

Picture Puzzle

Hedgehog Pichliac received a special picture puzzle for his birthday. It consists of an empty grid $n \times n$ and k sets of pictures. Each set contains a certain number of identical pictures, but the pictures are different among the sets, and altogether there are exactly n^2 pictures.

Pichliac's task is to place the pictures in the grid to create as many identical rows as possible. If, for example, the grid has size 3 and there are 4 stars, 2 pluses, 2 dots, and 1 equals sign, his grid may look like this:

```
* * +
. * *
+ = .
```

In this case, however, he has only one identical row because all the rows look different. If he rearranged the pictures in the following way, he would get 2 identical rows, which is the best he can achieve.

```
* * .
* * .
+ + =
```

Help him find out how many identical rows he can create with the given set of pictures.

Task

Given the size of the grid, the number of different sets of pictures, and the sizes of the individual sets, determine the maximum number of identical rows that Pichliac can create with these pictures.

Input

The first line contains two numbers n and k ($1 \leq n \leq 40000$, $1 \leq k \leq 50000$) – the size of the grid and the number of sets of pictures.

Followed by k lines, each containing one integer between 1 and n^2 indicating the number of pictures in the respective set. The sum of these numbers is exactly n^2 .

Output

Print one integer – the maximum possible number of identical rows that we can create by arranging the pictures in the grid.

Examples

input

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

output

```
2
```

This is the example from the task.