
```

the correct result is:

```
2
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Explanation of the example: Robby is located at the point $(3,2)$ after 6 and after 22 seconds since it starts. The following figure depicts Robby's route:

