

## B. Running Student

time limit per test: 1 second  
memory limit per test: 64 megabytes

And again a misfortune fell on Poor Student. He is being late for an exam.

Having rushed to a bus stop that is in point  $(0, 0)$ , he got on a minibus and they drove along a straight line, parallel to axis  $OX$ , in the direction of increasing  $x$ .

Poor Student knows the following:

- during one run the minibus makes  $n$  stops, the  $i$ -th stop is in point  $(x_i, 0)$
- coordinates of all the stops are different
- the minibus drives at a constant speed, equal to  $v_b$
- it can be assumed the passengers get on and off the minibus at a bus stop momentarily
- Student can get off the minibus only at a bus stop
- Student will have to get off the minibus at a terminal stop, if he does not get off earlier
- the University, where the exam will be held, is in point  $(x_u, y_u)$
- Student can run from a bus stop to the University at a constant speed  $v_s$  as long as needed
- a distance between two points can be calculated according to the following formula:  

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$
- Student is already on the minibus, so, he cannot get off at the first bus stop

Poor Student wants to get to the University as soon as possible. Help him to choose the bus stop, where he should get off. If such bus stops are multiple, choose the bus stop closest to the University.

### Input

The first line contains three integer numbers:  $2 \leq n \leq 100$ ,  $1 \leq v_b, v_s \leq 1000$ . The second line contains  $n$  non-negative integers in ascending order: coordinates  $x_i$  of the bus stop with index  $i$ . It is guaranteed that  $x_1$  equals to zero, and  $x_n \leq 10^5$ . The third line contains the coordinates of the University, integers  $x_u$  and  $y_u$ , not exceeding  $10^5$  in absolute value.

### Output

In the only line output the answer to the problem — index of the optimum bus stop.

### Examples

input	Copy
4 5 2 0 2 4 6 4 1	
output	Copy
3	

  

input	Copy
2 1 1 0 100000 100000 100000	
output	Copy
2	

### Note

### → Attention

The package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, a solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then the value 800 ms will be displayed and used to determine the verdict.

### Codeforces Beta Round 9 (Div. 2 Only)

Finished

Practice



### → Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

### → Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

### → Submit?

Language: GNU G++23 14.2 (64 bit, ms)

Choose file: Choose File No file chosen

Submit

### → Last submissions

Submission	Time	Verdict
<a href="#">325141119</a>	Jun/19/2025 14:43	Accepted

As you know, students are a special sort of people, and minibuses usually do not hurry. That's why you should not be surprised, if Student's speed is higher than the speed of the minibus.

→ **Problem tags**

brute force geometry implementation  
\*1200

No tag edit access

→ **Contest materials**

- Codeforces Beta Round #9 ✕
- Codeforces Beta Round #9 ✕
- Tutorial ✕

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