Waiter

You are a waiter at a party. There are N stacked plates. Each plate has a number written on it. You start picking up the plates from the top one by one and check whether the number written on the plate is divisible by P(a prime). The starting value of P is 2. If the number is divisible, you stack that plate separately with other P divisible plates. If not, you stack that plate separately with the other plates that are not divisible by P.

In the next iteration, the value of P changes to the next prime number after P. You check the plates from the pile that were not divisible by P in the last iteration. You repeat this process a number of times. By doing this process Q times, you end up getting different piles of plates. The plates that are not divisible by the Q^{th} prime (which is our last iteration), from the last pile of plates. Say you have M (it is clear that M is either Q or $Q+1$) different piles of plates. Starting from the first pile, print the number written on the plate while removing plates from a pile in the same order as described above. Do this process for all the M piles. Print one value in a single line.

Input Format

The first line contains two space separated integers, N and Q.
The next line contains N space separated integers representing the initial pile of plates. The leftmost value represents the bottom plate of the pile.

Constraints

$1 \leq N \leq 5 \times 10^4$
$2 \leq number_i \leq 10^4$
$1 \leq Q \leq 1200$

Output Format

Output N lines. Each line contains a number written on the plate. Printing should be done in the order defined above.

Sample Input

```
5 1
3 4 7 6 5
```

Sample Output

```
4
6
3
7
5
```

Explanation

As Q is 1, we can have a maximum of 2 piles. In this case, we will have 2 piles. The first pile (for $P = 2$) will be $[4, 6]$ and the second pile will be $[3, 7, 5]$.

Note: Writing left to right represents the top to bottom arrangement of a pile.

So, we will print them in the order $4, 6, 3, 7, 5$.