Problem J. Book Shop

Time Limit 1000 ms
Mem Limit 524288 kB

You are in a book shop which sells n different books. You know the price and number of pages of each book.

You have decided that the total price of your purchases will be at most x. What is the maximum number of pages you can buy? You can buy each book at most once.

Input

The first input line contains two integers n and x: the number of books and the maximum total price.

The next line contains n integers $h_1, h_2, \ldots, h_n$: the price of each book.

The last line contains n integers $s_1, s_2, \ldots, s_n$: the number of pages of each book.

Output

Print one integer: the maximum number of pages.

Constraints

- $1 \leq n \leq 1000$
- $1 \leq x \leq 10^5$
- $1 \leq h_i, s_i \leq 1000$

Example

Input	Output
4 10 4 8 5 3 5 12 8 1	13

Explanation: You can buy books 1 and 3. Their price is $4 + 5 = 9$ and the number of pages is $5 + 8 = 13$.