Plus Minus

Given an array of integers, calculate which fraction of its elements are *positive*, which fraction of its elements are *negative*, and which fraction of its elements are *zeroes*, respectively. Print the decimal value of each fraction on a new line.

Note: This challenge introduces precision problems. The test cases are scaled to six decimal places, though answers with absolute error of up to 10^{-4} are acceptable.

Input Format

The first line contains an integer, N, denoting the size of the array.

The second line contains N space-separated integers describing an array of numbers $(a_0,a_1,a_2,\ldots,a_{n-1})$

Output Format

You must print the following 3 lines:

- 1. A decimal representing of the fraction of *positive* numbers in the array.
- 2. A decimal representing of the fraction of *negative* numbers in the array.
- 3. A decimal representing of the fraction of zeroes in the array.

Sample Input

```
6
-4 3 -9 0 4 1
```

Sample Output

```
0.500000
0.333333
0.166667
```

Explanation

There are $\bf 3$ positive numbers, $\bf 2$ negative numbers, and $\bf 1$ zero in the array.

The respective fractions of positive numbers, negative numbers and zeroes are $rac{3}{6}=0.500000$,

$$\frac{2}{6} = 0.333333$$
 and $\frac{1}{6} = 0.166667$, respectively.