

Paret's principle, also known as the "80/20 rule", states that in many situations 80% of results come from 20% of (the most important) causes. For instance, Microsoft found that, by fixing 20% of most commonly reported bugs, they would eliminate 80% of downtime in their systems. In the business world, it is often said that 80% of income comes from 20% of the most important clients. In the world of mobile games, when it comes to games with free basic functionality, 50% of profit comes from 0.5% of players. Some say that 80% of your success will come from 20% of your activities.

It is a known fact that 80% of the world's goods is owned by 20% of (the richest) people. Your task is to check the validity of this rule based on the bank accounts owned by clients of a single bank. Is it true that 20% of accounts hold 80% of the total money? Does a stronger claim hold, for instance, that only 10% of accounts hold 85% of the total money?

More precisely: based on the given account balances of N bank clients, your task is to find numbers A and B with the maximal difference $B - A$ such that we can say that precisely $A\%$ of accounts hold $B\%$ of the total money of all clients of the bank.

INPUT

The first line of input contains the integer N ($1 \leq N \leq 300\,000$), the number of clients in the bank.

The following line contains N integers from the interval $[0, 100\,000\,000]$, the balances of bank accounts in euros.

OUTPUT

In two lines, you must output two real numbers from the task, A and B , omitting the percentage sign. Solution with the greatest $B - A$ difference will be **unique**. A deviation from the official solution for less than 0.01 will be tolerated.

SAMPLE TEST

input

2
100 200

output

50.0
66.66666666666666

input

8
100100 10 100 1000 1 10100
90100 100100

output

37.5
96.28172769816027

Clarification of the first test case: 50% of accounts (one account, the one with 200 euros), contains two thirds, 66.666667% of the total money.