

You are a waiter at a party. There is a pile of numbered plates. Create an empty *answers* array. At each iteration,  $i$ , remove each plate from the top of the stack in order. Determine if the number on the plate is evenly divisible by the  $i^{\text{th}}$  prime number. If it is, stack it in pile  $B_i$ . Otherwise, stack it in stack  $A_i$ . Store the values in  $B_i$  from top to bottom in *answers*. In the next iteration, do the same with the values in stack  $A_i$ . Once the required number of iterations is complete, store the remaining values in  $A_i$  in *answers*, again from top to bottom. Return the *answers* array.

## Example

$A = [2, 3, 4, 5, 6, 7]$

$q = 3$

An abbreviated list of primes is  $[2, 3, 5, 7, 11, 13]$ . Stack the plates in reverse order.

$A_0 = [2, 3, 4, 5, 6, 7]$

*answers* = []

Begin iterations. On the first iteration, check if items are divisible by 2.

$A_1 = [7, 5, 3]$

$B_1 = [6, 4, 2]$

Move  $B_1$  elements to *answers*.

*answers* = [2, 4, 6]

On the second iteration, test if  $A_1$  elements are divisible by 3.

$A_2 = [7, 5]$

$B_2 = [3]$

Move  $B_2$  elements to *answers*.

*answers* = [2, 4, 6, 3]

And on the third iteration, test if  $A_2$  elements are divisible by 5.

$A_3 = [7]$

$B_3 = [5]$

Move  $B_3$  elements to *answers*.

*answers* = [2, 4, 6, 3, 5]

All iterations are complete, so move the remaining elements in  $A_3$ , from top to bottom, to *answers*.

*answers* = [2, 4, 6, 3, 5, 7]. Return this list.

## Function Description

Complete the *waiter* function in the editor below.

*waiter* has the following parameters:

- $int\ number[n]$ : the numbers on the plates
- $int\ q$ : the number of iterations

## Returns

- $int[n]$ : the numbers on the plates after processing

## 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, i.e.,  $A$ .

## Constraints

$$1 \leq n \leq 5 \times 10^4$$

$$2 \leq number[i] \leq 10^4$$

$$1 \leq q \leq 1200$$

## Sample Input

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

## Sample Output

```
4
6
3
7
5
```

## Explanation

Initially:

$$A_0 = [3, 4, 7, 6, 5] \leftarrow \text{TOP}$$

After 1 iteration:

$$A_0 = [] \leftarrow \text{TOP}$$

$$B_1 = [6, 4] \leftarrow \text{TOP}$$

$$A_1 = [5, 7, 3] \leftarrow \text{TOP}$$

We should output numbers in  $B_1$  first from top to bottom, and then output numbers in  $A_1$  from top to bottom.