Problem B
Bin Packing

Time limit: 5 seconds
Memory limit: 1 GB

Problem Description

Let's solve a NP Hard problem today.

There are N objects, the i-th of which has size A_i ($1 \leq A_i \leq 12$). You have several bins of size 12. Multiple objects can be fit into the same bin if and only if the sum of their sizes is at most 12.

Find the minimum number of bins needed to fit all N objects.

There is a **special constraint** on the input.

1. For all non-sample files, the number of test cases T and the number of objects N are fixed. ($T = 100, N = 1000$).
2. The object sizes are generated randomly. Formally, each A_i is independently chosen from a uniform distribution on the set of integers in the interval $[1, 12]$.

Input Format

- The first line of input will contain a single integer T, denoting the number of test cases.
- Each test case consists of two lines of input.
  - The first line of each test case contains N - the number of objects.
  - The second line contains N integers - $A_1, A_2, \ldots, A_N$ - the sizes of the objects.

Output Format

For each test case, output on a new line the minimum number of bins needed.

Constraints

For all non-sample tests:

- $T = 100$
- $N = 1000$
- $1 \leq A_i \leq 12$
- Each A_i is a uniformly randomly generated integer in the range $[1, 12]$.

There are exactly 19 non-sample tests.

Samples

Sample Input 1

```
10
5
8 2 2 3 9
3
11 1 1
8
9 8 2 3 4 2 2 12
10
2 2 2 2 2 2 3 3 3 3
6
5 2 8 4 1 11
8
12 12 9 8 2 8 4 4
5
5 5 6 6 6
8
10 12 5 4 8 2 2 11
7
5 1 5 7 9 4 4
6
12 1 1 9 3 5
```

Sample Output 1

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

Sample Explanation

Test case 1: We can distribute the objects like this:

- Bin 1: Objects 1, 2 and 3. The sum of their sizes is exactly 12.
- Bin 2: Objects 4 and 5. The sum of their sizes is also exactly 12.

Thus, 2 bins suffice.