Bank Notes

Time limit: 0.6s **Memory limit:** 64M

Note: This problem is an easier version of the POI problem Bank Notes from 2005.

The Byteotian Bit Bank (BBB) has the largest network of cash dispensers in the whole Byteotia. The BBB have decided to improve their dispensers and have asked you for help. The legal tender in Byteotia are bank notes of denominations $b_1, b_2, \ldots, b_n$. The BBB have concluded that the cash dispensers are to pay every sum in the smallest possible total number of notes.

Task

Write a programme that:

- reads from the standard input the description of the dispenser's notes stock and the sum to be paid off,
- determines the minimal total number of bank notes sufficient to pay the desired sum off,
- writes the result to the standard output.

Input

In the first line of the standard input the number of denominations is written n, $1 \leq n \leq 200$. The second line contains n integers $b_1, b_2, \ldots, b_n$ $(1 \leq b_i \leq 20\,000)$, separated by a single space. The third line contains n integers $c_1, c_2, \ldots, c_n$ $(1 \leq c_i \leq 20\,000)$, also separated by a single space; c_i is the number of bank notes of denomination b_i left in the cash dispenser. In the last, fourth line of input there is one integer k $(1 \leq k \leq 20\,000)$ - the sum to be paid off. For the test data, you are free to assume that the sum can be paid off in the available bank notes.

Output

The standard output should contain one integer denoting the minimal total number of bank notes sufficient to pay the sum off k.

Sample Input

```
3
2 3 5
2 2 1
10
```

Sample Output

```
3
```