

Build a Bridge

Time: 1 sec / Memory: 2 GB

Problem Statement

You have n planks, where the i -th plank has a length of w_i and a cost of p_i . Your task is to build a bridge with the minimum total cost, such that the length of the bridge is at least x .

In other words, the sum of the lengths of the selected planks must satisfy $\geq x$, and the total cost of these planks must be minimized.

Input

The first line contains two integers n, x : the number of planks and the required total length of the selected planks.

The second line contains n integers. The i -th integer represents the length of the i -th plank.

The third line contains n integers. The i -th integer represents the cost of the i -th plank.

Output

Output a single integer: the minimum cost to build the bridge. If it is impossible to achieve, output -1 .

Constraints

$$1 \leq n \leq 100$$

$$1 \leq x, w_i \leq 10^9$$

$$1 \leq p_i \leq 100$$

Example

Input 1:

```
5 100
25 30 70 55 26
26 37 89 61 38
```

Output 1:

```
124
```

Input 2:

```
6 1000
22 113 165 89 201 318
15 35 88 72 55 8
```

Output 2:

```
-1
```