

You are making a pile of boxes. The boxes have cubic dimensions (equal edges) and their upper surfaces are open, so a smaller box will fall into a larger one (container), but a larger box will stay on the smallest top (Figure 1).

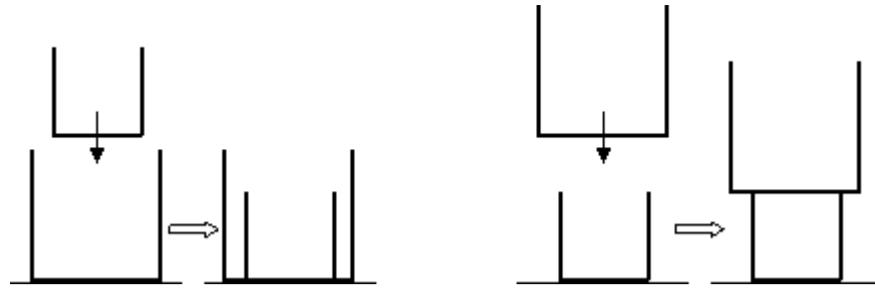


Figure 1 - Boxes falling over a pile

Furthermore, these boxes have strange properties: they are permeable to other smaller boxes, so one box may fall through the interior of larger boxes until a smaller one or the floor is found (Figure 2).

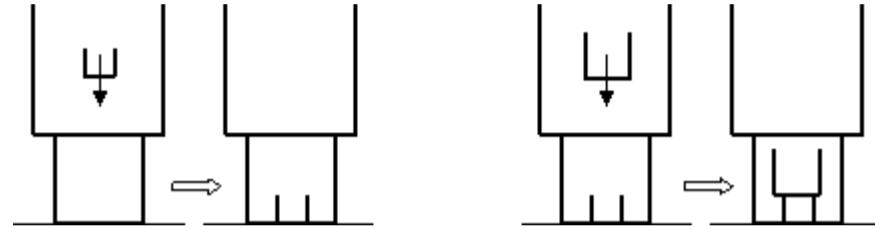


Figure 2 - Boxes are permeable to smaller ones

There is one restriction: if one box does not fit entirely in the height of a potential container, then it stays in the upper possible level (Figure 3).

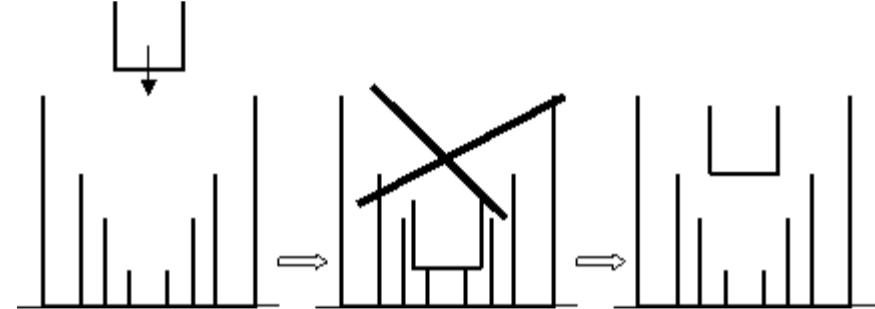


Figure 3 - One box must fit entirely in its container

Given a sequence of boxes, it is necessary to evaluate the total pile height. All the cubes have different dimensions.

Input

The input will contain several test cases, each of them as described below. Consecutive test cases are separated by a single blank line.

The input is a sequence of text lines, as follows.

The first text line contains the number NC (integer format) of boxes. It is followed by a sequence of NC text lines containing, each one, the length of a box (integer format). The maximum number of boxes is 100.

Output

For each test case, output on a line by itself one integer number, representing the total pile height.

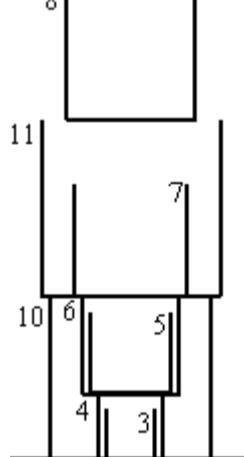


Figure 4 - Pile generated in the example

Sample Input

```
8
10
4
6
3
11
7
8
5
```

Sample Output