Randy Company has N ($1 \leq N \leq 100$) storages. Company wants some men to keep them safe. Now there are M ($1 \leq M \leq 30$) men asking for the job. Company will choose several from them. Randy Company employs men following these rules:

1. Each keeper has a number P_i ($1 \leq P_i \leq 1000$) , which stands for their ability.
2. All storages are the same as each other.
3. A storage can only be lookd after by one keeper. But a keeper can look after several storages. If a keeper's ability number is P_i, and he looks after K storages, each storage that he looks after has a safe number $U_j = P_i \div K$.(Note: U_j, P_i and K are all integers). The storage which is looked after by nobody will get a number 0.
4. If all the storages is at least given to a man, company will get a safe line $L = \min U_j$
5. Every month Randy Company will give each employed keeper a wage according to his ability number. That means, if a keeper's ability number is P_i, he will get P_i dollars every month. The total money company will pay the keepers every month is Y dollars.

Now Randy Company gives you a list that contains all information about N, M, P, your task is give company a best choice of the keepers to make the company pay the least money under the condition that the safe line L is the highest.

Input

The input file contains several scenarios. Each of them consists of 2 lines:

The first line consists of two numbers (N and M), the second line consists of M numbers, meaning P_i ($i = 1..M$). There is only one space between two border numbers.

The input file is ended with $N = 0$ and $M = 0$.

Output

For each scenario, print a line containing two numbers L(max) and Y(min). There should be a space between them.

Sample Input

```
2 1
7
1 2
10 9
2 5
10 8 6 4 1
5 4
1 1 1 1
0 0
```

Sample Output

```
3 7
10 10
8 18
0 0
```