



HOME CONTESTS GYM PROBLEMSET GROUPS RATING API CANADA CUP 🖫 SECTIONS

PROBLEMS SUBMIT STATUS STANDINGS CUSTOM TEST

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 : C_i .

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	
41 2312 3	
output	
17	

input 52 35224 14 output 71

Note

This image describes first sample case:

Codeforces Round #365 (Div. 2)

Finished

→ Virtual participation

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Start virtual contest



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→ Contest materials

- Announcement
- Tutorial

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.

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