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General Problem Description

Given N integers, construct an array with N numbers where ith number is the product of all the elements but itself.

Additional Problem Specifics

Contains number 0
Is there any negative number
Range of N numbers
Could range of all product be larger than INT_MAX

Proposed Algorithm

```
#include <iostream>
#include <cstdio>
using namespace std;
int main() {
	int a[1000], product_prefix[1000];
	int n;
	cin >> n;
	if (n > 1000 || n <= 3) {
		printf("Number of integer should be less than 1000 and greater than 3\n");
		return -1;
	}
	for (int i = 0; i < n; i ++) {
		cin >> a[i];
		product_prefix[i] = i == 0 ? a[i] : product_prefix[i - 1] * a[i];
	}
	long long product_suffix = 1, product;
	for (int i = n - 1; i >= 0; i --) {
		product = (i > 0) ? product_prefix[i - 1] : 1;
		product = product * product_suffix;
		product_suffix = product_suffix * a[i];
		a[i] = product;
	}
	for (int i = 0; i < n; i ++)
		cout << a[i] << endl;
}
```