Problem Y: Thievery

The richest man in Babylon has a shop with many exotic doodads, knickknacks and gizmos (as well as the occasional widget or gadget, but that is not relevant at the moment). A letter to the editor of the local newspaper has alerted you to a fortuitous fact: there will be a vivid fireworks show tonight, and you suspect that the light flares will distract the guards for the evening. With these weapons of distraction in place, you have until the morning to make your move or risk waiting too long: it's time to grab these treasures for yourself!

But there is a road block to you plan – this is no mere joy ride. The exit of the shop it secured by a pressure plate and will sound the alarm if you walk over it carrying too much. You'll have to play the numbers game: in persuit of the optimal heist, you have previously reconnoitered the shop's wares and determined exactly how much each item is worth and how heavy it is. So this is where it all starts: deciding which items you should take to maximise your ill-gotten profit.

Input

- One line with an integer N, $1 \leq N \leq 5000$, the number of items.
- One line with an integer W, $1 \leq W \leq 30000$, your carrying capacity.
- N lines with two integers, v_i and w_i, with $0 \leq v_i, w_i \leq 10000$.

Output

A line containing a single integer: the maximum value you can carry out of the shop.

Sample Input 1
```
3
2
10 2
6 1
6 1
```

Sample Output 1
```
12
```

Sample Input 2
```
3
3
15 3
12 2
12 2
```

Sample Output 2
```
15
```