H. FPT Bus Hiring

Time Limited: 30 seconds

FPT University's Hoa Lac campus is located about 40 km from the center of Hanoi. Therefore, the administrative department often has to book the buses to take the staff and lecturers. In order to do this, he/she has to count the number of people, then calculate to book different types as well as the number of buses, such that the cost is the cheapest. The bus has more seats is more expensive. Problem can be described as following. You are asked to build a program that helps him/her to perform the calculation.

- C is the number of people to pick up. K is the number of bus types
- m_i is the cost that FPT University will have to pay to hire 01 bus of i-th type.
- a_i is the number of seats of the i-th bus type such that:

$$\sum_{i=1}^{K} a_i x_i \geq C$$

Where $x_i \ \ is$ an integer and it is represents booked number of vehicles for the i-th bus type,

The goal of this problem is to minimize the total cost which FPT University have to pay but still assure that every people must be picked up. We can model the problem as:

$$M = \sum_{i=1}^{K} m_i x_i$$

Your task is to find $x_i \ \forall \ i = 1 \ldots K$ so that M is minimized.

Example:

There are 3 types of buses and 85 people are waiting to be picked up, described as following:

$a_1 = 30$, $m_i = 15$

$a_2 = 9$, $m_2 = 9$

$a_3 = 16, m_3 = 12.8$

The solution: $x_1 = 3$, $x_2 = 0$, $x_3 = 0$

Input:

First line: the number of people to pickup

Second line: n - the number of types of buses

N next line: a_i (the number of seats of the bus type) and m_i (the cost to hire it)

Output:

The number of vehicles to book in each type in the order from top to bottom of the bus type input

Sample input and output:

Input:	**Output:**
85 3 30 15 9 9 16 12.8	3 0 0
55 4 30 22 9 9 16 12.8 4 6	1 1 1 0