

Problem B. Leftover Recipes

Time limit 2000 ms

Mem limit 1048576 kB

Problem Statement

Your refrigerator has N kinds of ingredients. Let us call them ingredient 1, \dots , ingredient N . You have Q_i grams of ingredient i .

You can make two types of dishes. To make one serving of dish A, you need A_i grams of each ingredient i ($1 \leq i \leq N$). To make one serving of dish B, you need B_i grams of each ingredient i . You can only make an integer number of servings of each type of dish.

Using only the ingredients in the refrigerator, what is the maximum total number of servings of dishes you can make?

Constraints

- $1 \leq N \leq 10$
- $1 \leq Q_i \leq 10^6$
- $0 \leq A_i \leq 10^6$
- There is an i such that $A_i \geq 1$.
- $0 \leq B_i \leq 10^6$
- There is an i such that $B_i \geq 1$.
- All input values are integers.

Input

The input is given from Standard Input in the following format:

```
N
Q1 Q2 ... QN
A1 A2 ... AN
B1 B2 ... BN
```

Output

Assuming that you can make a maximum total of S servings of dishes, print the integer S .

Sample 1

Input	Output
2 800 300 100 100 200 10	5

This refrigerator has 800 grams of ingredient 1 and 300 grams of ingredient 2.

You can make one serving of dish A with 100 grams of ingredient 1 and 100 grams of ingredient 2, and one serving of dish B with 200 grams of ingredient 1 and 10 grams of ingredient 2.

To make two servings of dish A and three servings of dish B, you need $100 \times 2 + 200 \times 3 = 800$ grams of ingredient 1, and $100 \times 2 + 10 \times 3 = 230$ grams of ingredient 2, neither of which exceeds the amount available in the refrigerator. In this way, you can make a total of five servings of dishes, but there is no way to make six, so the answer is 5.

Sample 2

Input	Output
2 800 300 100 0 0 10	38

You can make 8 servings of dish A with 800 grams of ingredient 1, and 30 servings of dish B with 300 grams of ingredient 2, for a total of 38 servings.

Sample 3

Input	Output
2 800 300 801 300 800 301	0

You cannot make any dishes.

Sample 4

Input	Output
10 1000000 1000000 1000000 1000000 1000000 1000000 1000000 1000000 1000000 1000000 0 1 2 3 4 5 6 7 8 9 9 8 7 6 5 4 3 2 1 0	222222