

Q5 (20 Marks) Rice can be sold in multiple of kilograms. However, because of management issues, farmers set to sell rice in a few specific sack sizes. They also set the price not exactly proportional to the weight.

Given that a farm produces W kilograms of rice this year, find the maximum money that the farmer can earn from selling the rice.

INPUT:

LINE 1: an integer W , $W \leq 10000$, which is the total weight of the rice

LINE 2: an integer k , $k \leq 15$, which is the number of possible sack sizes

Each of the following k lines contains 2 integers. The first is the sack size (in kilogram) and the second is the corresponding price. These lines list the sack sizes in increasing order, and the smallest sack size is 1 kilogram.

OUTPUT:

The maximum money the farmer can earn from selling W kilograms of rice.

EXAMPLE

INPUT

OUTPUT

20	45
5	
1 1	
4 9	
9 17	
12 26	
17 35	