

## Problem E. Equal Numbers

Input file: `equal.in`                      Time limit: 3 seconds  
Output file: `equal.out`                      Memory limit: 512 megabytes

You are given a list of  $n$  integers  $a_1, \dots, a_n$ . You can perform the following operation: choose some  $a_i$  and multiply it by any positive integer.

Your task is to compute the minimum number of different integers that could be on the list after  $k$  operations for all  $0 \leq k \leq n$ .

### Input

The first line of the input contains single integer  $n$  ( $1 \leq n \leq 3 \cdot 10^5$ ). The second line of the input contains  $n$  integers  $a_i$  ( $1 \leq a_i \leq 10^6$ ).

### Output

Output a single line that contains  $n + 1$  integers. The  $i$ -th integer should be the minimum possible number of different integers in the list after  $i - 1$  operations.

### Example

<code>equal.in</code>	<code>equal.out</code>
6 3 4 1 2 1 2	4 4 3 3 2 2 1