CMPUT 274 - Tangible Computing
Morning Problem: Boxes

Description

After waiting anxiously by the phone all night, you have finally received a call telling you you've been invited to your favorite gameshow,"What's in the Box?". In this game, contestants are presented with n boxes and told about m types of items. Each of the n boxes contains between 0 and m items, where each item is distinct (there will never be more than one of each type of item in an individual box). The contestant's goal is to collect each of the m possible items while opening as few boxes as possible.

You have no clue what is in each individual box, but before the contest, you are given a list of m numbers indicating how many total items of each type there are. What is the minimum amount of boxes you must open to **guarantee** you collect at least one of each of the m items?

Input

There are two lines of input.

The first line of input contains two space-separated integers n and m ($1 \leq n, m \leq 10^5$) - the number of boxes and the number of items, respectively.

The second line of input contains m space-separated integers $I_1, I_2, ..., I_m$ ($1 \leq I_i \leq n$), where I_i indicates the total number of item i.

Output

Output should consist of one integer - the minimum amount of boxes you must open to guarantee you collect at least one of each of the m items.

Sample Input 1

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10 2
5 7
```

Sample Output 1

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6
```

Sample Input 2

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10 3
10 10 10
```

Sample Output 2

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1
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