PAIRPROD

Given an array A

of size n

, find the sum of the products of all pairs of numbers in the array.

Specifically compute the value of

$$\sum i=0n-2\sum j=i+1n-1AiAj$$

Chef wrote the following program to compute the above sum. (code)

Evaluate the worst case runtime complexity of Chef's code and write a program with a better time complexity that can pass the constraints given below.

It can be shown that the runtime complexity of Chef's code is $\Theta(na)$

where a is an integer. Find a

.

Also write a program that can compute the required sum quicker.

The sum can be re-written as

Input

The first line contains a single integer n

, the number of elements of the array A

.

The next n

lines each contain a space separated integer, denoting elements of the array A

.

Output

Print two lines

In the first line print an integer a

, where the time complexity of the code written by Chef is $\Theta(na)$

In the second line print an integer denoting the required sum

Constraints

$1\leq n\leq 105$

$1\leq Ai\leq 103$

Sample Input

```
3
1
2
3
```

Sample Output

```
*
11
```

Explanation

The first line of the sample output is not correct. '*' is written here so as to not give away the answer, in a correct output it should be an integer a

where the time complexity of Chef's code is $\Theta(na)$

The given array is {1, 2, 3}

In the second line the output is the required sum which is 1 * 2 + 1 * 3 + 2 * 3 = 2 + 3 + 6 = 11.