Problem
Defense Line
Time limit: 2 seconds

Little Cyan Fish has been hired to test yet another tower-defense game. The studio insists that the game is almost ready to ship, although the boss still walks along a perfectly straight line, the turrets can only be placed at integer coordinates, and the boss's shield has developed a highly specific grudge against the rightmost turret on the field.


Prepared to deploy a turret.

The battlefield is represented by the number line. There are n turrets available for deployment. The i-th turret has a_i units of energy and can be deployed at most once. Deploying a turret means choosing an empty integer coordinate and placing a turret there. A turret with positive energy is active; once its energy becomes 0, it disappears from the battlefield. This is called automatic cleanup in the manual.

The game is played in rounds. During each round, the following actions happen, in order:

1. Little Cyan Fish chooses one of two options: deploy one previously undeployed turret at an empty integer coordinate on the number line, or do nothing.
2. Each deployed turret whose energy is positive deals 1 damage to the boss.
3. Among all deployed turrets whose energy is positive, the one at the greatest coordinate is cursed by the boss and loses 1 energy. If that turret's energy drops to 0, the turret disappears from the defense line.

The simulator is configured to run for the first 9^{9^9} rounds, because someone typed that number into a settings panel and nobody wants to touch production. Help Little Cyan Fish find the maximum total damage that can be dealt to the boss.

Input

There are multiple test cases. The first line of the input contains a single integer T ($1 \le T$), indicating the number of test cases.

For each test case, the first line contains an integer n ($1 \le n \le 2 \times 10^5$). The second line contains n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 10^9$).

It is guaranteed that the sum of n over all test cases does not exceed 2×10^5.

Output

For each test case, output a single line containing a single integer: the maximum total damage.

Sample Input 1	Sample Output 1
4 3 3 1 1 3 2 2 2 4 4 5 6 7 3 123456789 987654321 998244353	9 12 60 5093498490

Explanation of Sample 1: Place a turret with energy 3 at 0, then place turrets with energy 1 at $-1, -2$ successively.