B. Collecting Game

1 second, 256 megabytes

You are given an array a of n positive integers and a score. If your score is greater than or equal to a_i, then you can increase your score by a_i and remove a_i from the array.

For each index i, output the maximum number of additional array elements that you can remove if you remove a_i and then set your score to a_i. Note that the removal of a_i should not be counted in the answer.

Input

Each test contains multiple test cases. The first line contains an integer t ($1 \le t \le 5000$) — the number of test cases. The description of the test cases follows.

The first line of each test case contains a single integer n ($1 \le n \le 10^5$) — the length of the array.

The second line of each test case contains n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 10^9$) — the elements of the array.

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

Output

For each test case, output n integers, the i-th of which denotes the maximum number of additional array elements that you can remove if you remove a_i from the array and then set your score to a_i.

input

```
4
5
20 5 1 4 2
3
1434 7 1442
1
1
5
999999999 999999999 999999999 1000000000 1000000000
```

output

```
4 3 0 3 1
1 0 2
0
4 4 4 4 4
```

In the first test case, the answers are as follows:

If we start with $i = 4$, our initial score is $a_4 = 4$ and $a = [20, 5, 1, 2]$. We can remove 3 additional elements in the following order:

1. Since $4 \ge 1$, we can remove 1 and our score becomes 5. After this, $a = [20, 5, 2]$.
2. Since $5 \ge 5$, we can remove 5 and our score becomes 10. After this, $a = [20, 2]$.
3. Since $10 \ge 2$, we can remove 2 and our score becomes 12. After this, $a = [20]$.

If we start with $i = 1$ we can remove all remaining elements in the array, so the answer is 4.

If we start with $i = 2$, we can remove 3 additional elements in the following order: 1, 4, 2.

If we start with $i = 3$, we can remove no additional elements.

If we start with $i = 5$, we can remove 1 additional element: 1.