Problem D. D

Time limit	1000 ms
Mem limit	131072 kB
OS	Linux

You have N items that you want to put them into a knapsack. Item i has value v_i and weight w_i.

You want to find a subset of items to put such that:

- The total value of the items is as large as possible.
- The items have combined weight at most W, that is capacity of the knapsack.

Find the maximum total value of items in the knapsack.

Input

$N\ W$

$v_1\ w_1$

$v_2\ w_2$

:

$v_N\ w_N$

The first line consists of the integers N and W. In the following lines, the value and weight of the i-th item are given.

Output

Print the maximum total values of the items in a line.

Constraints

- $1 \leq N \leq 100$
- $1 \leq v_i \leq 1000$
- $1 \leq w_i \leq 1000$
- $1 \leq W \leq 10000$

Sample Input 1

```
4 5
4 2
5 2
2 1
8 3
```

Sample Output 1

```
13
```

Sample Input 2

```
2 20
5 9
4 10
```

Sample Output 2

```
9
```