L – Random Numbers

Memory limit: 1024 MB
Time limit: 2 s

AMPPZ 2023
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A **random** permutation of numbers from 1 to n is given. In other words, each number from 1 to n appears exactly once, and their order is random.

We are looking for *interesting* intervals, which are those where the sum of elements in the interval is equal to the square of its length. Formally, in the sequence $a_1, a_2, \ldots, a_n$, an interesting interval corresponds to the index range $[p, q]$ $(1 \leq p \leq q \leq n)$ such that:

$$\left(\sum_{i=p}^{q} a_i\right) = (q - p + 1)^2$$

Count the number of interesting intervals.

Input

The first line of the input contains an integer t $(1 \leq t \leq 200,000)$, which represents the number of test cases. Each test case is described in two lines.

The first line of each test case contains an integer n $(1 \leq n \leq 200,000)$, which represents the length of the sequence.

The second line of each test case contains n different integers $a_1, a_2, \ldots, a_n$ $(1 \leq a_i \leq n,\ a_i \neq a_j \text{ for } i \neq j)$. The sequence is randomly selected, meaning each of the $n!$ sequences has an equal probability of being chosen, independently for different test cases. However, the organizers can choose the number t and the numbers n arbitrarily in each test case.

The sum of n over all test cases does not exceed 200,000.

Output

The output should consist of t lines. The i-th line should contain a single integer – the number of interesting intervals in the i-th test case.

Example

For the input data:

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

the correct result is:

```
2
2
```

Explanation of the example:

In the first test case, the interesting intervals are $[2, 2]$ (because $1 = 1^2$) and $[2, 3]$ (because $1 + 3 = 2^2$).

In the second test case, the interesting intervals are $[1, 3]$ (because $3+4+2 = 3^2$) and $[5, 5]$ (because $1 = 1^2$).