

Knapsack I

Time limit: 2 sec.

Memory limit: 512MB

Description

You are planning to go on a trip! Since you can only bring a single knapsack¹, you have to carefully choose the items to bring. You have n items to choose from. The i -th item has its own weight w_i , and its own a value v_i . The value of an item stands for its 'importance'. For example, a tent is much more important than a guitar. You want to maximize the sum of the value of your knapsack, but without making your knapsack heavier than a weight of w_{\max} . Can you find the largest possible sum of the value of your knapsack?

Input

The first line contains two integers, n and w_{\max} . ($1 \leq n \leq 1000$, $1 \leq w_{\max} \leq 5000$)

The next n lines each contain two integers, w_i and v_i . ($1 \leq w_i, v_i \leq 5000$)

Output

Print the largest possible sum of the value of your knapsack.

¹ A canvas or leather bag that you carry on your back or over your shoulder.

Sample I/O

Input(s)	Output(s)
4 20 10 100 7 10 6 50 30 15	150

In this example, each of the four items stand for tent, guitar, foods, and a large screen TV. To maximize the sum of the value without exceeding the maximum possible weight, you should bring tent and foods. (and of course not the TV)