B. Mishka and trip

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Little Mishka is a great traveller and she visited many countries. After thinking about where to travel this time, she chose XXX — beautiful, but little-known northern country.

Here are some interesting facts about XXX:

1. XXX consists of n cities, k of whose (just imagine!) are capital cities.
2. All of cities in the country are beautiful, but each is beautiful in its own way. Beauty value of i-th city equals to c_i.
3. All the cities are consecutively connected by the roads, including 1-st and n-th city, forming a cyclic route $1 — 2 — ... — n — 1$. Formally, for every $1 \le i < n$ there is a road between i-th and $i + 1$-th city, and another one between 1-st and n-th city.
4. Each capital city is connected with each other city directly by the roads. Formally, if city x is a capital city, then for every $1 \le i \le n,\ i \ne x$, there is a road between cities x and i.
5. There is **at most one** road between any two cities.
6. Price of passing a road directly depends on beauty values of cities it connects. Thus if there is a road between cities i and j, price of passing it equals $c_i \cdot c_j$.

Mishka started to gather her things for a trip, but didn't still decide which route to follow and thus she asked you to help her determine summary price of passing **each of the roads** in XXX. Formally, for every pair of cities a and b ($a < b$), such that there is a road between a and b you are to find sum of products $c_a \cdot c_b$. Will you help her?

Input

The first line of the input contains two integers n and k ($3 \le n \le 100\,000, 1 \le k \le n$) — the number of cities in XXX and the number of capital cities among them.

The second line of the input contains n integers $c_1, c_2, ..., c_n$ ($1 \le c_i \le 10\,000$) — beauty values of the cities.

The third line of the input contains k distinct integers $id_1, id_2, ..., id_k$ ($1 \le id_i \le n$) — indices of capital cities. Indices are given in ascending order.

Output

Print the only integer — summary price of passing each of the roads in XXX.

Examples

input
4 1 2 3 1 2 3

output
17

input
5 2 3 5 2 2 4 1 4

output
71

Note

This image describes first sample case:

It is easy to see that summary price is equal to 17.

This image describes second sample case:

It is easy to see that summary price is equal to 71.