B. Average Sleep Time

It's been almost a week since Polycarp couldn't get rid of insomnia. And as you may already know, one week in Berland lasts k days!

When Polycarp went to a doctor with his problem, the doctor asked him about his sleeping schedule (more specifically, the average amount of hours of sleep per week). Luckily, Polycarp kept records of sleep times for the last n days. So now he has a sequence $a_1, a_2, ..., a_n$, where a_i is the sleep time on the i-th day.

The number of records is so large that Polycarp is unable to calculate the average value by himself. Thus he is asking you to help him with the calculations. To get the average Polycarp is going to consider k consecutive days as a week. So there will be $n - k + 1$ weeks to take into consideration. For example, if $k = 2$, $n = 3$ and $a = [3, 4, 7]$, then the result is .

You should write a program which will calculate average sleep times of Polycarp over all weeks.

Input

The first line contains two integer numbers n and k ($1 \leq k \leq n \leq 2 \cdot 10^5$).

The second line contains n integer numbers $a_1, a_2, ..., a_n$ ($1 \leq a_i \leq 10^5$).

Output

Output average sleeping time over all weeks.

The answer is considered to be correct if its absolute or relative error does not exceed 10^{-6}. In particular, it is enough to output real number with at least 6 digits after the decimal point.

Examples

input
3 2 3 4 7
output
9.0000000000

input
1 1 10
output
10.0000000000

input
8 2 1 2 4 100000 123 456 789 1
output
28964.2857142857

Note

In the third example there are $n - k + 1 = 7$ weeks, so the answer is sums of all weeks divided by 7.