Flatlandian Islands (/problems/flatlandianislands/info.pdf)

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You are the executive hacking advisor for an upcoming film about pirates in the Caribbean sea. Lucky for you, the film is planning to film on-location in the Flatlandia archipelago! Located south of Jamaica and north of Cuba, the pristine islands of Flatlandia are famous for their Caribbean scenery, as well as their surprising quality of being completely two-dimensional.

The film's protagonist, Captain Fact Arrow, discovers that her ship is out of drinkable water, and she must land on one of these islands to resupply before her crew dehydrates. Before landing on an island, Captain Fact would like to know how much fresh water is contained in this island's lakes. Her trusty navigator provides maps of all the Flatlandian islands to look for the lakes.

The islands, being two-dimensional, have height and width, but not length. They all look something like this island:

```
...#.
.#.##
#####
```

When it rains on the islands, water will collect in the spaces where it cannot flow out horizontally towards the sea. These spaces are lakes that natural rainfall will keep completely full year-round. Because Flatlandian islands are two-dimensional, water that can't flow left or right out of an island into the ocean will be trapped in a fresh water lake, even if it is at sea level.

This island holds 1 square meter of water:

```
...#.
.#w##
#####
```

Cartographers charted the land mass of each of the Flatlandian islands and developed a shorthand to reduce the size of their maps. **Flatlandian maps are a list of non-negative integers, representing the height of each meter of an island's surface above sea level.** Captain Fact Arrow's map of the island shown above looks like this:

```
1 2 1 3 2
```

As skilled at computer programming as she is at pirating, Captain Fact saves the day by writing a computer program to measure the amount of water contained by each island. As the film's executive hacking advisor, your task is to write that program.

Input

An input case will start with a line containing a single integer **T** (0 <= T <= 100), indicating the number of islands in the input. After this, there will be **T** groups of 2 lines each.

In each group, the first line will contain a single integer, **N** (0 <= **N** <= 10000), indicating the width of the island. The second line will contain **N** space-separated non-negative integers, each indicating the height of each consecutive square meter of that island above sea level.

Output

Output on a single line the integer value of the total capacity of water of the island described by the input.

Sample Case 1

```
2
5
1 2 1 3 2
4
1 2 3 4
```

```
1
0
```

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