



## Task 4: Burgers

Kai the lobster is starting a burger chain selling burgers. He has  $n$  ingredients to work with, which are labelled from 1 to  $n$ . For each ingredient  $i$ , he has  $x[i]$  portions of ingredient  $i$ .

He has two recipes for burgers. For each ingredient  $i$ , the first recipe requires  $a[i]$  portions of ingredient  $i$  and the second recipe requires  $b[i]$  portions of ingredients  $i$ .

Can you help Kai compute the maximum total number of burgers he can make?

### Input format

Your program must read from standard input.

The first line of input consists of one integer  $n$ , the number of different ingredients.

The second line consists of  $n$  spaced integers  $x[1], x[2], \dots, x[n-1], x[n]$ , the total number of portions Kai has of each ingredient.

The third line consists of  $n$  spaced integers  $a[1], a[2], \dots, a[n-1], a[n]$ , the number of portions of each ingredient for the first recipe.

The fourth line consists of  $n$  spaced integers  $b[1], b[2], \dots, b[n-1], b[n]$ , the number of portions of each ingredient for the second recipe.

### Output format

Your program must print to standard output.

The output should contain a single integer on a single line, the largest number of burgers Kai can make.

### Subtasks

For all testcases, the input will satisfy the following bounds:

- $1 \leq n \leq 100\,000$
- $1 \leq x[i], a[i], b[i] \leq 10^9$



Your program will be tested on input instances that satisfy the following restrictions:

Subtask	Marks	Additional Constraints
1	9	$a[i] = b[i]$ (i.e. the two recipes are the same)
2	17	$n, x[i] \leq 100$
3	25	$n, x[i] \leq 1500$
4	49	No additional restrictions

### Sample Testcase 1

This testcase is valid for subtasks 2, 3 and 4.

Input	Output
3 14 10 100 3 1 1 2 3 1	5

### Sample Testcase 1 Explanation

He can make 3 burgers using the first recipe and 2 burgers using the second recipe for a total of 5 burgers.

### Sample Testcase 2

This testcase is valid for all subtasks.

Input	Output
2 83 72 1 3 1 3	24



## Sample Testcase 2 Explanation

He can make 24 burgers of either type, since both recipes are the same.