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, $L[0], \ldots, L[N-1]$, 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.