

Tell the Average



James is very naive in Mathematics, He always makes new things out of a given list of integers. Today he is given a list L , so he creates a value S out of it.

S from a given list can be calculated as follows.

```
value_of_S(list L)
{
    while ((number of elements in L) > 1)
    {
        a = L[0]
        b = L[1]
        delete L[1]
        L[0] = a+b+ab
    }
    return L[0] % 1000000007
}
```

James has an ample amount of time, so he calculates the values of S for all the permutations of the given list L and finds their average value. Then he asks you to report that value.

Input Format

The first line contains an integer N , the number of integers in the list.

The second line contains N integral values, $L[0], \dots, L[N - 1]$, separated by single spaces.

Output Format

Print the [floor](#) of the average value.

Constraints

$$2 \leq N \leq 10^4$$

$$2 \leq L[i] \leq 10^6$$

Sample Input

```
2
2 3
```

Sample Output

```
11
```

Explanation

The S value corresponding to the two permutations of the given list is **11**.