

DMOPC '14 Contest 1 P3 - New Students

It's almost time for mid-term marks and Mr. Sidhu, an excellent math teacher, wants to calculate the class average. Since Mr. Sidhu is such a high-performing teacher, many students (represented by S ($1 \leq S \leq 100\,000$)) have transferred into his math class (which initially had I ($0 \leq I \leq 100\,000$) students), bringing along their grades from their previous class.

The problem is that Mr. Sidhu wants to see how the class average is affected after each student transfers into his class one by one. Being the nice student you are, you have decided to write him a program that does exactly that.

Input Specification

The first line of input will contain I , the number of initial students in his class. This is then followed by I lines, with each representing the mark of every initial student ($0 \leq \text{mark} \leq 1000$).

The next line consists of S , which represents the number of students transferring into his class.

You may assume that their timetable changes have all been approved by the Guidance Department.

This is followed by S lines, with every one of them showing the mark the student had in his or her initial class.

Note that for 80% of the marks, the additional constraints will hold: ($1 \leq I, S \leq 1000$)

Output Specification

The output should consist of S lines, each containing the class average after each student transfers. Your output should be accurate to an absolute or relative error of 10^{-3} .

Sample Input

```
2
50
80
2
100
26
```

Sample Output

```
76.667
64.000
```

Explanation for Sample Output

$$\frac{50 + 80 + 100}{3} = 76.6$$

$$\frac{50 + 80 + 100 + 26}{4} = 64$$