Bob has just won a shopping spree at his favorite store, Acme Electronics. Acme has provided Bob with a shopping cart that can hold L pounds of items. Bob wants to maximize the total value of items he can place into his shopping cart, without exceeding the weight limit. He can take no more than one of each available item.

For example, Bob has a shopping cart that can hold 10 pounds of items, and there are 4 items in the store:

```
5 4
3 2
10 8
4 8
```

Bob can maximize the value of his cart by selecting one item of value 10 (weight 8) and one of value 3 (weight 2) for a total of 13.

Input:

The input consists of a line containing two integers L and N, separated by a space. L is the maximum weight of items that he may place into his shopping cart, and N is the number of types of items in the store. Then N lines follow, each containing two integers P and W separated by a space. P contains the price of the item, and W contains the weight of the item. 1 <= L, N, P, W <= 1000.

Output:

Print a line containing the maximum total price of all items that Bob can fit into his cart.

Test 1

Test Input

```
10 4
```