ACM Ethiopian Collegiate Programming Contest

Problem I
Q-Index
Time Limit: 1 Second

Any Ph.D. candidate in ICPC University should qualify for his/her Ph.D. degree in terms of the number of his/her papers and their citations. For this, the university has defined a quantity, called *q*-index. To measure the importance of the papers, this index is based on the set of the most cited papers and the number of citations that they have received in other papers. A candidate who has published total $n \geq 1$ papers has *q*-index k if k of n papers have at least k citations each, and the other $n - k$ papers have at most k citations each.

For example, we suppose that a candidate has published five papers, each cited 8, 4, 5, 3, 10 times by other papers. The candidate has a paper whose citation is at least one, but the other four papers are cited more than once, so the *q*-index is not 1. For all five papers, there are two papers whose citations are less than 5, so the *q*-index is not 5. We finally know that the *q*-index becomes 4 because there are four papers cited at least four times and the other one paper cited at most four times.

Given citation numbers of the papers published by a candidate, you write a program to calculate the *q*-index.

Input
Your program is to read from standard input. The input starts with a line containing an integer, n ($1 \leq n \leq 1{,}000$), where n is the number of papers published by a Ph.D. candidate. The next line contains the citation numbers of the n papers, separated by a space. Each citation number is an integer between 0 and 10,000, inclusively.

Output
Your program is to write to standard output. Print exactly one line for the input. The line should contain a non-negative integer representing the *q*-index.

The following shows sample input and output for three test cases.

Sample Input 1	Output for the Sample Input 1
5 8 4 5 3 10	4

Sample Input 2	Output for the Sample Input 2
4 0 0 0 0	0

Sample Input 3	Output for the Sample Input 3
6 12 7 6 8 9 10	6