Task: ROB
Robby the little robot

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 $d_1, d_2, \ldots, d_n$. 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 standard input, there are two integers n and t ($1 \leq n \leq 100\,000$, $t \geq 1$) which specify the length of Robby's program and the time its battery lasts. In the second line, there is a sequence of n integers $d_1, \ldots, d_n$ ($1 \leq d_i \leq 10^9$) which specify the successive commands of the program. The third line contains a pair of integers x and y ($-10^9 \leq x, y \leq 10^9$) which specify the coordinates of the point of interest.

Output

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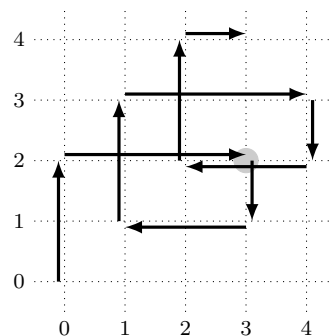
Example

For the input data:

the correct result is:

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4 28
2 3 1 2
3 2
```

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2
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Explanation for 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:

Sample grading tests:

1ocen: the test from the example with $t = 21$;

2ocen: a test with $n = 1$;

3ocen: a large spiral test, i.e., $d_i = i$, $n = 31$, $t = \frac{10^{18}-1}{3}$.

Sample solutions. A (wrong) sample solution for this problem in C++ and Python can be found in the *Files* (or *Pliki* in Polish) section of the SIO system.

Grading

The set of tests consists of the following subsets. Within each subset, there may be several unit tests.

Subset	Property	Score
1	$t \leq 10^6$	10
2	$t \leq 10^{12}$ and $10^6 \leq d_i$	30
3	$t \leq 10^{18}$	60