

Racing

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

points: 100 · problem code: racing · author: jbroeksteeg

I-Will-Windra has entered a racing contest! The racetrack can be represented as two arrays of integers a and b , both of length n . When I-Will-Windra is at position i , they can jump $a[i]$ positions to the left or right, assuming it is within the bounds of the array. Furthermore, this move costs them $b[i]$.

As I-Will-Windra's FIT2004 tutor, you want to help them. Given starting positions x and y , what is the minimum cost by which I-Will-Windra can get from x to y ? If this is not possible, output -1 instead.

Input

The first line of input will consist of three integers, x y and z .

The next two lines will each consist of n integers, representing a and b respectively.

Output

The output should consist of a single integer, the minimum cost or -1 if it is impossible.

Constraints

- $2 \leq n \leq 10^5$
- $0 \leq x, y \leq n - 1$
- $1 \leq a[i] \leq n$
- $1 \leq b[i] \leq 30$

Example 1

Input

```
5 4 2
3 3 1 3 2
533 776 812 489 523
```

Output

```
523
```

Explanation

This can be completed in one jump, from index 4 to index 2 (of cost 523).