

# Problem I

## In Search of the Lost Array

Time limit: 2 seconds

Memory limit: 2048 megabytes

### Problem Description

In a forgotten realm, a group of adventurers stumbles upon a set of mysterious scrolls hidden deep within an ancient library. These scrolls hold the secrets of a powerful numerical array that controls the magic of the realm. However, the scrolls have been damaged over time, and only fragments remain. Specifically, the adventurers discover a sequence of numbers representing the products of adjacent elements of an unknown array  $A$ .

The original array  $A$  consists of  $n$  integers  $a_1, a_2, \dots, a_n$  where  $1 \leq a_i \leq 100$  for  $1 \leq i \leq n$ . The only information remaining on the scrolls is a sequence of  $n - 1$  integers  $b_1, b_2, \dots, b_{n-1}$ , which are unordered products of adjacent elements from  $A$ . In other words:

$$\{b_1, b_2, \dots, b_{n-1}\} = \{a_1 \times a_2, a_2 \times a_3, \dots, a_{n-1} \times a_n\}$$

Your task is to help the adventurers reconstruct one possible original array  $A$ . If there are multiple valid arrays  $A$  that could result in the same sequence  $b$ , you may output any of them.

### Input Format

The first line contains a single integer  $n$ , representing the length of the array  $A$ . The second line contains  $n - 1$  space-separated integers  $b_1, b_2, \dots, b_{n-1}$ , representing the products of adjacent elements in the array  $A$ .

### Output Format

If there is no such array  $A$ , then print **No** on a line. Otherwise, print **Yes** on the first line. Then, output  $n$  space-separated integers  $a_1, a_2, \dots, a_n$  on the second line, where  $\{b_1, b_2, \dots, b_{n-1}\} = \{a_1 \times a_2, a_2 \times a_3, \dots, a_{n-1} \times a_n\}$ .

### Technical Specification

- $1 < n \leq 18$ .
- $1 \leq a_i \leq 100$  for  $i \in \{1, 2, \dots, n\}$
- $1 \leq b_i \leq 10000$  for  $i \in \{1, 2, \dots, n - 1\}$

#### Sample Input 1

```
8
42 32 84 54 48 40 16
```

#### Sample Output 1

```
Yes
5 8 4 21 2 8 6 9
```

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Sample Input 2

6  
45 4 5 4 3

Sample Output 2

Yes  
3 1 4 1 5 9

Sample Input 3

2  
3246

Sample Output 3

No