2439   Balanced Races

The organizing committee of a popular charity fair in a small town wants to include walking races that can be run in a competitive format. The idea is that competitiveness will make the races more entertaining, attract more viewers and thus more contributions. The proposed new format is to divide the walkers into heats that are competitive; that is, the time difference between the first and last participants to arrive at finish line in each heat is as small as possible. The heats are then scheduled to run independently through the day of the fair. The organizers will provide us with information about the number of registered walkers along with the best available estimate of the times they take to finish the race course, the number of heats they can schedule and the maximum number of participants allowed in each heat. Your task is to read the provided information and then organize the participants into heats that satisfy the given constraints and minimizes over all the heats the maximum time difference within a heat, or warn the organizers that their constraints cannot be satisfied.

Input

The input consists of a series of races. The first line in each race description consists of three positive integers N, M and Q that are separated by single spaces. N represents the largest number of walkers allowed to participate in each heat, M represents the largest number of heats that the organizers can schedule and Q is the number of walkers registered in the race. Each of the following Q lines contains an integer T, $0 < T \leq 10000$, that represents the known time for one of the registered walkers to finish the race course. $1 \leq N, M \leq 100$ and $1 \leq Q \leq 10000$.

Input is terminated by a race with N, M and Q equal to '-1'. This race should not be processed.

Output

For each race the output consists of a single line that contains the race number starting with the value of one (1), followed by a ':', as shown in the Sample Output below, and then followed by one of the following formats:

1. N

2. `Organization Fault!`

N is the minimum, over all the heats, of maximum difference of finish times within each heat.

Sample Input

```
3 2 3
21
20
13
3 3 12
21
18
10
16
10
10
```

```
89
11
11
6
8
3
-1 -1 -1
```

Sample Output

```
Race 1: 1
Race 2: Organization Fault!
```