

## Problem B. Knapsack 2

**Time limit** 2000 ms

**Mem limit** 1048576 kB

### Problem Statement

There are  $N$  items, numbered  $1, 2, \dots, N$ . For each  $i$  ( $1 \leq i \leq N$ ), Item  $i$  has a weight of  $w_i$  and a value of  $v_i$ .

Taro has decided to choose some of the  $N$  items and carry them home in a knapsack. The capacity of the knapsack is  $W$ , which means that the sum of the weights of items taken must be at most  $W$ .

Find the maximum possible sum of the values of items that Taro takes home.

### Constraints

- All values in input are integers.
- $1 \leq N \leq 100$
- $1 \leq W \leq 10^9$
- $1 \leq w_i \leq W$
- $1 \leq v_i \leq 10^3$

### Input

Input is given from Standard Input in the following format:

```
N W
w1 v1
w2 v2
:
wN vN
```

### Output

Print the maximum possible sum of the values of items that Taro takes home.

### Sample 1

Input	Output
3 8 3 30 4 50 5 60	90

Items 1 and 3 should be taken. Then, the sum of the weights is  $3 + 5 = 8$ , and the sum of the values is  $30 + 60 = 90$ .

**Sample 2**

Input	Output
1 10000000000 10000000000 10	10

**Sample 3**

Input	Output
6 15 6 5 5 6 6 4 6 6 3 5 7 2	17

Items 2, 4 and 5 should be taken. Then, the sum of the weights is  $5 + 6 + 3 = 14$ , and the sum of the values is  $6 + 6 + 5 = 17$ .