

## E. Enemy is weak

time limit per test: 5 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

The Romans have attacked again. This time they are much more than the Persians but Shapur is ready to defeat them. He says: "A lion is never afraid of a hundred sheep".

Nevertheless Shapur has to find weaknesses in the Roman army to defeat them. So he gives the army a weakness number.

In Shapur's opinion the weakness of an army is equal to the number of triplets  $i, j, k$  such that  $i < j < k$  and  $a_i > a_j > a_k$  where  $a_x$  is the power of man standing at position  $x$ . The Roman army has one special trait — powers of all the people in it are distinct.

Help Shapur find out how weak the Romans are.

### Input

The first line of input contains a single number  $n$  ( $3 \leq n \leq 10^6$ ) — the number of men in Roman army. Next line contains  $n$  different positive integers  $a_i$  ( $1 \leq i \leq n$ ,  $1 \leq a_i \leq 10^9$ ) — powers of men in the Roman army.

### Output

A single integer number, the weakness of the Roman army.

Please, do not use `%lld` specifier to read or write 64-bit integers in C++. It is preferred to use `cout` (also you may use `%I64d`).

### Examples

|               |                      |
|---------------|----------------------|
| <b>input</b>  | <a href="#">Copy</a> |
| 3<br>3 2 1    |                      |
| <b>output</b> | <a href="#">Copy</a> |
| 1             |                      |
| <b>input</b>  | <a href="#">Copy</a> |
| 3<br>2 3 1    |                      |
| <b>output</b> | <a href="#">Copy</a> |
| 0             |                      |
| <b>input</b>  | <a href="#">Copy</a> |
| 4<br>10 8 3 1 |                      |

### Codeforces Beta Round #57 (Div. 2)

**Finished**

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|               |             |
|---------------|-------------|
| <b>output</b> | <b>Copy</b> |
| 4             |             |
| <b>input</b>  | <b>Copy</b> |
| 4             |             |
| 1 5 4 3       |             |
| <b>output</b> | <b>Copy</b> |
| 1             |             |

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