UVa Online Judge

11003 Boxes

We have some boxes numbered 1 to N. The dimensions of all boxes are identical. Now we have to stack up some of the boxes, subject to the following constraints:

1. One cannot put more than one boxes directly upon a box;
2. Boxes with lower serial numbers are not to be put upon one with a higher number;
3. The weight and maximum load for each box are given. The total weight of all boxes upon a box should not exceed its maximum load.

Please write a program that finds the maximum number of boxes that can be stacked up according to the above constraints.

Input

The first line of each set of input is an integer N ($1 \leq N \leq 1000$). This is followed by N lines, each with two integers, both ≤ 3000, representing the weight and maximum load of each box respectively.

Input ends with a case where $N = 0$.

Output

Each line of your output should give the number of boxes that can be stacked up.

Sample Input

```
5
19 15
7 13
5 7
6 8
1 2
0
```

Sample Output

```
4
```